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TESTIMONY OF

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BEFORE THE

SUBCOMMITTEE ON ENERGY AND POWER
OF THE
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE

U.S. House of Representatives
2123 Rayburn House Office Bldg.

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I am pleased to be with this Subcommittee today to discuss the standards for motor vehicle fuel economy established by the Energy Policy and Conservation Act (EPCA).

The EPCA established specific fuel economy standards for passenger automobiles for 1978-1980 and for 1985. Under the Act the standards for the intervening years, 1981-1984, were set by the National Highway Traffic Safety Administration (NHTSA) in July 1977. This set of standards calls for larger fuel economy improvements in the early years of the period than in the later years. Recently some questions have been raised as to whether a more gradual approach to the 1985 goal -- a so-called "straight-line" approach -- might be a more cost-effective strategy for the nation. Though more gasoline would be consumed through this latter alternative, the straight-line approach would allow more time for the development and engineering of the necessary technology. To the extent that this reduces the costs of meeting the standards, the undesirable consequences of the additional gasoline consumption might be offset by the cost savings.

NHTSA is now evaluating the benefits and costs of its existing regulations with a view to determining whether any modifications seem warranted. While questions have been raised about various aspects of the regulations, CEA's interest has been concentrated on the question of the alternative schedules for achieving the 1985 goals of the legislation.

Major Questions to Be Answered

My staff and the staff at the Council on Wage and Price Stability (CWPS) are currently examining this question, partly independently and partly in cooperation with the NHTSA staff. Neither we nor NHTSA have yet reached any conclusions concerning this question. However, I think it would be useful to discuss with the Subcommittee the kinds of considerations that should be included in the choice among alternative standards.

Though fuel economy is a very important goal -- and the events surrounding Iran in the past few months have certainly reemphasized this -- costs must nevertheless be taken into account in determining how far we push fuel conservation in any particular sector of the economy. Section 502(e) of the EPCA recognizes this when it states that "in determining maximum feasible average fuel economy the Secretary shall consider (1) technological feasibility; (2) economic practicability; (3) the effect of other Federal motor vehicle standards on fuel economy; and (4) the need of the nation to conserve energy." In this area, as in all others, our nation's resources are not limitless and the use of domestic resources in efforts to save on imported oil means that these resources cannot be used elsewhere. Thus, at some point we must decide that we have devoted enough resources to conserving on imported oil and that the devotion of yet more resources would be a waste -- these resources could be better utilized elsewhere.

In analyzing the choice between alternative schedules for achieving the 1985 goals of the Act we have to proceed in two steps:

Step 1. We must determine whether the increased costs of automobile production, arising from the current schedule compared to a more gradual one, are greater or less than the cost of the gasoline which is saved by such a schedule. If the added production costs are less than the value of the gasoline saved, then the accelerated schedule produces a net gain for the nation -- its benefits are greater than its costs. To answer this question we need to estimate a number of factors: the added automobile production costs of the current schedule compared to a more gradual schedule; the difference in total gasoline consumption between the two schedules; the price of gasoline between now and the early 1990s assuming, as we must, that the additional gasoline leads to additional oil imports; and the proper discount rate to use so we can compare the value of gasoline savings in distant future years with costs incurred in the next several years.

Step 2. The direct benefit to the nation from reducing oil imports by one barrel is measured by the price we pay for that barrel. Step 1, above, already takes this direct benefit into account, since the price of gasoline used in the calculation is based on the use of imported oil. But

there are other indirect benefits from reducing oil imports, relating to national security, balance of payments considerations, and the reduced pressure of demand on the world oil market. Consequently, even if the additional automobile production costs stemming from an accelerated schedule are greater than the direct value of the gasoline saved, as calculated in Step 1, it might still be worthwhile to stick with that accelerated schedule. We can calculate the amount by which the added production costs exceed the value of gasoline saved, translate that into an amount per barrel of reduced oil imports, and ask whether the indirect gains are worth the premiums we are paying to reduce oil imports. To take a hypothetical example, if the excess costs of an accelerated schedule amount to $3.00 per barrel of imported oil that is thereby saved, we might well decide that the indirect gains are worth it. If, on the other hand, the excess costs translate into a premium of $20 per barrel saved, we would probably decide that the gains were not worth the cost.

Specific Considerations

Let me turn to the particular considerations which should enter into this two-step cost-effectiveness analysis.

1. Estimates must be made of the present and future price of gasoline. Since the direct benefits of more stringent fuel economy standards (or alternatively, the costs of moving

to less stringent standards) are the value of the fuel saved, it is important to try to estimate these prices properly. And it is worth remembering that most of the cars built in 1981-1984 will still be on the road in the early 1990s. Thus, both a good fix on the current price and a good estimate of the likely future time pattern of gasoline prices (relative to the general movement of prices) is important. The higher the base year price for gasoline and the faster the expected future rate of price increase, the more worthwhile is an accelerated schedule.

It is also important to remember that the direct benefits considered here are benefits to the nation, which are not accurately measured by prices paid by consumers for gasoline. The relevant "price" for the calculation is a before-tax price. The reduction in tax revenues that occurs when cars are driven the same number of miles on fewer gallons of gas does not represent a gain to the nation. The relevant price should also be based on the assumption that imported oil is used to produce the gasoline. So long as domestic crude oil prices are held below world prices, the average price for oil paid by refiners does not reflect the true cost to the nation of conserving more gasoline, since the added gasoline consumption will be reflected barrel for barrel in additional oil imports. The relevant price, therefore, is a before-tax price, calculated on the assumption that the gasoline is produced from imported oil.

Since, of course, we do not know what will happen to the price of imported oil over the next 10 to 15 years, it makes sense to see how sensitive the calculations of net benefits are to several different assumptions about the future course of oil prices. It is the general, although not unanimous, view that the real price of oil may rise during the 1980s. Hence an analysis which showed that a shift to a more gradual schedule produced net benefits only if oil prices stayed unchanged would raise serious questions about the wisdom of the shift. An analysis that showed net benefits for the shift, even with a significant rise in world oil prices, would give a much clearer signal for public policy.

2. One needs to make estimates of the technologies likely to be used to meet alternative fuel economy schedules, their costs, and their time patterns. If a more gradual schedule provided the time to allow lower cost technologies to substitute for higher cost technologies, these constitute the benefits of the more gradual schedule (or, alternatively, the costs of the more accelerated schedule).

NHTSA is making its analysis on the relatively stringent assumptions that the standards will be met solely by changes in technology and engineering rather than by changes in fleet mix. The automobile companies could conceivably meet the standards by selling only small cars like Pintos, Omnis, or Chevettes. They are not planning to do this, but instead are

planning to maintain a mix of cars of various sizes and performance capabilities. In fact, the mix may be shifted more toward smaller cars than the automobile market would otherwise choose. This would reduce the technological and engineering costs of achieving the standards, but would, in turn, impose costs of another kind, more difficult to measure, but real nevertheless. To the extent that a mix shift does occur, consumers will be buying products with different characteristics than they would otherwise choose. The decrease in consumer satisfaction, though much harder to measure and value, is just as real a cost to society as the wasteful use of resources.

This kind of dissatisfaction could further express itself in the following ways. Suppose consumers decide not to buy the newer, smaller cars and instead retain their older cars longer. The older cars are less fuel efficient than the newer ones, so there would be less fuel savings during that model year than would otherwise be expected; conceivably the net effect on fuel saving could be negative compared to a less stringent standard that did not induce this longer retention of older cars. A substantial reduction in new car sales would have obvious short- and medium-run economic adjustment consequences for the

automobile industry, its labor force, and the industries dependent on it. Suppose, alternatively, that dissatisfied consumers instead decide to buy pickup trucks and small vans which may offer some of the size and performance characteristics of larger cars. But these trucks have lower fuel economy standards than passenger automobiles, so again the fuel savings will not be as great as expected and again the savings from a stringent standard could conceivably be negative under some circumstances.

3. One needs an estimate of the proper discount rate to use, since the calculation involves future costs and future benefits. The added costs of the current schedule relative to a mere gradual schedule will be incurred during the early 1980s. The benefits in lower fuel consumption will stretch into the 1990s. The stream of benefits must be discounted back to the time when the costs occur, since future dollars -- even with zero inflation -- are worth less than present dollars. The nation ought not to be investing current resources for future gains which yield a zero interest rate or return. A higher discount rate will favor less stringent standards, since a higher rate causes the future benefits from the more stringent standards to be discounted more heavily.

The appropriate discount rate to use for purposes of public policy choices is a subject about which there is little

consensus. In general, the Federal Government uses a 10 percent discount rate to evaluate the costs and benefits of programs which require private investment to produce national benefits.

4. All of the above considerations enter into an analysis of the direct benefits (reduced fuel consumption) and costs (higher manufacturing costs) of an accelerated schedule versus a straight-line schedule. This is Step 1 of the analysis.

In addition, as I mentioned above, there are indirect benefits from reducing oil imports. Even if the added costs of an accelerated schedule are greater than the direct benefits, therefore, it might still make good sense, up to a point, to stick with that schedule. We can calculate the "excess" cost of an accelerated schedule, translate that into dollars per barrel of imported oil savings, and ask whether the indirect gains are worth it.

Some of the indirect benefits can at least be explained in quantitative terms. To the extent that lower U.S. demand for imported oil puts downward pressure on the world oil market, and reduces world oil prices, there is a gain to the nation. For example, if a 100,000 barrel a day reduction in U.S. demand should lower world prices by as little as $0.05 per barrel, this would mean a saving of $180 million a year in the nation's oil import bill (assuming 10 million barrels a day imports). It would be worth paying an extra

cost of up to $180 million to achieve this saving -- an amount equal to about $1.65 a barrel on the 100,000 barrels a day import reduction. While our ability to relate world oil demand to world oil price changes is extremely limited, we do know there is a connection, and we can at least use calculations like those above to get some sense of whether the premium is worth paying or not.

Lower oil imports would also reduce the U.S. balance of payments deficit, and this in turn should strengthen the value of the U.S. dollar in international transactions. At $15 a barrel, a reduction of 100,000 barrels a day in oil imports would lower the balance of payments deficit by over $500 million a year. Such a reduction is unlikely to change the value of the dollar significantly, but even an increase of one-tenth of 1 percent in the dollar's exchange value would lower the cost of our total import bill for goods and services by some $200 million annually.

There are several other kinds of economic benefits that would flow from a reduction in our dependence on oil imports. In particular, reduced dependence on imports would lessen the potential economic disruption from politically inspired oil embargoes and from sudden price increases. And finally, there are the intangible, but nevertheless very real national security benefits that reduced dependence would bring about.

The magnitude of these various indirect benefits from a reduction in oil imports cannot in the final analysis be measured. They are important, but there is some point beyond which they are not worth the costs of achieving them. Calculating the "excess" costs of an accelerated schedule -- if any -- and expressing them in terms of a premium per barrel of reduced oil imports at least gives us some sense of the magnitude of what we would be paying for import reductions, and should help us make a reasoned judgment in the choice of schedules.

The elements thus far outlined are the standard components of a cost-effectiveness or cost-benefit calculation. There are, of course, uncertainties involved in all of these elements, and ideally one would want to calculate a "best guess" or "most likely" case and also undertake some analysis to investigate the sensitivity of the results to changes in the assumptions.

There are several added features to the analysis that are specific to the fuel economy question.

First, recent Department of Energy (DOE) studies indicate that there is a shortfall between the Environmental Protection Agency (EPA) certification test fuel economy results and actual in-use fuel economy. This shortfall appears to be worse on a percentage basis for more fuel efficient cars than for less fuel efficient cars. The immediate implication is that

if this trend is not reversed, cars in the 1980s that apparently meet the standards could consume more fuel than would be implied by the standards. This also implies that the difference in fuel consumption between more or less stringent fuel economy standards might be somewhat greater than just an examination of the alternative standards would imply.

Second, there may be special technological and financial problems for some of the individual companies in the automobile industry. Though the automobile companies are among the largest in the country -- General Motors, Ford, and Chrysler were ranked first, third, and tenth respectively in the 1977 Fortune list of the largest industrials, and even American Motors, which is considered a small company by automobile industry standards, was nevertheless the 110th largest industrial company in the country -- these firms have been the focus of extensive regulation in the areas of environment, safety, and fuel economy. Government regulations, necessary to achieve society's goals in these areas, have made major demands on their financial and technical resources. It is generally agreed that the fuel economy standards of the 1980s will place a significant burden on these companies. Any special problems for particular companies will be at least partly a function of the choices that their managements make with respect to product, technology, and marketing strategies.

For example, a strategy that simply stresses a greater reliance on small cars will entail more marketing risks but require less capital and engineering than a strategy focused on technological change. And decisions on whether to produce new products or components in-house or to contract out for them will obviously affect the capital and engineering requirements of a company.

There may be individual problems for individual companies. And more stringent standards may make them worse. The extent to which regulations affect survival and competition in an industry has long been one of the elements that regulators have considered in evaluating the social tradeoffs inherent in any regulation.

These then are the important considerations in the evaluation of alternative fuel economy standards. Again, my staff and the CWPS staff are actively investigating and evaluating the fuel economy standards along these lines.

Attached are my answers to the specific written questions from the Committee.

Answers to Specific Written Questions from the Committee

Q 1. Did you or any Member of the CEA review the DOT report prior to its public release? If so, please indicate when this review was made and provide to us a copy of any CEA comments. If the answer is no, please explain why not.

A 1. Yes. Early drafts of the DOT report were reviewed by a CEA staff member in early and mid-January. Oral comments were conveyed to NHTSA personnel.

Q 2(a). To what extent has the CEA, RARG, or Mr. Kahn's agency reviewed the DOT standards for 1981-1984 and the truck standards for their inflationary impact, if any? When were they reviewed? What was the result of that review?

A 2(a). The Council on Wage and Price Stability made filings during the public comment period on both the 1981-1984 passenger automobile fuel economy standards (on January 3, 1977) and the 1980-1981 truck fuel economy standards (on January 30, 1979). CWPS also participated in the interagency review of the 1981-1984 auto standards and delivered its comments on June 17, 1978. It is difficult to tell what results these actions had. Perhaps NHTSA can better answer this. Also, as Mr. Schultze has indicated, the CEA and CWPS staffs are currently reviewing the 1981-1984 standards.

Q 2(b). To what extent have these agencies reviewed the Environmental Protection Agency's proposed diesel standards? What is the economic impact of those regulations?

A 2(b). Both the CEA and CWPS staffs have been reviewing the proposed EPA emission standards for diesel particulates. It is likely that CWPS will make a filing during the public comment period. The economic impact is still being studied.

Q 3. Three assumptions are listed on page 80 of the DOT report to determine the present value of the cost of gasoline saved from increasing vehicle miles per gallon.

(a). Do you agree with these assumptions? Please explain.

A 3(a). The major assumptions are 10 years/100,000 miles for the lifetime of a car and 14 years/140,000 miles for trucks, a 10 percent discount rate, and 65¢/gallon for gasoline. One could quibble somewhat with two of these assumptions. The NHTSA assumptions underestimate slightly the average life and mileage of the vehicles. And 65¢ is best thought of as a pretax price for gasoline (see Mr. Schultze's testimony). Overall, these are not unreasonable assumptions.

(b). The third assumption is that the price of gasoline was fixed at 65¢ per gallon. But this assumption includes the tax per gallon. As gasoline consumption decreases, the available tax revenues for roads and bridges decrease while road and bridge costs, including repairs, increase. Should these losses be considered as a cost to the consumer?

A 3(b). To the extent that gasoline tax revenues fall because motorists can travel the same number of miles on fewer gallons of gas, this poses a problem of financing for the road system. Extra taxes might have to be raised from some source. But this does not impose a real resource cost to the nation. It is a problem of transfers, not of real costs. And if the extra taxes are levied on gasoline itself, motorists will come out even on a taxes-per-mile-traveled basis. (The only problem or burden is a transitional one, since owners of older cars will also have to pay the higher gasoline taxes but will not be benefitting from the lower costs per mile traveled.) This is not to suggest that there may not be a financing problem. But this financing problem should not affect the judgment on the real costs and benefits of alternative fuel economy standards.

Q 4. The DOT forecasts a much more rapid rate of introduction of newly designed major engine and drivetrain components than the historical pattern. What would be the economic effect on the industry and individual companies of such a change in the historical pattern? Do you believe that the costs mentioned in the report for components are reasonable?

A 4. These economic changes and costs are indeed an important part of the fuel economy question. These and other economic effects are under examination by CEA and CWPS staffs, as are the costs. We have not yet reached any conclusion.

Q 5. On page 89 of the report, DOT states that during the period of change, "there will be an opportunity to modernize and upgrade plants and facilities now approaching obsolescence." Should the report consider the extent such modernization and upgrading will result in the scrapping of plants and facilities prior to the end of their useful life, the estimated dollar value of the economic loss inherent in premature scrapping, the effect of such scrapping on employment in a State or region, and the extent to which such modernization and upgrading will result in relocation of facilities from historical manufacturing sites to other regions above that which would have occurred in the absence of such modernization and upgrading?

A 5. Since the costs of currently-in-place current plant and equipment have already been incurred and are sunk, a proper social calculation should only include prospective costs and expenditures. Regional distribution questions are, of course, interesting and worth examining. It is worth noting that to the extent that upgrading of current facilities occurs, this will improve the competitiveness of those facilities and reduce the likelihood of shifts in location to new regions.