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Ford Motor Company Comments on

Notice of Public Hearing to Consider
Adoption of the 2008 Amendments to the
California Zero Emission Vehicle Regulation

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Ford Motor Company (Ford) welcomes the opportunity to comment on California's Proposed 2008 Amendments to the Zero Emission Vehicle (ZEV) Regulation. The Zero Emission Vehicle Regulation is a "technology-forcing" regulation that required modification on several occasions because the pace of technological development, costs, and realities of the marketplace have not met the expectations set by the Air Resources Board (ARB). As expressed in prior comments, Ford continues to believe that the ZEV mandate does not align with market demand, thereby imposing high costs on society, and it diverts manufacturer resources from the development of future clean technologies by imposing artificial near-term obligations. Assuming that ARB intends to continue with its ZEV program in spite of these drawbacks, we generally agree with staff's proposal to place more emphasis on Enhanced AT-PZEV technologies (i.e., plug-in hybrid electric vehicles (PHEVs) and hydrogen internal combustion vehicles (H2 ICVs)) in the near-term; as well as staff's proposal to place battery electric vehicles (BEVs) on more equal footing with Fuel Cell Vehicles (FCVs). However, we still remain concerned over the volume of vehicles required and the lead-time provided to introduce a brand new technology. These comments, in addition to detailed comments on specific issues in the proposed amendments, are discussed further below.

Fuel Cell Vehicle (FCV) Volumes

The ZEV regulations are designed to be technology forcing. The difficulty with this approach is that there is great uncertainty in the pace of technological developments with emerging technologies, such as FCVs. Great progress has been made in addressing many of the technological challenges of fuel cell propulsion systems; however, many technical and commercial challenges still exist, which will continue to preclude large-scale introduction of this technology for many years to come. Technical challenges include fuel cell stack and system durability and robustness, on-board fuel packaging, and weight. Commercial challenges include cost and availability of hydrogen infrastructure. The volume requirements mandated by the ZEV regulations detract from Ford's ability to overcome these remaining challenges through core fuel cell research and development because resources must be diverted to building and placing in service high volumes of immature technology vehicles.

Ford currently has 30 Focus FCVs on the road in three different countries. These vehicles have accumulated more than 700,000 miles of customer use. We constantly monitor these vehicles to provide feedback to our fuel cell program on durability, consumer usage, and maintenance issues. We understand the ARB's goal of advancing technology by requiring vehicle deployment. However, at the current state of technology and cost, we do not believe increasing the fleet from the 30 vehicles that we have today to the 100s of vehicles required by the proposed ZEV regulations would further the advancement of the technology. In fact, putting large volumes of vehicles on the road frustrates the goal of advancing the technology, because the resources that would have been used to progress the technology are being spent figuring out how to integrate the technology into a production vehicle program, and tracking and maintaining those vehicles.

The ARB estimates that a fuel cell vehicle will cost $300,000 in the 2012 – 2014MY time frame. Based on our experience with earlier ZEV program vehicles, finding customers for hundreds of vehicles at this cost is a significant, if not insurmountable challenge.

We recommend that the fuel cell vehicle volume requirement be reduced until there are significant breakthroughs in technology and cost.

Battery Electric Vehicle (BEV) Volumes

Ford has been involved in battery electric vehicle research and development since the 1960s, long before the ARB's ZEV regulations came into existence. Ford has spent nearly a billion dollars on battery electric vehicle development (not including core research) and Ford continues to work on advanced battery research. Despite these efforts, battery electric vehicles have not been able to break into the market, beyond niche applications. Technical challenges are principally related to the battery, including deep discharge cycling, robustness, and gravimetric and volumetric energy density. Commercial challenges include high cost, limited driving range, long recharge times, and limited infrastructure.

The 2003 ZEV regulatory revisions concentrated on fuel cell vehicles under the optional alternative path. The inequitable treatment of BEVs under the existing regulation essentially eliminated this technology as a viable option for compliance. Since 2003, there have been significant improvements in battery technology, which should encourage another look at BEVs. Furthermore, the regulation should not pick winners and losers. A balanced treatment is important so as not to favor one promising technology at the detriment of another. Ford supports the ARB's proposal to provide more even treatment of BEVs in the regulation, as compared to FCVs.

Plug-in Hybrid Electric Vehicle (PHEV) Volumes

There is a lot of interest in plug-in hybrid vehicles. However, similar to battery electric vehicles, the principal challenges are related to the high energy / high power batteries needed for plug-in hybrid vehicles. PHEV batteries must be further developed for durability and robustness, including the ability to withstand a large number of deep discharge cycles over the life of the vehicle, cold temperature charge acceptance, and ability to operate in a large range of operating temperatures. Plug-in Hybrid vehicle challenges include control of cold start emissions under load, ability to meet evaporative emissions with less engine operation, and cost.

Ford believes that the ARB is moving in the right direction by emphasizing zero-emission technology that is closer to commercialization in the proposed amendments. However, we are concerned over the lack of lead-time to introduce this new technology and the volumes required considering the high cost.

To bring a brand new technology to market, the normal product development time is significantly extended. Depending on the technology, product development times could be as long as 48 to 60 months. The ARB is providing less than three years lead-time to bring significant volumes of a new technology to market. Furthermore, the enabling technology for PHEVs, the Li-Ion battery, is still not ready. Although significant progress is being made, there are still numerous challenges with the battery technology, as stated above. Finally, the test procedures for PHEVs are still not defined. Although the ARB has scheduled a test procedure workshop this spring and a Board Hearing for October 2008, we need to move forward with design decisions now. It is difficult to design a system without knowing what test procedures will apply. We understand the ARB's desire to introduce PHEVs to address the "no backsliding" concerns, but we feel that the ARB must provide adequate lead-time before mandating this technology. We recommend that the Silver+ PHEV requirement be implemented in 2014MY; recognizing the huge shift in the ZEV mandate technology requirement and the required lead-time to introduce this new technology.

The ARB's proposal requires 25,000 PHEVs in the 2012 – 2014MY timeframe in California. When other states that have adopted California standards are considered, this number jumps to 75,000, or higher if additional states adopt California's standards. The ARB estimates that the cost of this technology in the 2012 – 2014MY timeframe is $25,000 incremental over a conventional vehicle. Under Assembly Bill 1811, ARB is offering incentives of up to $5000 for a PHEV. This represents about one-fifth of the incremental costs. Consumers may also be willing to pay an incremental amount to get a PHEV; we estimate that this may be on the order of $5000 per vehicle. If this is correct, the combined effect of the state incentives and the consumer accounts for about two-fifths of the incremental cost. That still leaves $15,000 per vehicle unaccounted for. The ARB should not mandate the production of such large volumes of new-technology vehicles when it is clear that the market cannot bear the costs of such vehicles. Manufacturers are facing severe challenges due to the economy and can not afford to lose anything approaching $15,000 per vehicle for such a large quantity of vehicles. These costs cannot be spread over all of the vehicles we sell because those vehicles would no longer be competitive with similar market entries offered by small and intermediate manufacturers not subject to the ZEV mandate. Ford recommends a more gradual ramp-up of the PHEV volumes in recognition of the significant costs. Perhaps this could be addressed with a phase-in for the

states that have adopted California standards, similar to the recommendation for BEVs below (See "States that Adopt California Standards").

Future Volume Requirements

The ARB's proposal substantially increases the "Gold" category in the 2015MY as shown in Table 1.

Annual Volume Requirements (including all California States)		
	2012 – 2014MY	**2015 – 2017MY**
FCVs	840	8,400
BEVs	1400	42,000+

There is a 10 fold increase in the FCV requirement in the 2015MY. The ability to meet this volume increase will highly depend on improvements in fuel cell technology. Because the travel provision expires for BEVs, there is an even greater increase in the BEV volumes in 2015MY; a 30+ fold increase. The ability to meet the BEV volume increase is difficult because of the limited market for these vehicles. Ford recommends that a technology review be conducted in 2010, to allow enough time to evaluate and plan for the 2015MY requirements.

The ZEV regulations are designed to be technology forcing, but as history has shown, it is difficult to predict the pace of technology development. The ARB must recognize that when forcing technology, it may be necessary to make adjustments if technology improvements or market acceptance of advance technology vehicles has not met expectations. In light of the technological uncertainty, there should not be a so-called "no backsliding" rule, when such aggressive targets are set. The very concepts of "backsliding" and "no backsliding" should only be applied to situations in which a particular level of performance has already been established as feasible and sustainable. That is not the case here.

States that Adopt California Standards

There are 13 states that have adopted California standards and more states are expected to adopt in the future. In order for the LEV and ZEV programs to continue to work as intended, it

is incumbent upon ARB to design a program that works not only in California, but also in the other states that have adopted California standards. The ARB previously recognized the difficulty of requiring volumes of pre-commercial vehicles in numerous states and has adopted a provision in section 1962(d)(5)(D), commonly known as the "travel provision", that will allow a vehicle placed in one ZEV state to count in the other ZEV states. This is necessary for the early development of these advanced technology vehicles.

Ford supports the extension of the travel provision to BEVs. None of the major manufacturers currently offer BEVs. To require large numbers of BEVs in various states, is not practical when these vehicles are currently not being marketed and the consumer base is unclear. The ARB proposes to have the travel provision expire for BEVs after the 2014MY. This results in over a 30 times increase in the BEV requirement between 2014MY and 2015MY. This amounts to an unprecedented quantum leap in BEV volume from one model year to the next; it is not realistic considering the limited niche market for these vehicles. Manufacturers must invest significant resources in advancing zero emission technologies. Therefore, manufacturers must look forward several years to make sure their technology path will achieve compliance with the regulations. The huge increase in the BEV requirement in 2015MY may discourage manufacturers from choosing this technology option. If it is appropriate to have the travel provision expire for BEVs, Ford recommends that there be a phase-out schedule for states that have adopted California standards, so that there is a more gradual, realistic increase in the number of BEVs required.

The ARB proposal does not include a travel provision for Enhanced AT-PZEVs, including Hydrogen Internal Combustion Vehicles (H2 ICVs). H2 ICVs are dependent on a hydrogen infrastructure, which is not developed outside of California. If a manufacturer chooses this technology path, they must place these vehicles in every state that has adopted California standards. The lack of infrastructure in states outside of California essentially eliminates this technology as a viable compliance option. Ford believes that H2 ICVs advance the technology of zero emission vehicles by addressing the difficulty of on-board hydrogen storage. Furthermore, these vehicles will help to develop a hydrogen infrastructure in support of the California Hydrogen Highway. For these reasons, Ford recommends that the travel provision be extended to H2 ICVs. The credit for H2 ICVs could be reduced while the travel provision is applicable to these vehicles such that the total number of vehicles is comparable to the total

number of other Enhanced AT-PZEV vehicles. Once it is clear that the hydrogen infrastructure is sufficiently developed in states other than California to support the placement of H2 ICVs in those states, the travel provision and the accompanying reduced credit provisions could be phased out in tandem.

The ARB's proposal does not extend the travel provision to PHEVs. Although there are no unique infrastructure needs for this technology, these vehicles are significantly more expensive than conventional internal combustion vehicles. As noted above, the ARB estimates that the incremental cost of a PHEV is $25,000 over that of a conventional vehicle. California has had experience with promoting advanced technology vehicles and is active in providing incentives to encourage the purchase of these vehicles. For example, under AB 1811, CARB is providing a $5000 incentive for the purchase of a PHEV. While this incentive is unlikely to be sufficient to create the desired level of market demand for PHEVs, it is better than no incentive at all. Ford is concerned that other states will not be as active as California in providing incentives to make this technology succeed in the market place. This could result in a manufacturer being able to comply with the ZEV regulation in California, but not in a state that doesn't provide a comparable incentive package for this expensive advanced technology. It is important for the success of the ZEV regulations to ensure that all states, including California, recognize that they have a key role to play in creating incentives for the purchase of new-technology vehicles with higher costs. Ford recommends that the Enhanced AT-PZEV obligation in states outside of California be reduced if those states do not offer a comparable incentive. California could publish their incentive schedule a few years in advance to allow other states to plan accordingly.

PHEV Credits

Ford recommends that the credit for a "blended operation" PHEV be put on equal footing with an "all electric range" PHEV. A "blended operation" PHEV will use energy from the grid to compliment the operation of the vehicle's internal combustion engine, but may not provide significant all electric range. The same goals are achieved with a "blended operation" PHEV as with an "all electric range" PHEV; i.e., advancing technology, reducing emissions, diversifying energy usage, and lowering greenhouse gas emissions. The ZEV regulations are technology forcing regulations. The purpose of providing credit for AT-PZEVs is to encourage the

development of technology that supports the goal of zero emissions. If the same zero-emission technology (e.g. battery and motor) is put on a vehicle, one being a large vehicle in a "blended operation" and the other being a small vehicle in an "all electric range" operation, then the same credit level should be earned. The larger "blended operation" vehicle may be used to transport a larger family; for example, taking the kids to school, running errands, driving the kids to their soccer game. The smaller "all electric range" vehicle may be used to commute to work. Both vehicles have unique but necessary uses and deserve the same credit level because they have the same technology and use the same amount of energy off the grid. Ford recommends that if vehicles have the same zero-emission technology, then they should receive the same credit level.

At a minimum, we do not feel that the ARB's proposal appropriately handled the elimination of the Low Fuel Cycle Emissions Allowance. The ARB wanted to simplify the regulation by eliminating the PHEV Low Fuel Cycle Emissions Allowance of 0.15. The ARB incorporated the PHEV Low Fuel Cycle Emissions Allowance into the Advanced Componentry Allowance for a Type F hybrid, which is set at 0.85 for the 2009 – 2011MY. However, the ARB did not make a similar adjustment for a Type E hybrid. Therefore, a "blended operation" Type E PHEV gets no credit for using low fuel cycle emissions energy from the grid. The purpose of the Low Fuel Cycle Emissions Allowance was to account for the low fuel cycle energy from the grid. This is similar to the purpose of the Zero-Emission VMT Allowance, which accounts for the equivalent all-electric range delivered from the low fuel cycle energy from the grid. Thus, the Zero-Emission VMT Allowance is a more accurate account of a PHEV's capability to use a low fuel cycle emissions fuel. Ford recommends that the Low Fuel Cycle Emissions Allowance of 0.15 be incorporated into the Zero-Emission VMT Allowance, rather than the Type F Advanced Componentry Allowance. The Type F Advanced Componentry Allowance could be reduced such that the effective total PHEV credit would be the same as the ARB's proposed total credit.

Finally, Ford believes that a simpler approach to the PHEV credit calculation may be better. The Zero-Emission VMT Allowance is a fairly complicated formula which is dependent on test procedures that are yet to be defined. As noted above, the ARB is beginning to hold workshops to discuss these test procedures with a Board Hearing tentatively scheduled for October 2008. There are significant issues that need to be addressed in these test procedures. Because of the lack of lead time that the proposal provides to introduce this new technology, the

ARB's proposal forces manufacturers to accelerate the development of PHEVs; requiring design decisions to be made. These design decisions are being made without knowing the impact on the credit earned because the test procedures are not defined.

Furthermore, utility factors based on the entire population of vehicles driven in the U.S. are not representative of the consumer that will want to purchase a PHEV. The people likely to purchase a PHEV are expected to have relatively short commutes and highly predictable day-to-day driving patterns that will best utilize the plug-in operation of the vehicle. Until there are more data on customer usage of PHEVs, Ford recommends that the utility factor provision in the Zero Emission VMT Allowance be eliminated.

Because the battery is the key component to for a PHEV, Ford recommends a simple Zero-Emission VMT Allowance that is based on total battery capacity. Total battery capacity is suggested instead of useable energy capacity to avoid the need to define test procedures to measure useable energy capacity. Given the significant expense of the battery, one can assume that manufacturers will maximize the useable capacity of a battery, so that the total capacity would be an adequate metric. Although this approach may not be as accurate as the approach proposed by the ARB, we believe there are benefits to a simple approach at this stage of the technology. Once we have test procedures defined, some experience with this technology, and data from customer usage, it may be appropriate to go to a more complicated formula. In the meantime, Ford recommends a simple Zero-Emission VMT Allowance based on total battery capacity; for example, Zero-Emission VMT Allowance = 0.1 x Battery Capacity (kWh).

Advanced Technology Demonstration Programs

The ARB is proposing, in section 1962.1(g)(4), to limit demonstration programs to six vehicles per year for the 2009 – 2014MY. Ford believes that demonstration programs are an important tool to bring technology to market faster. Demonstration programs allow a manufacturer to get technology out in the field early to get customer feedback and gather data to improve the technology prior to introducing a high volume production program. Carrying out a full-blown emissions certification program with the accompanying durability requirements could delay the introduction of a new technology for up to two years. Under today's regulations, demonstration programs are allowed, but the manufacturer must first obtain an Executive Order. We believe this is an appropriate mechanism to speed the introduction of new technology, yet

allow the ARB to be comfortable that manufacturers are providing due diligence in their efforts to introduce low-emitting advanced technology vehicles. If a larger demonstration program is planned, the ARB can require additional testing prior to issuing an Executive Order. Furthermore, the ARB can qualify the Executive Order to apply to a specified number of vehicles. Ford recommends that a regulatory limit not be placed on the number of vehicles included in a demonstration program.

Ford currently has a demonstration program of 30 Focus FCVs that are placed in 3 different countries. Nine of these vehicles have been placed in California. The ARB's proposal to limit the credit available to only six vehicles would discourage manufacturers from placing additional vehicles in California. We would likely keep any vehicles over six in Michigan where we have our engineering staff to support the vehicles. Ford is also working with Southern California Edison on a 20 vehicle PHEV demonstration fleet. Although we are still working on the emissions calibration, if we are able to achieve PZEV emissions standards on these vehicles, it would be appropriate to earn credit for these vehicles under the ZEV regulations. This demonstration program is limited to a few years; therefore, a full durability program for 10 year / 150,000 miles has not been conducted. Conducting such a program would delay the introduction of these vehicles. Therefore, it is appropriate to earn credit under the advanced technology demonstration program. The ARB's proposal to limit the credits earned for this program to only six vehicles may discourage the placement of more than six vehicles in California. As stated previously, Ford recommends that a regulatory limit not be placed on the number of vehicles included in a demonstration program.

It is our understanding that the ARB's proposed demonstration program limit applies to six vehicles per year, per program, per state. For example, if a manufacturer has two separate demonstration programs in one year, a FCV program and a PHEV program, each program is limited to six vehicles. Furthermore, a manufacturer may earn credit for six vehicles placed in California and six vehicles placed in New York. If these are ZEV vehicles for which the "travel provision" applies, the manufacturer earns credit for a total of 12 vehicles. Please note that when Ford was setting up the demonstration program for the 30 Focus FCVs, we were very concerned with having to support multiple locations. There are substantial resources needed to support these advanced technology demonstration programs, including identifying a customer and signing a contract, setting up a facility to service the vehicles, setting up a fueling station to fuel

the vehicles, and assigning dedicated on site personnel to monitor and service the vehicles. The ARB should consider the support system needed for advanced technology demonstration programs. Limiting the credit earned to only six vehicles may discourage a facility to be set up to support such a small fleet.

Finally, it appears that ARB is proposing to eliminate the ability to earn credits for advanced technology demonstration programs after the 2014MY. There will be technological achievements in the future which are not foreseen today. When dealing with advanced technology, the ARB must be open to new ideas. It is premature to place a time limit on the ability to earn credit for advanced technology demonstration programs.

Ford supports ARB's proposal to require a minimum of 2 years for a demonstration program, but we do not support a numerical limit or an expiration date on the ability to earn credit for advanced technology demonstration programs.

Intermediate Volume Manufacturers

The ARB proposal provides an additional 6 year phase-in period for intermediate volume manufacturers that transition to large volume manufacturer status. The ZEV regulations put large volume manufacturers at a competitive disadvantage compared to intermediate volume manufacturers that are profitable and growing. Furthermore, many intermediate volume manufacturers have large global resources and are already developing fuel cell technologies. Intermediate volume manufacturers that are close to transitioning to large volume status are carefully watching their volumes and predicting when they will be subject to the mandate. The existing regulations already provide six year lead time for a transitioning manufacturer. We do not believe additional time is justified. Because of the competitive issues, Ford does not support changes to the intermediate volume manufacturer phase-in requirements.

Fuel Fired Heaters

The ARB's proposal eliminated the provisions for fuel fired heaters. While this may be fine for California, it may not lead to a program that can be adapted for other states. Climates in the Northeast can be very cold. Because BEVs are an option to meet the ZEV regulations, and because the "travel provision" is eliminated for BEVs in the 2014MY, it is important to consider the climatic conditions in these states before eliminating the fuel fired heater provisions.

Batteries have limited range and providing electric heat in the winter in the Northeast can easily reduce winter driving range by 50%. To the extent that the ARB wants these rules to be workable elsewhere, Ford recommends that the ARB retain the fuel fired heater provisions in the existing regulations.

Specialty ZEVs

The ARB's proposal has eliminated the provision that provides a specialty ZEV that has the same zero emission energy storage device and chassis as an existing ZEV from which it was modified to be categorized on the basis of that existing ZEV. Ford has used this provision in the past when our Ranger EVs were modified for use by the United States Postal Service. Ford believes expanding the use of zero emission technology into different applications helps in the commercialization of the technology. Therefore, Ford recommends that the existing regulation on specialty ZEVs be retained.

Clarify Section 1962.1(d)(5)(E) Counting Specified ZEVs Placed in a Section 177 State

As stated earlier, the ARB's proposal allows ZEVs placed in California to count in all states that have adopted the ZEV regulations. The opposite is also true, a ZEV placed in a state that has adopted the ZEV regulations counts in California. What is not clear is that a vehicle placed in one ZEV state should count in all ZEV states. For example, a ZEV placed in Rhode Island should count in Connecticut. Ford recommends that ARB revise sections 1962 and 1962.1 to clarify this situation.

Extended Service Multiplier

Section 1962(f) of the existing ZEV regulations provided an extended service multiplier for specified 1997 – 2003MY ZEV vehicle types for each full year the vehicle is registered in California beyond the first three years of service. This provision is only applicable thru the 2003MY because a new provision was introduced in Section 1962(d)(5)(C) for 2004MY that would provide a 1.25 multiplier up front if a specified ZEV was either sold or leased for three or more years to a motorist who is given the option to purchase or re-lease the vehicle for two years or more at the end of the first lease term. This later provision is easier to account for because the agreements are provided with the initial sales or lease agreement. The effect is that if a specified

ZEV is registered in California for five years, it should earn 1.25 times the original credit. Manufacturers introducing a brand new technology may initially want to limit the introduction to a few years until there is more experience and data gathered. However, if the vehicle is performing well and the manufacturer is comfortable extending the initial period to five years, then those vehicles should receive the same credit as if the agreement was made up front. This will still be easier than the accounting for the annual extended service credit, because it will only be requested once after five years in service. Ford recommends that the existing ZEV regulations be revised to apply a 1.25 multiplier to a specified ZEV that has been registered in California for five years, even if the agreement to extend the lease was not included in the initial lease agreement. This will encourage manufacturers to keep the new advanced technology vehicles on California's roads longer.

Light Duty Trucks > 3750 lbs. GVW (LDT2s)

The ZEV regulations account for credit in g/mi Non-Methane Organic Gas (NMOG). This is appropriate because it accounts for the air quality benefit of replacing a fleet average vehicle with a zero-emitting ZEV. Because PC/LDT1s and LDT2s have a different fleet average, a different g/mi NMOG credit should be earned for a PC/LDT1 versus an LDT2. Ford understands the inclusion of LDT2s in the ARB's proposed ZEV Credit Calculations Section 1962.1(g)(2)(A) and (B) is to provide an LDT2 vehicle with a credit level based on the LDT2 fleet average vehicle. Ford recommends that a similar change be made to the ARB's proposed Section 1962 and the test procedures. If a manufacturer introduces an LDT2 that qualifies for ZEV credit, that vehicle should earn credit based on the LDT2 fleet average NMOG regardless of whether it is before or after 2009MY.

Public Disclosure

The proposed amendments require the public disclosure of each manufacturer's annual production data beginning in 2009MY and annual credit balances beginning in 2010MY. This is in response to a public records act request from the ZEV Alliance. We appreciate the ARB staff working with the Large Volume Manufacturers and the ZEV Alliance to try to resolve this issue. We believe the proposed amendments provide a good balance between the ZEV Alliance's desire to have all information made available and the manufacturers concerns regarding the need to

keep trade secret information confidential because of the implications this would have on our competitors ability to infer future product implications or business relationships with other entities.

Conclusion

Ford supports the ARB's goal for a sustainable zero emission vehicle transportation system. However, we urge ARB to move forward cautiously to avoid pushing specific technologies into the market before they are commercially viable, leading to market rejection which would further delay achievement of the ARB's goals. Ford believes that the ARB is moving in the right direction by emphasizing zero-emission technology that is closer to commercialization. However, we remain concerned about the aggressive volume requirements and believe a review should be conducted in a few years to evaluate the technology development and market acceptance of the various ZEV technologies.