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Karl Simon/DC/USEPA/US

To wood-thomasibiyan, anchowsky-kerel

09/04/2007 08:41 AM

CC Robert Doyle, dicking and divid, to rewite michael

pcc

Subject Waiver briefing for Bob

Bryan/Karen:

please bring a copy to today's staff meeting as Margo will likely want to know where this one is now (we talked about some changes). She can focus on page 3, 19 (checking some facts on that one with Mike Shelby and John Koupal so might change a word or two) and the last two pages. thanks

BobMyersBriefSept4V5.ppt

Office of Transportation and Air Quality

GHG Waiver Update – Briefing for OAR Principal Deputy

Administrator September 4, 2007







Comments on Waiver Criteria & Additional Questions; Next Steps

- Introductory Remarks
- Protectiveness
- Compelling and Extraordinary Conditions
- Consistency with Section 202
- Options



Introductory Remarks

Staff Assessment – From legal, technical and policy perspectives (and waiver
precedence), the strongest argument is that CA has made the requisite protectiveness
determination and those opposing the waiver have not clearly demonstrated that any of
the section 209(b) criteria have been met.

Burden of Proof/Deference

- CAA starts with the presumption that CA receives a waiver if it makes the protectiveness
 finding. Burden of proof is on parties opposing a waiver, not on CA or EPA. EPA does not
 need to make an affirmative finding on (1) (3) to grant waiver; EPA must grant a waiver
 unless it makes one of the specified negative findings. MEMA
- Traditional view is CAA provides CA the broadest possible discretion in developing its program and in policy choices (legislative history and case law support this)
- Relevance to EPA's waiver evaluation of 3 additional FR Notice questions (global climate change, Massachusetts v. EPA decision, EPCA)
 - For: GHG a pollutant like all others, treat the same way in waiver context, EPCA irrelevant
 - Against: GHG is a unique pollutant, deference should not be given as CA not intended to be pioneer, CA rule does not take EPCA factors into consideration but EPCA preemption alone not basis to deny CAA waiver



Protectiveness - CAA language and Key Issues

• Whether <u>California's determination</u> that its "<u>standards</u> will be, <u>in the aggregate</u>, <u>at least as protective</u> of public health and welfare as <u>applicable federal standards</u> is <u>arbitrary</u> and capricious."



"California's Determination"

Timing

- Can determination be made before federal standards exist?
- Should CARB's determination be evaluated from the time of its rulemaking or be based on any new information (NERA/Sierra Report)?

Comments

For Determination is simple since no comparable federal standards (EPA has previously issued waivers in such circumstances and reflects California as the laboratory, pioneer); evaluation should only be on addition of GHG since EPA already waived LEV II and ZEV; determination reasonable at time of rulemaking - also reasonable based on review of new NERA/Sierra Report.

Against Determination based on new information and requires analysis of entire CARB program; until federal process plays out impossible for EPA to evaluate how CARB's standards will compare, federal process will take into consideration CAFÉ/EPCA.

Office of Transportation and Air Quality



"At Least as Protective"

- Numerical vs Lifetime In-use Effects
- 209(b)(2) "If each [California] standard is as least as stringent as the comparable applicable Federal standard, such State standard shall be deemed to be at least as protective of health and welfare as such Federal standards for purposes of paragraph (1)."
- Comments

For Would be first time EPA looked at lifetime effects in the context of a waiver review; EPA already waived LEV II and ZEV so should only examine GHG incrementally

Against Inappropriate to rely upon 209(b)(2) for how to define protectiveness as 209(b)(1) requires an analysis of "net emissions" or effects associated with the standards



"Arbitrary and Capricious"

- Burden of Proof CARB must make initial protectiveness determination and submit to EPA
- Standard of Review Challengers to the waiver must meet the burden of proof with clear and convincing evidence (MEMA I and Legislative history)
- Comments

For "The language of the statute and its statutory history indicated that California's regulations, and California's determination that they comply with the statute, when presented to the Administrator are presumed to satisfy the waiver requirements and that the burden of proving otherwise in on whoever attacks them." (MEMA); Alliance is attempting to remake the legal burden of proof standard into a burden on California to provide something more than it provided in its request (including an analysis of in-use effects, not required to look at a new report based on old information); CARB made a full determination and submitted it in the waiver request and CARB's update (even if necessary) shows that the vehicle program remains more protective

Against California has not carried its initial burden of proof of making a well-informed determination that the GHG regulations will "do no harm" – CARB did not compare the two programs at the time of its rulemaking and CA offered only a conclusory statement that questioned how anyone could challenge the fact that no federal standards exist; CARB nowhere demonstrates that it made a direct and complete comparison of the federal and

California programs



NERA/Sierra Research Report 2007 - Overview

- NERA (an economic consulting company) and Sierra Research (a vehicle technology research company) analyzed the impacts of CARB's GHG standards for the Alliance of Automobile Manufacturers
- NERA/Sierra's assessment concluded the CARB GHG tailpipe standards, in combination with the ZEV Standards, are not as "protective" as Federal regulations
- CARB asserts that appropriate analysis and consequent determination is based on review of "incremental" difference from GHG standards to then existing CA program (which has its own prior protectiveness determination)
- This finding was based on increased criteria air pollution emissions from three different effects:
 - Fleet Turnover
 - Rebound Effect
 - Upstream Emissions



NERA: Fleet Turnover

- NERA argues that California GHG tailpipe standards will cause delayed fleet turnover and, thus, increase criteria air pollution
- NERA's Logic
 - GHG Rule causes price increases for new vehicles, which results in a decline in new vehicles sales
 - As the prices of new vehicles increase, the prices of existing vehicles increase as well
 - Decision to scrap an existing vehicle depends upon trade-off between value of existing vehicle in its working condition and its scrappage value
 - Rising prices of existing vehicles leads to decisions by some consumers to delayed scrappage of vehicles
 - Older vehicle stock (i.e., fewer new vehicles/more existing vehicles) on the road results in criteria air pollution increase
- Delayed fleet turnover single largest factor (accounts for ~3/4's)
 of criteria air pollution increases in NERA/Sierra Research study



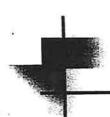
NERA: Fleet Turnover

- NERA/Sierra Research Results
 - In 2020, new vehicle sales will be 176,000 lower from California GHG/ZEV rule
 - Cumulative number of vehicles in the California fleet with model years before the regulations take effect (i.e., pre-2009 model year) will be 1 million greater in 2020 from California GHG/ZEV Rule
 - As the average age of the California vehicle fleet increases,
 criteria air pollution increases



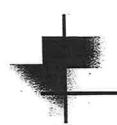
CARB Response: Fleet Turnover

- CARB: NERA/Sierra Research sales/delayed scrappage estimates are too high
- Why?
 - NERA/Sierra Research vehicle cost estimates too high
 - Sierra Research: \$3000-\$4000 per vehicle (California GHG/ZEV Rule)
 - CARB: \$1000-\$1300 per vehicle (GHG Rule)
 - NERA doesn't accurately account for "fuel economy benefits" of new vehicles
 - With GHG Rule, fuel economy improvements are "synchronized" with higher priced new car purchases
- CARB Conclusion: Combined sales/scrappage impacts likely to be close to zero since fuel economy improvements lower fuel costs roughly in line with increase in monthly payments from higher priced new vehicles
- CARB asserts that EPA in ZEV waiver validated the reasonableness of the CARB ZEV cost projections (at least through 2011, end year of waiver)



CARB Response: Fleet Turnover

- In addition, CARB used a consumer choice vehicle model for California, CARBITS, to estimate CA vehicle sales impacts from its GHG Tailpipe Rule
- CARBITS estimates increases in vehicle sales in CA in the near-term (result: accelerated fleet turnover) but declines in CA vehicles sales in long-term (lost vehicle sales of 61,000 in 2020; vs.176,000 NERA)
- By 2020, CARBITS estimates that lost vehicle sales leads to delayed fleet turnover
- Increase in criteria air pollutants in out years from delayed fleet turnover (i.e., 2020) is 2.5 tons/day; less than full fuel life cycle benefits of the Rule



Rebound Effect

- **Definition:** The rebound effect for vehicle fuel economy is defined as the increase in vehicle travel resulting from a decrease in the fuel cost per vehicle miles as a consequence of an increase in fuel economy
- Theory: Increasing fuel efficiency lowers the effective cost of driving to the consumer, which results in an increase in vehicle usage (holding all other factors constant)
- Example: If the rebound effect is, say, 10%, a 5% reduction in fuel costs per mile will result in a 0.5% increase in the number of miles driven



Rebound Effect: CARB's Approach

- CARB used two types of analysis to evaluate the impact of the proposed regulations on rebound effect
 - Economic modeling (UC Irvine study)
 - Travel demand modeling (Southern California Association of Governor's (SCAG))
- The UC Irvine study (by Small & Van Dender) is different from previous econometric studies in that it allowed the rebound effect to vary based on changes in income and congestion
 - Changes in income important since Small and Vender assumed CA real income grows at 1.6 percent per year based on historical data
 - Small and Van Dender estimate rebound effect of 3.08% in 2020*.
 - The final report appears to adjust this number to 4.04%.
- The travel demand modeling indicate a similar elasticity of VMT to fuel cost of about 4% in 2020

* ISOR



NERA: Rebound Effect

- NERA developed their own study to calculate a California rebound effect of 17% based on California vehicle inspection data from 1998 -2003
- NERA re-estimated the CARB-sponsored study on the rebound effect by Small & Van Dender; NERA found the long-run rebound effect in California to be 13%
 - The major difference between the NERA and the Small and Van Dender study was the way nominal income was converted to real income
 - NERA tried to approximate state cost of living adjustments, but had to modify metropolitan cost of living adjustments; Small and Van Dender used the national consumer price index
 - Based on the difference in the income calculation, NERA found that income was no longer statistically significant in explaining changes in the rebound effect. Therefore, they removed this term from the model.



Upstream Emissions Impacts

- Large differences between ARB and NERA/Sierra estimates:
 - ARB: upstream emissions reductions outweigh emission increase from rebound etc.
 - NERA: there are small upstream emission reductions, not large enough to offset rebound etc.
- Though NERA cites "significant flaws" in the ARB estimates, NERA's estimates largely undocumented
- ARB estimates may be conservative
 - only accounted for reductions in the transportation and distribution of fuel
- GREET national numbers more in line with ARB

| In 2020 | ARB Tons/Day Reduction | NERA Tons/Day Reduction |
|----------------|------------------------------|-------------------------------|
| NMOG+ NOx - | 6.0 | 1.1-1.5 |
| PM10 | 0.8 | 0.0016- 0.005 |



CARB Estimate of Change in Criteria Air Pollution with GHG Rule in 2020

Criteria Pollutant in Tons Per Day

| ¥ | ROG | <u>NOx</u> | PM 10 |
|------------------------------------|--------|------------|----------|
| | | 540 5 | ORIZ ASS |
| Baseline Emissions | 231 | . 187 | |
| Combined Impact, Method 2 | | | ONLY TO |
| Fleet Turnover and Rebound Changes | 1.61 | 1.17 | 0.2 |
| (One EMFAC run) | | | GRESS F |
| Fuel Cycle Changes | -4.6 | -1.4 | -038 |
| Combined Impact (using EMFAC run) | -3.0 | -0.2 | -0.36 |
| Percent change (using EMFAC run) | -1.30% | -0.12% | -1.40多 |

Source: CARB, Initial Statement of Reason, Table 12.4-1, p. 37

Summary Table

| Re- | | A Section Constitution Control of the | D _i |
|-----------------------|--|---|---|
| | CARB | NERA | NHTSA CAFE Rule |
| Fleet Turnover | \$1000-\$1300 cost per vehicle accelerated fleet turnover in nearterm; small delayed fleet turnover in out years (i.e., 2020) | \$3000-\$4000 cost per vehicle delayed fleet turnover in near term; large delayed fleet turnover in out years (i.e., 2020) | THORIZED ONLY TO CONGRESS FOR O |
| Rebound | 3% in 2020 | 17% (2003) 13% (2007) | 20% (2006) 15% (2007 proposed) |
| Upstream Emissions | 6 tons/day reduction in ROG+NOx | 1.1-1.5 tons/day reduction in ROG+NOx of Transportation and Air Quality | NHTSA: upstream amissions outweigh downstream emissions |



NERA/Sierra Report-Summary of Impressions

- Costs estimates are not clear GHG v ZEV technology costs are commingled, inclusion of ZEV after 2011 is inappropriate, high technology costs are not supported and do not demonstrate that CARB costs estimates are unreasonable
- Fleet Turnover CARB makes reasonable estimates based on synchronized price increases and vehicle fuel economy/performance improvements; NERA/Sierra costs estimate issues
- Rebound CARB estimates are very reasonable and well within range of uncertainty
- Upstream/Net Benefits CARB estimates are reasonable/conservative;
 NERA/Sierra estimates do not clearly demonstrate arbitrariness of CARB's calculations



Compelling and Extraordinary Conditions - CAA Language and Key Issues

Section 209(b)(1)(B) ...whether "such State [California] does not need such State standards [California] to meet compelling and extraordinary conditions."

Against

- Need = whether CA could benefit from its own standards (GHG not localized pollutant)
- Meet = whether CA's GHG standards will redress/mitigate climate change effects on compelling conditions
- Extraordinary = whether CA's conditions are occurring and are sufficiently unique from other states



Need

For

- Relevant inquiry is whether CA needs its own emission control program, not whether any given std is necessary. Need does not refer to levels of pollution directly but to the factors/conditions that tend to produce them; EPA's past practice
- Congressional history and EPA practice is to afford CA broad discretion on need
- Minimizing ozone problems fills the expanded definition provided by the Alliance

Against

- "Need" and "Meet" should be distinguished:
 - need = whether CA could benefit (e.g. are necessary) from its own stds
 - meet = whether the stds help mitigate the conditions
- When CA has an especially severe local air quality program (ozone) then a case for separate stds can be made, focuses on "such State standards" to suggest a standard by standard analysis rather than need for whole emission program
- The preemption in 209(a) is broad and implies "field preemption," and only exception is where CA has unique conditions and this cannot be met with a global problem that does not affect CA in a qualitatively or sufficiently quantitatively unique way. Minimal direction on GHG impact does not amount to a "need."



Meet - 1

For

- By industry arguing the "meet" issue they are conceding that CA "needs" a program
- Alliance's argument re field preemption in 209(a) fails due to 1. In environmental
 matters preemption provisions are to be narrowly construed, and 2. It reads out the
 historically recognized role of CA as a pioneer and laboratory.
- Alliance suggestion of a test of redressability is answered by: "A reduction in domestic emissions would slow the pace of global emissions increases," and the risk of catastrophic harm "would be reduced to some extent...." Mass v. EPA
- Ozone and Science
 - Dr. Schneider and Dr. Kleeman testified that global warming is projected to increase the number of days conducive to ozone formation in South Coast and San Joaquin Valley
 - Relatively small reduction in CO2 emissions is scientifically important because of the nonlinear nature of the climate system
 - The IPCC 2007 4th Assessment Report, Dr. Schneider, Hansen, and others state the GHG emissions are on trajectory that would likely increase temperatures by at least 2 degrees Celsius



Meet - 2

Against

- CA has not and can't show that GHG stds will provide any discernable benefit to meet CARB's identified downstream C and E conditions or impact climate change overall
- Alliance has provided extensive evidence that CA does not dispute re the GHG standards adopted even nationally or worldwide would not have measurable effect on temperature
- CARB's response that any action by the State in the name of climate change should be afforded policy deference is misplaced; CARB is not acting in context of expansive state police power and is not free to take tiny steps that may do nothing to alleviate climate change

Others

- The sole relevant criterion regarding the "effectiveness" of the GHG stds is whether the protectiveness criteria is met. CA need only show a rational connection between its regulatory action and the problem being addressed
- EPA is not to micromanage each CA standard and pollutant



Extraordinary Conditions - 1

For

- No indication in the language of section 209 or legislative history that suggests that CA's pollution problem must be worst in the country (citing 1984 PM waiver)
- In the alternative, strong evidence of extraordinary conditions re coastal resources, Bay-Delta saltwater intrusion, agricultural impacts, levee collapse and flooding, wildfires, snow packs and melts
- Serious ozone levels will be exacerbated ozone long recognized as a C and E condition



Extraordinary Conditions - 2

Against

- "Extraordinary" embodies a concept of uniqueness
 - Global warming to not a C and E condition specific to CA
 - "unique" effectuates the underlying purpose of the waiver provision which was to provide CA leeway to address the issue of localized urban air pollution
- EPA's 1984 waiver re PM even acknowledges "unique to CA" requirement
- CA's "laundry list" of potential impacts is the same as many or most states
 - Impacts must be qualitatively or quantitatively extreme



Consistency with 202(a)

Section 209(b)(1)(C) -

The Administrator shall ... (grant the waiver unless he finds)... "such State standards and accompanying enforcement procedures are not consistent with section 202(a) of (the Act)."

EPA has stated that California's standards and accompanying test procedures are inconsistent with section 202 of the Act if:

- 1) there is inadequate lead time to permit the development of technology to meet those requirements, giving appropriate consideration to the cost of compliance within that time frame; and
- 2) the Federal and California test procedures impose inconsistent certification certification requirements so as to make manufacturers unable to meet both sets of requirements with the same vehicle. (NOTE -- This is not an issue in this Waiver)

How EPA Looks at Technological Feasibility

- EPA, in making consistency determinations under 209(b), is guided by Federal Court decisions applying the sec. 202(a) lead time requirements for Federal standards.
- NRDC v. EPA (DC CIR. 1981), Court upheld vehicle PM stds issued in 1980 and effective for 1985 MY. Court established the test as follows:
 - EPA will have demonstrated the reasonableness of its basis for prediction (that stds are technological feasible) if it:
 - answers any theoretical objections to the [projected control technology],
 - · Identifies the major steps necessary in refinement of the [technology], and
 - Offers plausible reasons for believing that each of those steps can be completed in the time available.



How EPA Looks at Cost & Lead Time

Cost:

- In MEMA I, Court noted that "Congress wanted to avoid 1) undue economic disruption in the auto manufacturing industry, and 2) doubling or tripling the costs of vehicles to purchasers." This means costs of compliance must be a very high level, and excessive before EPA would find CARB standards to be inconsistent with section 202(a).
- · Lead Time

NRDC makes clear that Congress intended EPA to project future advances in pollution control technology rather than be limited to existing at time standards were set – a longer lead time gives greater scope for theoretical solutions and time to commit to mass production of a chosen prototype

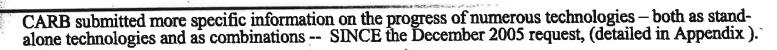
International Harvester sets requirement for further demonstration of necessary technology when lead time is shorter [CARB has identified near term technologies and has identified projected control technologies]



CARB's Technological Feasibility Determination

- Four Areas of GHG Reduction Technologies
 - 1) Engine, Drivetrain and other vehicle modifications
 - 2) Car Air Conditioning System modifications
 - 3) Alternative Fuel Vehicles
 - 4) Exhaust Catalyst Improvement
 - Technology packages are "off the shelf" and in many current vehicles.
 - Record shows that Mfgs will be able to apply these technology packages/combinations for the deadlines following MYs 2012 and 2016, which are lead times of eight and 11 years respectively (CARB bases beginning of Lead Time as 2004, when GHG standards adopted)

Technological Feasibility Information from Comment Period



- CARB submitted cost information showing reductions in expected costs through innovative design in recent and current examples of technological development. (detailed in Appendix).
- Industry commented that even if EPCA preemption fails, and EPA waiver is granted, the CARB
 rulemaking record assertion of 4 year lead time for compliance with the standards is at odds with CARB
 statements in VT case) that some manufacturers could take up to 6 or 7 years to comply with the MY
 2011 standards and MY 2012 standards, respectively
- Industry also commented that CARB regulations will result in
 - More frequent powertrain redesigns, and lower economies f scale
 - Elimination or restricted availability of some models
 - Compromised vehicle performance



CARB Rebuttal of Industry (7/24/07) - Technological Feasibility Information

- Industry offered only minimal discussion refuting CARB evidence presented on state of technology and technology development.
- Near term Compliance Picture
 - CARB presented info from Vermont case (company officials' depositions) showing numerous mfgs admit that their current business plans will result in compliance in early years:
 - Honda can comply thru MY 2010 and possibly in 2011 w/ credits
 - Nissan can comply with LDT2/MDV std through 2011 and with PC/LDT1 with model mix shift
 - VWoA can comply for 2009, and for 2010 w/ incremental changes
 - Toyota can comply through 2011
 - GM conceded no compliance issues through 2010
 - DCC conceded no compliance issues through 2011



CARB Rebuttal of Industry (7/24/07) - Technological Feasibility Information – Cont'd

- Industry also misrepresented the Lead Time evidence:
 - S. Albu of CARB noted that most technologies are already developed and not require 6-7 years of lead time
- Because substantial lead time remains to continue refining these technologies, CARB clearly meets the NRDC lead time test



Alternative "Endangerment" Argument

Industry

- "Consistency with 202(a)" means ALL of 202(a) Until EPA makes its own endangerment finding that any substance warrants regulation under 202, EPA cannot find that regulation of the substance is consistent with 202 [AIAM uses "substance" rather than "air pollutant"]
- As part of EPA's follow up to Mass v EPA the Agency must still decide the appropriate regulatory standards and thus EPA can't compare consistency of CARB standards until EPA issues own GHG standards and takes into consideration technology, costs and lead time
- GHG is a new pollutant and is distinguishable from other CA regulations where EPA has at least made an endangerment finding on the pollutant (versus OBD)
- Methods of control/prospect for effectiveness in CA could not form basis for federal control under 202(a)

California

- Consideration of factors other than feasibility and lead time is not permissible
- That Mass v EPA includes subsequent activity at federal level is irrelevant to waiver and pace in CA. GHG emissions are air pollutants. EMA v EPA EPA had proposed to waive EPA nonroad standards before making finding re those engines' emissions
- EPA has granted waivers/authorizations BEFORE corresponding Federal activity (highway PM standards and nonroad CI and SI standards)
- This is consistent with intent of Congress that California be the pioneer/trailblazer for vehicle/engine emission standards
- EPA would need to find that GHG are NOT an endangerment in order to find inconsistency with 202(a)



Options Going Forward - page 1

- OTAQ and OGC are reviewing these options from a legal, technical, and waiver precedent perspective and other options may fall in or out of our review. Some of these options have defensibility issues and clearest option is to grant the waiver.
- Option 1. Grant Opponents of waiver have not met their burden; CARB enforces 2009 and later model years (MYs)
- 2 Partial Grant Options Delay Model Year Implementation
 - Option 2. Condition Waiver on Endangerment Finding; EPA determination that
 opponents of waiver have not met their burden, however "consistency with 202(a)"
 requires EPA endangerment finding for authority to exist; waiver enforceable after EPA
 final endangerment finding; CARB enforces 2010 and later MYs
 - Option 3. Condition Waiver on CARB providing adequate lead time; EPA determination that opponents of waiver have not met their burden, however "consistency with 202(a)" requires more certainty about 202(a) regulatory authority; Lead time does not run from CARB adoption but from Mass v EPA; CARB enforces 2012 and later MYs



Options Going Forward - page 2

• Option 4. Abeyance/Reopen Waiver at Later Date — "Consistency with 202(a)" requires EPA both make endangerment finding and issue final GHG rule for point-by-point comparison with CARB rule; EPA reopens waiver comment period after final federal rule; CARB not enforce presently