

HONDA EV PLUS

1997 MARKET PLAN



Honda's EV Strategy

- **DESIGN EV WITH BROAD MARKET APPEAL**
(4 PASSENGER + VERSATILE CARGO AREA)
- **MAXIMIZE RANGE BY USING MOST ADVANCED BATTERY** (NICKEL-METAL HYDRIDE)
- **LOW RISK CONSUMER ACCESS TO EV**
(COMPREHENSIVE LEASE PACKAGE; CLEAR INFORMATION)
- **ASSESS EV FOR FUTURE MASS MARKET POTENTIAL**
CUSTOMER ACCEPTANCE FACTORS FOR EV
INFRASTRUCTURE ISSUES
EV TECHNOLOGY ISSUES (BATTERY)

When Honda set out to develop a zero emission vehicle, Honda's EV team, developed what it considered to be a practical and refined electric vehicle:

- First, develop a vehicle with broad market appeal (i.e. 4 passenger + cargo)
- Second, maximize range by using the most promising advanced technology battery currently available, nickel-metal hydride batteries
- Third, launch the car in such a way to truly assess the potential market for a well-made electric vehicle, and
- Fourth, continue Honda's efforts to evaluate the future mass market potential of EVs, including such key factors as:
 - Customer Acceptance;
 - Infrastructure; and
 - Technology issues, such as reliability, durability, and cost reduction.

The Honda EV PLUS

“PLUS” MEANS: MORE THAN

“PLUS” MEANS: POSITIVE

• **MORE THAN TYPICAL EV:**

- *PURPOSE-BUILT, NEW-FROM-THE-GROUND-UP DESIGN*
- *MORE PASSENGER AND CARGO CAPACITY*
- *MORE RANGE DUE TO ADVANCED TECHNOLOGY BATTERIES*

• **PLUS MEANS A POSITIVE CONTRIBUTION**

Honda selected the car's new name, the “Honda EV PLUS,” because it communicates the new values designed into the car. The “+” symbol, can mean more. And the Honda EV is **more** than a typical EV.

- + It has **more** refinement and integration than EV conversions due to its purpose-built design,
- + It has **more** passenger + cargo carrying capacity and versatility,
- + And it has **more** range due to the use of an advanced technology battery

The “+” symbol, in math or electronics, means “positive.” The Honda EV PLUS also makes a **positive statement**.

The Honda EV PLUS

PERFORMANCE

- EPA City Range = 100 miles
- "Real World" Range = 60 to 80 miles
- 0 - 30 mph = 4.8 seconds (for city driving acceleration)
- Top speed = 80 mph (for highway driving)
- Regenerative Braking (recaptures coasting and braking energy)
- Meets all Federal Motor Vehicle Safety Standards (FMVSS)
- Electrical Safety (Isolation, Separation, and Insulation)
- Automatic Electrical Shut-Off (Intelligent Crash Detection)

The Honda EV PLUS represents a new balance between the competing values of: Performance, Luxury, Utility and Society.

Performance.

The EV PLUS combines fun-to-drive city performance, with confident and competent highway driving. For example, Honda emphasized low-end torque and 0-30 mph acceleration for functional and fun city driving. The 0-30 mph acceleration of 4.8 seconds is comparable to a 4-cylinder sedan. And the electronically limited top speed of 80 mph allows you to keep up with traffic on freeways.

And of course, the Honda EV PLUS meets all the relevant Federal Motor Vehicle Safety Standards. Electric safety is designed into the vehicle by isolating the high voltage components, limiting access to them, and by separating the electrical systems from the passenger cabin. Also, the electrical systems automatically shut-down when a crash is detected.

The Honda EV PLUS

PERFORMANCE

LUXURY

- **COMFORT FEATURES:**

- Automatic climate control with remote pre-heat, pre-cool
- AM/FM/CD stereo with four speakers

- **CONVENIENCE FEATURES:**

- Power mirrors, windows, door locks
- Remote: keyless entry, battery status inquiry
- Cup holders, sunglass holder, coin holder
- Recharge at home, overnight

Luxury.

Normally, one associates luxury with amenities like wood trim, leather interiors and a pleasantly quiet driving experience.

The EV PLUS has such upscale **comfort** features as automatic climate control with pre-heat and pre-cool features which can be remotely switched on and off. And a four speaker, AM/FM/CD stereo system. And the extremely quiet operation of the EV PLUS is unmatched.

It has **convenience** features like power windows, door locks, and mirrors; keyless entry and remote battery status inquiry. And the convenience of home recharging (never having to visit a gas station) is an added bonus.

The Honda EV PLUS

PERFORMANCE

LUXURY

UTILITY

- Roomy seating for four adults
- "Walk-in" access to rear seats
- "Fold-flat" rear seats for versatile cargo space
- Clear, easy to understand instrumentation

Utility.

The usefulness of this EV package is exemplified by features like roomy seating for four adults, "walk-in" passenger access to the rear seats and a large, versatile cargo area with "fold-flat" rear seats.

Good range is complemented by an innovative and informative instrument display.

The Honda EV PLUS

PERFORMANCE

LUXURY

UTILITY

SOCIETY

- Environmental (zero tailpipe emissions)
- Energy security (any powerplant fuel)
- Consumer feedback on viability of EVs

Society.

The EV PLUS meets the needs of society by offering:

Clean operation, with zero on-board emissions.

And by using a flexible energy source (since an EV operates on whatever fuel is used by the powerplants).

And the EV PLUS, with its broad market appeal and comprehensive lease program, will have feedback from customers on the future marketability of electric vehicles.

EV PLUS MARKET PLAN LIMITED PRODUCTION

- **HIGH COSTS:**
 - PURPOSE-BUILT VEHICLE
 - VERY EXPENSIVE BATTERIES
- **ADVANCED TECHNOLOGY BATTERY AVAILABILITY**
 - NOT READY FOR MASS PRODUCTION QUALITY; RELIABILITY; DURABILITY
- **SPRING PRODUCTION:**
 - DELIVERIES PLANNED FOR MAY 1997

Just as the EV PLUS is different from its competition, Honda's market plans also are different in many ways.

For instance, Honda will lease about 300 vehicles over the next couple of years. The smaller number is a result of several issues:

The only way to bring the costs down for a purpose-built vehicle with all-new technology is with high volumes.

However, the advanced technology batteries are not ready for mass production, and their costs are extremely high. The batteries alone, currently cost more than any model sold by the Honda Division.

The development of new battery technology remains a long and difficult process. The quality, reliability, performance and durability of these batteries are not yet optimized, nor fully understood.

Vehicle production begins this spring, with the earliest deliveries to customers planned for this May.

EV PLUS Market Plan Communities & Distribution

COMMUNITIES

- Costa Mesa (Orange County)
- Torrance (South Bay)
- Van Nuys (San Fernando Valley)
- Sacramento

DISTRIBUTION

- Leasing Managed by Dealers' EV Sales Specialists
- Service by Dealers' EV Service Technicians

Honda dealers will be responsible for the leasing and servicing of the EV PLUS. These dealers were selected for their proximity to our potential customers, for their interest in supporting the Honda EV PLUS project, and also for their outstanding performance in the area of customer satisfaction.

And by using real dealers to market, lease and service the vehicle, Honda will be further evaluating all the issues connected with the broader infrastructure issues associated with marketing electric vehicles.

Lease Terms and Conditions ***Southern California Leases****

MONTHLY LEASE PAYMENT	\$499
LEASE TERM - 36 MONTHS	
NO DOWN PAYMENT	
TOTAL DUE AT LEASE SIGNING	\$499

*** SUBJECT TO LIMITED AVAILABILITY**

MSRP \$53,999 based on estimates as follows:

Vehicle-only MSRP of about \$34,000

Advanced technology battery - Nickel-Metal Hydride - upgrade of \$20,000

No option to purchase at lease end

Taxes, license, title fees, and auto liability insurance extra (comprehensive & collision is included).

Lease price available only to residents in LA and Orange. Sacramento lease pricing will be announced at a later date.

SEE AUTHORIZED HONDA EV PLUS DEALERS FOR DETAILS

Honda's goal is to market the EV PLUS in such a way that customers can provide feedback on the value that they feel is appropriate for this product. That won't work if the price is too high or too low, or if the perceived technology risk is too great. So Honda conceived of an all-encompassing, no hassle, three-year lease, called the Honda EV PLUS Charter Lease Program.

The monthly payment will be \$499, for 36 months, with no downpayment. These leases are based upon a vehicle MSRP of \$53,999, which represents about \$34,000 for the vehicle alone, and \$20,000 for the advanced technology battery. It also reflects the South Coast Air Quality Management District's \$5,000 incentive, and the Federal Tax Credit. The Sacramento price will be about the same, but will be announced at a later date.

Charter Lease Package Value*

TOTAL MONTHLY LEASE PAYMENT		\$499.00
CHARTER LEASE PACKAGE VALUE SAVINGS		
Comprehensive & Collision Coverage	\$100.00	
Roadside Assistance	\$10.00	
All Maintenance including batteries, tires and brakes	\$60.00	
Unlimited mileage warranty		
TOTAL LEASE PACKAGE VALUE SAVINGS	\$170.00	
ESTIMATED MONTHLY FUEL SAVINGS ⁽¹⁾	\$30.00	
TOTAL LEASE VALUE AND FUEL SAVINGS	\$200.00	
"VEHICLE ONLY" LEASE PAYMENT		\$299.00

* Estimated value is based upon a similar condition for a conventional gasoline vehicle. See one of the authorized Honda EV PLUS dealers for complete details.

⁽¹⁾ Fuel Savings assumes monthly driving of 900 miles (30/day), average gasoline cost of \$1.28/gallon, fuel economy of 22 mpg; the EV PLUS can use as little as 0.4kWh/mile, at the off-peak rate of \$0.045/kWh or approximately \$0.018/mile, for a savings of about \$0.04/mile. After the \$5/mo. cost of the utility's charge for the special, time of use meter is subtracted, the net savings is shown above.

The Charter Lease program includes:

Comprehensive and Collision insurance coverage (customers will still need to purchase their own automobile liability policy); Roadside assistance; All maintenance, including tires, brakes and, of course the battery; and an unlimited mileage warranty, because, after all, Honda wants customers to drive these cars as much as possible.

These extras are worth about \$170/month to customers, and when combined with fuel savings of about \$30/month, Honda estimates that the "vehicle only" cost to consumers is comparable to about \$299/month.

MATCHING CUSTOMERS & EV PLUS

EV PLUS FIT TO CUSTOMERS	
Own a home?	Have a garage?
Fixed parking OK?	Is range adequate?
CUSTOMERS FIT TO CHARTER LEASE PROGRAM	
Is Dealer Convenient?	Financials OK?
Driving Record OK?	Demographics OK?

CUSTOMER DEMOGRAPHICS	
Married	1 or 2 children,
40's to 50's	maybe one of driving age
High household income	2 - 3 cars in household fleet
Environmentally oriented	EV Plus replaces a car
Homeowners	Plan to stay in the area

Four Honda dealers will have an EV PLUS on their lot by the end of January, at which time they will begin taking lease applications.

Leasing involves two steps:

First, the customer, together with the advice of the dealer and their sales staff, need to be certain that the EV PLUS and the customer are a good match. Honda will try to help the customer evaluate their driving needs together with the car's range, whether a back-up car is available for exceptions, whether a garage is available for re-charging, etc.

Secondly, Honda will evaluate the customer for such things as ability to meet lease commitment, good driving record, and to some extent, Honda is looking for diversity within the customer demographics to get the broadest possible image of the potential market. And, Honda is looking for people to replace a car. Honda wants the EV PLUS to be driven.

INFRASTRUCTURE ISSUES

EDISON EV

- Experience, Service, Simplicity
- One-stop shopping: Permits, utility coordination, contractor management, city inspections, etc.

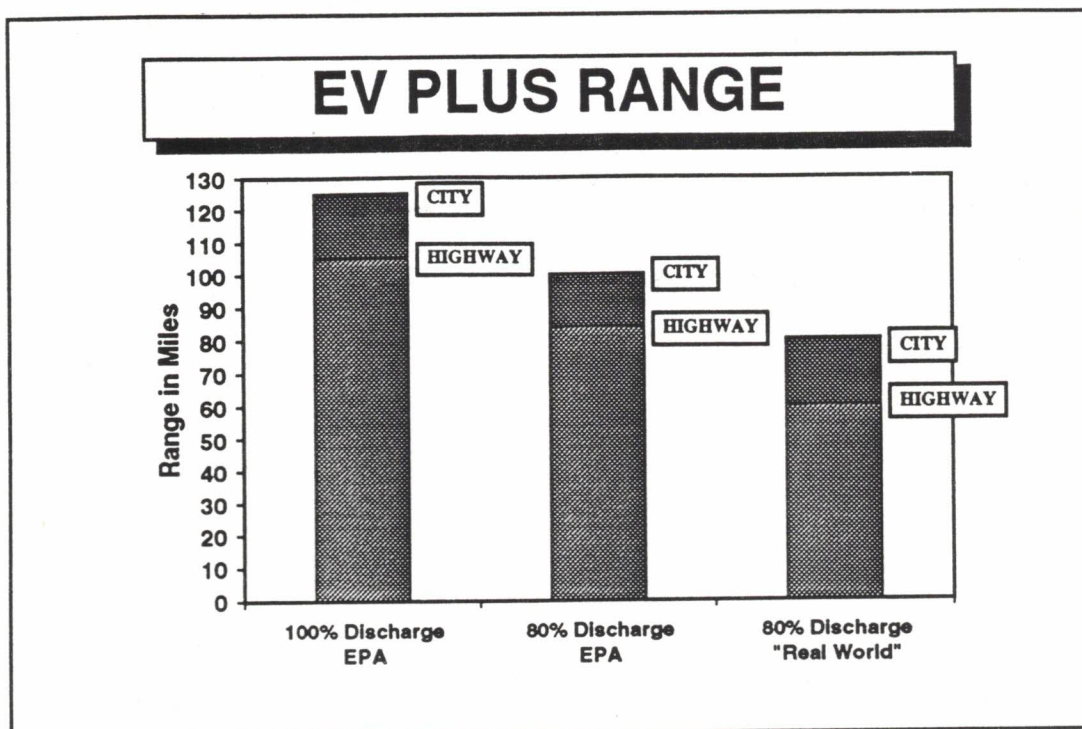
Infrastructure Costs	Purchase Price	Monthly
EV CD (Connecting Device)	\$750 - \$1,000 ⁽¹⁾	
EV CD Installation	\$750 - \$1,000 ⁽²⁾	
Utility Charge for 2nd TOU Meter		\$3 - \$5

⁽¹⁾ These are estimated prices. Final pricing is not yet available. EV CDs may be offered with a guaranteed re-purchase offer, further reducing the total cost of this device.

⁽²⁾ Each home is different, however, in a simple installation where there is adequate service capacity, and the service panel is convenient to the garage, this is an approximate price.

In order to simplify the process of purchasing and installing an EVCD, or EV Connecting Device, Honda will work with Edison EV as its “preferred provider and installer.” They provide one-stop shopping and manage all the coordination between city building inspectors, the utility, the electrical contractor, the supplier of the EVCD, and the customer.

The Honda EV PLUS has a compact on-board charger that can recharge at either the faster, 220V/30A rate, or the slower, 110V rate. The faster, 220V/30A rate requires an off-board EV Connecting Device, called an EVCD. The EVCD includes an intelligent wall box that includes some safety systems, a timing device for off-peak charging, and other components. Typically, the utility will require a separate time-of-use meter for the low, off-peak EV rates, and its own, dedicated circuit installed. The EVCD is typically hard-wired to the house, and includes a cable and a standardized EV connector. It is anticipated that these EVCDs, will retail for about \$750 to \$1,000. For emergencies, regular household 110V charging is available, but it is at a much slower rate.



The Honda EV PLUS, using the advanced technology Nickel-Metal Hydride batteries, has an EPA city-mode range of 100 miles, and an EPA highway-mode range of 84 miles, from a fully charged battery, down to an 80% discharged battery, when the battery is at the peak of its capacity.

However, battery capacities change over time, and depending upon usage. EPA city and highway modes are rather "soft" driving modes with no actual accessory loads like heating and air conditioning. And real people can have pretty aggressive driving cycles, and some may even drive up hills, which can affect battery capacity.

That is why Honda has decided to include an approximation of "real world" driving ranges in its literature. Honda's current, best estimate is that the Honda EV PLUS will deliver 60 to 80 miles "real-world" range on a regular basis, and with additional fuel remaining in reserve. That is a reasonable range for a first generation EV with 4-passenger and cargo-carrying capacity.

HONDA'S PROGRAM

- **EXCELLENT VEHICLE**
 - Purpose-built, advanced technology battery
 - Refined, versatile, broad market appeal
- **CHARTER LEASE PROGRAM**
 - Excellent value; protects consumers from risk
 - Valuable feedback on real potential market of EVs
- **HONDA'S CONCERNS & STUDY POINTS**
 - Battery technology issues
 - Infrastructure issues
 - Customer acceptance issues

Finally, the EV PLUS presents Honda with an excellent opportunity to learn about the future potential of electric vehicles.

It starts with a practical, purpose-built vehicle using advanced technology batteries.

Honda has packaged that car within a program that frees the customer from nearly all the uncertainties associated with a new technology.

Honda hopes to learn, along with our customers, what the real values are that consumers associate with this technology.

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