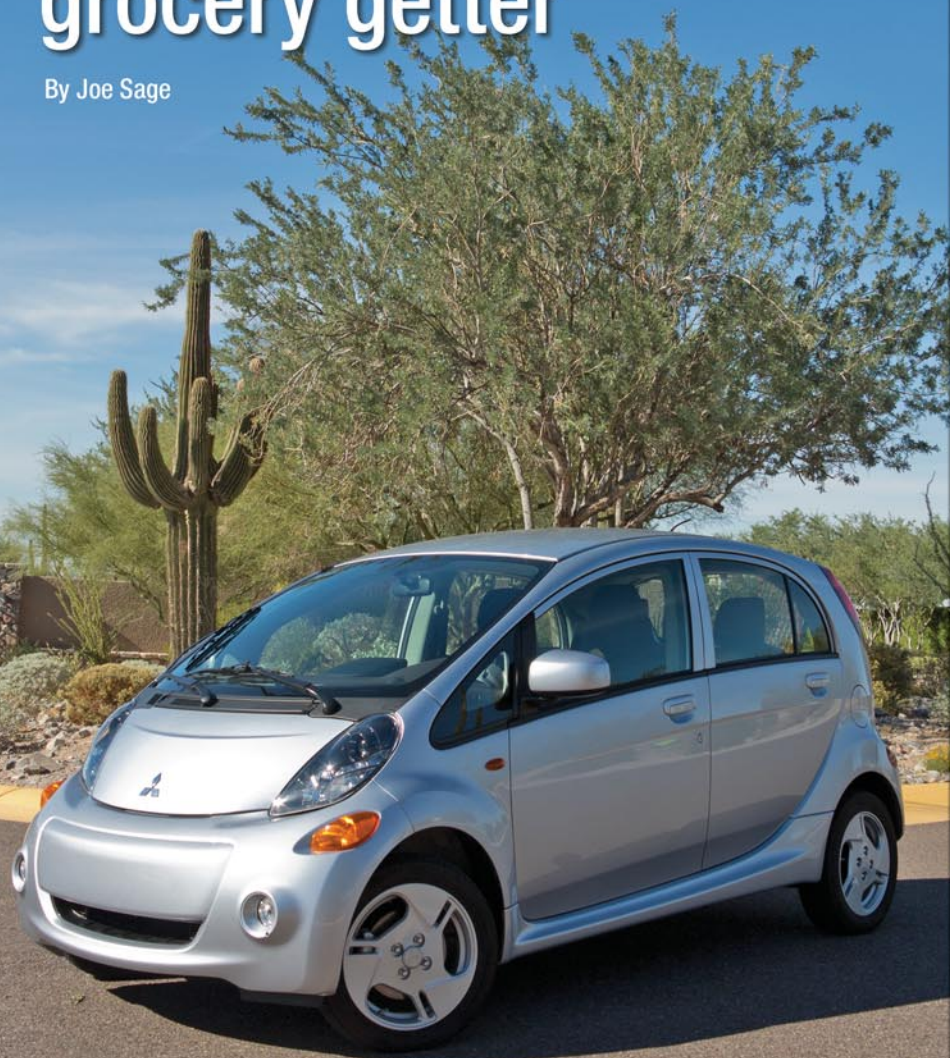


Pikes Peak hillclimb contender and potent grocery getter

By Joe Sage



We first drove the Mitsubishi i, or i-MiEV, in the basement of Cobo Hall, at the North American International Auto Show in Detroit, in January 2009. That level had been given over to alternative fuel vehicles, including an indoor track replete with greenery, waterfalls and fresh flowers (as winter raged outdoors, upstairs). The whole setup reinforced the feeling that these vehicles represented a fringe element at that time.

Flash forward to the present, and we discovered just how much more mainstream such a car has become.

MiEV originally stood for "Mitsubishi in-wheel-motor Electric Vehicle," as that is exactly how the company developed its earlier electrics. The new i-MiEV (a carry-over 2012 model) does not have in-wheel motors, though. Rather, it has an electric motor mounted on the rear axle. This placement does not quite turn it into a Boxster or Ferrari, but it does provide great balance and handling.

Despite that configuration change, the MiEV name has stuck for all Mitsubishi's electrics, so the "i" in this MiEV is said to stand for "innovative." As they all are.

As for the freestanding "i" model name (or the first "i" in "i-MiEV"), that is either just a name, or brought to us by the Department of Redundancy Department.

i-MiEV powertrain and price

The Mitsubishi i-MiEV is a 100 percent zero-emissions electric vehicle. (Yes, that means zero tailpipe emissions, and yes, there is a power plant involved somewhere.) The car has a 49-watt asynchronous AC motor, powered by a 16kWh lithium-ion battery pack, which in turn is chargeable via a 120v/240v onboard system.

Power is transmitted to the wheels via a single fixed-reduction-gear transmission. The drive selector has three positions: D, Eco and B. An energy meter keeps track of whether you are draining or charging power, and recharging is augmented through regenerative braking, as on familiar gasoline-electric hybrids.

Besides seeming unusual four years ago, and not so unusual now, the Mitsubishi i seemed very small four years ago, but less so now. It comes with a full complement of airbags—advanced dual fronts, front side-mounted and side curtain—as well as adjustable headrests, child seat latches and tire pressure monitoring. Add advanced electronics, such as active stability control (ASC) and traction control, plus an anti-theft alarm and immobilizer system. Specific to its electric status, the i includes a high voltage cut-off system and an acoustic vehicle alert system (AVAS) so pedestrians can hear it coming. The car weighs just 2595 pounds, with stopping power coming from front discs, ABS, electronic brakeforce distribution and brake assist.

Our i-MiEV with SE package stickered for \$31,125 (the non-SE base is \$29,125). Our test car had one Premium Package for \$2790, including a 40GB nav, music and real-time traffic server, Fuse hands-free link system, steering-wheel-mounted audio controls, rear camera, heated side mirrors, plus a quick-charge port and battery warming system you might think would be standard. With \$850 destination, it's out the door at \$34,765. However, that is before a federal tax credit of \$7,500 and any applicable incentives at the state level.

So think low-to-mid-20s (Mitsubishi states a "starting net value of \$21,625" or \$23,625 for the SE, after the \$7500 credit, but before options).

The SE is very well equipped, from leather-wrapped wheel and shifter, to 15-inch alloy wheels, to a 360W 8-speaker deluxe audio system. With plenty of electricity on board, not only are power windows and doors, auto headlights, heated seats, rear window defroster and such amenities included, but it has remote keyless entry (although not keyless start, which we wish it did). Rear seats have a 50-50 split fold-down feature, creating significant cargo volume.

First impressions of the Mitsubishi i

Our test i-MiEV was delivered by trailer, so we would not need to worry about any charge being already used up, and it would be returned by trailer, so we would not necessarily have to worry about running it down and needing time to recharge it. Recharging takes an estimated 22.5 hours using 120-volt household or office current, and we would only have the car for 48 hours or so. This made trailering a big plus for our drill, but it doesn't have much bearing on actual ownership.

Engineers work hard on the acoustic presence of internal combustion engines and exhaust, and they've been working hard on electrics. Our i-MiEV made a peculiarly different sound when being driven, noticeable as soon as it rolled off the delivery truck.

As we entered and sat down, we noted the interior is huge, much larger than its generally cute presence might suggest. We have become used to some smaller cars over the past few years—way smaller. This little electric is certainly bigger than a smart car, a Scion iQ, even a Chevrolet Spark. It's a four-door, which is very convenient, with a back hatch adding even more space. Knee room is a little tight, front and rear, though we still have a couple of inches between our legs and the wheel. It does not feel like a long distance driver.

The car has some cute and clever design details, such as the inside of the doors—a circular design, non-linear compared to the path of travel, but appropriate to the car's spirit. The instrument panel and center screen are well implemented, and we like its three easy knobs for climate control and simple arrangement of vents. Everything is well positioned, and controls are clear: you can get in this vehicle in the dark, and lights, turn signals and basic readouts are all just as you would expect. We easily tuned a few radio stations, and audio had solid bass, especially for this small space. Speakers are stylish. The A-pillars are an inverted Y-shape, with tiny windows in them. One windshield wiper lies flat, and one stands up vertically against the right A-pillar—a look that reminds us of the front of a high-speed train.

Firing up the i-MiEV

The car arrived reading 55 miles of range, although rated at 62 or so—due to cooler weather? Off we go.

The wheels look small, but 15-inchers were common in the not-horribly-distant past. We back off a curb at an angle, but we do that in big cars, too.

In our first couple of blocks, we pass a couple of roofers standing by their pickup truck, the first time we notice that this odd little car doesn't even raise a ruffle.

Is this little electric car fun to drive? When we had

driven it less than a quarter-mile, we hit our first roundabout—and just had to go around it another time. It was like a carnival ride. The i-MiEV handled well and turned well, staying nice and level. And its steering feels more connected and secure than a great many other electric implementations lately. This was simultaneously seeming like a real kick, and like much more of a normal car than we may have expected.

The i-MiEV has all the torque of any electric car, from the moment you step on it. So we turned onto the boulevard and gunned it. Visibility is huge. The windshield is huge. We mentioned the peek-through A-pillars, and mirrors are larger than average, inside and out. The cabin is tall, with plenty of glass all around.

We shared our first traffic light with an Infiniti QX56, a Toyota Tundra and a Maserati. Still, it does not turn heads—amazingly, to us. We were in an area that was crawling with Hummers five years ago, yet while some glance, nobody marvels and most don't even look.

The i-MiEV is great fun to drive. Before it arrived, we might have thought we'd put up with this thing for a couple of days and drive when we had to. But it turns out to be something we wish would never run out of charge, because it would be fun to drive all day and all night.

The car is tall enough and quick enough that we had no problem facing off a Tahoe and an F-Series pickup that might otherwise have gladly cut us off in most any vehicle. We passed a Prius and an old Porsche 944 Turbo at another point and got a kick out of the newness (and performance) of our i's technology versus either of those. In fact, with the torque of our electric, as a red light turned green, we dusted that 944 Turbo. We know he could dust us in the long haul, but that was a kick.

The relatively smaller size of the wheels revealed itself during a lane change on a surface street, and during a quick slalom we performed to doublecheck that. Most drivers wouldn't feel it. The car still tracks very well, but what we do feel is there on the straights, more than in a turn. We ultimately rate this as a directness, not wandering. We note that the brakes are very strong.

An electric car of course has no hot engine water to heat the cabin. We were getting some heat but not a lot while standing at a red light, so we pushed max, and the heat started blowing. But when the light turned green and we stepped on the pedal, the heat stopped. The summer equivalent of that might be a big downside, in our extreme climate, but for now we can only wonder.

Around town, the suspension is smooth, strong and firm, and the system is controlling things very well: they've definitely put some work into mitigating any front-drive characteristics.

We decide at one point that we have put our finger on the AVAS hum when in motion—"reminiscent of what you might hear at the dentist's office right before something uncomfortable happens," reads the logbook.

Besides the AVAS, we note sound effects when in reverse, and—loudest of all—a robotized BZZZZZZZ! as we dip down the righthand mirror while parking.

But mostly the car is near-silent. The trickiest thing is

KEEP RIGHT >>



Mitsubishi i-MiEV gets 2nd place finish at Pikes Peak Hill Climb

Mitsubishi's electric vehicle racing team had a strong debut on the challenging 12.42-mile, 156-turn course of the Pikes Peak International Hill Climb, grabbing a second-place finish in the EV class with its racing prototype Mitsubishi i-MiEV Evolution. Its lap time of 10 min 30.850 sec earned 8th place overall, out of 170 vehicles entered (with 132 crossing the finish line).

Driven by Mitsubishi factory test driver and two-time Dakar Rally winner Hiroshi Masuoka, the i-MiEV Evolution was designed specifically for Pikes Peak. With radical carbon-fiber bodywork, tube-frame chassis, advanced AWC all-wheel drive and a unique tri-motor configuration, the i-MiEV Evolution uses key components from the production i-MiEV, including motor, lithium-ion batteries and MCU.

The team also entered a production 2012 i-MiEV driven by SCORE International pro off-road racer Becca Gordon, who finished 6th in the EV class at 15:10.557. Fitted with safety gear and modified front and rear bumpers, this was the only street-legal, 100 percent electric-powered production car entered in the EV class this year.

"The Mitsubishi i-MiEV was awesome. It produced a lot more power—especially torque—than I had expected. The handling was also very good because so much of the car's weight—the electric motor and lithium-ion batteries—sits so low in the chassis. This allowed me to carry much more speed into the corners than I expected, and the torque from the electric motor helps to propel the car out of the corners. The car is really peppy," said Gordon. "Considering my car was 100 percent stock, I can definitely see all-electric cars succeeding in motorsports."

Visit YouTube.com/MitsubishiCars to see the Mitsubishi team at the 2012 Pikes Peak International Hill Climb, and Facebook.com/Mitsubishi for full event coverage. ■



to remember to turn it off, put it in park and take out the key. It's so quiet, the temptation is there to step up and walk away as you might from your desk.

The electric range game

We loaded the Blink app into our smartphone, to check for charging stations in the area. And they are everywhere—restaurants, AAA offices, a Maricopa County air quality office, some at a nearby airport, basically all over the place. For anyone who doubts there is an EV infrastructure, this should be a big wakeup call. Thank Phoenix-based ECOtality for the progress and this app.

After our first simple supper run, the estimated range readout had dropped from 55 to 45. We checked distance and had driven 8.5 miles, so with simple rounding, that is very close to linear and accurate.

Back at the office, we backed in to park, probably a good habit because it puts the plug closer to an outlet.

(It is at this point that we discovered the shifter takes some getting used to, in search of reverse and park. And there seems to be no way to verify what gear you're in at night, without turning on the ceiling light. You will of course learn the pattern by heart, when you own one.)

In the morning, we found that our range had dropped from 45 to 38 miles just while parked overnight—then to 37 while we sat recording those few words.

After our second run, our projected range was down to 16 miles. We had driven 15 miles, so on top of our earlier 8.5, and starting at an officially estimated 62, we should have been at 38.5. But that original 62 had never existed for us (the car arrived with 55 indicated). And from parking with a balance of 45 the first evening, we awoke and restarted with a balance of 37. Take 15 off that, and we should have been at 22 but were at 16. And so on. Bottom line is that we had 16/55ths of our

original charge left, or used 71 percent of what we had at the start. For 23.5 miles of travel. This extrapolates to only 33 miles total, on a charge. Clearly there are a lot of variables in play here, but based on that formula, you could still use this car to get to work about 15 miles away and still stop at the cleaners on the way home. Knock on wood. A little less distance, and/or a little recharging while at work, and things get better—and with 240v available, all the moreso—to the point that you could forget about range entirely, most of the time. But these are the general terms of the game.

We ran one more errand, about three miles away, and arrived with 13 miles of range left—a linear result. Most of our power losses seem to be while we are parked (therefore a doubly good time to plug in, if you can). At this point, we put the drive selector into Eco. You can feel a minor drag as soon as you shift from D to Eco, but we never thought about it again—no apparent downside, so if there's an upside, we would suggest operating this way if you can. We drove a quarter block and noted our range had already dropped to 10 miles, however, so we headed for a plug-in.

Or you can try the B mode. This biases the system toward more regenerative braking—at the expense of what, they do not say—intended to increase battery replenishment while not sapping any power output.

Either the Eco or the B mode is a useful tool to have, basically giving you the inverse of your own lead foot.

Despite this being our only full day with the car, we parked it to recharge, from 10:20am until 6pm, bringing it from a low of about 5, back up to a projected range of 26 miles (pro-rata, exactly the promised charging time). We then drove 7.5 miles, after which that balance had only dropped to 24. Hmm. Clearly, there can be surprises both ways. It wouldn't be that significant, if it weren't for the fully-charged total being in double digits.

You owe yourself a test drive

The Mitsubishi i-MiEV is both a technological tour de force and a comfortable, familiar driving experience, all rolled into one. If they put this same technology into a more conventionally styled package, sales might go through the roof. But nobody should be shy about something less conventional, in this case.

The i-MiEV has a style that's equal parts geeky and cool. Geeky of course seems appropriate to this vehicle, in a way, so that's mostly cool as well. Put it all together, and the car is completely cool.

To whatever degree this is a \$35,000 vehicle (pre-tax-credit), there are a great many other machines you could look at. But as a \$21k vehicle (with tax credits and no options), it's very compelling. And with so many novel attributes to be considered, it really shouldn't just come down to the money, anyway.

As we drove the i-MiEV, over three calendar days that felt like more (and we wished were more), we definitely got in the groove. On our smooth, modern highways, rolling through the night sky, driving this car—instead of old cast iron and boiling oil—feels absolutely perfect. Its confident stance completes the feeling.

We've established that charging the vehicle need not be an obstacle to ownership. The only obstacle is that everybody needs to test drive one. With a little wheel time, sales would increase exponentially. ■

