COMMONWEALTH OF PENNSYLVANIA
HOUSE OF REPRESENTATIVES
TRANSPORTATION COMMITTEE

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In re Public Hearing
Conversion to Alternative Fuels

Stenographic report of hearing taken in the Majority Caucus Room, Main Capitol, Harrisburg, Pennsylvania

Tuesday
July 18, 1989
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HON JOSEPH A PETRARCA, CHAIRMAN

MEMBERS OF TRANSPORTATION COMMITTEE

Hon Mario J Civera, Jr
Hon Peter J Daley, II
Hon Richard A Geist
Hon Victor John Lescovitz
Hon Edward J Lucyk
Hon Joseph F Markosek
Hon Dennis M O'Brien
Hon Joseph Preston, Jr
Hon Gregory M Snyder
Hon Joseph A Steighner
Hon Leona G Telek
Hon Thomas M Tigue
Hon John N Wozniak

Also Present

Sue Germanio
Sheryl Simpson, Committee Secretary
Paul Landis, Executive Director, Minority

Reported by
Dorothy M Malone, RPR

Dorothy M Malone
Registered Professional Reporter
135 S Landis Street
Hummelstown Pennsylvania 17036

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CHAIRMAN PETRARCA I'd like to call this meeting to order This meeting is the House Transportation Committee public hearing on conversion to natural and alternative fuels The first one to testify is the Honorable Mark Singel, Lieutenant Governor

LT GOVERNOR SINGEL Thank you, Mr Chairman I appreciate your introduction I appreciate your continued leadership in the field of alternative fuels And to all the other members of the House, thank you very much for interrupting your summer and dedicating some much needed attention to this important area I notice you have Mr Jan Freeman scheduled on your agenda With your permission, I will ask him to sit and join me He may chime in and answer some of the questions that you may have He does not have a prepared statement at this time So we will condense two presentations into one if it is all right with you, Mr Chairman

CHAIRMAN PETRARCA Go ahead

LT GOVERNOR SINGEL Mr Chairman and members of the Transportation Committee, I appreciate the opportunity to spend some time with you on the issue of alternative motor vehicle fuels, and particularly, compressed natural gas and natural gas applications The Pennsylvania Energy Office, which I Chair, has had a longstanding interest in this matter and we intend to be

very active and join you as heartily as possible in the development of alternative fuels

I think that you know the statistics with regard to the dependency on foreign oil, the growing appetite that Americans seem to have for oil and the fact that gasoline consumption was up over eight percent in 1987, and it looks as though we must seek alternatives so that we can guard ourselves against an over-dependency on foreign oil sources

Motor vehicles are also the principal cause of air pollution and the formation of ozone It is very clear that additional measures are needed to reduce ozone-causing emissions and if Americans are to have the air that is clean enough to meet health standards and clean enough to meet the ambitious goals that President Bush has put forth in his statement of June 12th, then it is clear that we have to take some dramatic action I should note that the President singled out the City of Philadelphia in his remarks as one of the areas needing to take strong action to cut ozone-causing emissions

There are a number of clean alternative fuels available, but the main focus has been correctly on the use of methanol and compressed natural gas There are programs that are beginning to form in various parts of the country

The Energy Office is examining the potential of a number of resources, but we are focusing some attention on the use of compressed natural gas. At the present time natural gas is in use in over 500,000 vehicles throughout the world, about 30,000 of them in the United States. We have enough natural gas to power these vehicles and to last for 100 years in Pennsylvania. There are some economic barriers that remain to the full deployment of compressed natural gas involving the establishment of refueling facilities and the modification of gasoline vehicles. Detroit has yet to get involved in the production of vehicles that are suited for the use of compressed natural gas, and until they do, it will be necessary for us to encourage retrofitting in present vehicles so that they can use CNG.

There are some encouraging developments however. There are between 14 and 16 refueling sites in Pennsylvania currently. A number of the gas companies have indicated an interest in establishing more convenient and more plentiful refueling sites. The technology now has been perfected to the point where retrofitting has become a cost-effective venture, and it is clear that compressed natural gas can very shortly become an integral part of our fuel mix.

There are several things that are happening

in Pennsylvania that I want to just relate to you very quickly. Two of the state's natural gas companies have already purchased buses with dedicated CNG engines for use in demonstration programs. Peoples Natural Gas Company and the Altoona Metro Transit Authority have received some funding from the Energy Office to demonstrate the operation of the CNG bus in the Altoona-Logan Valley service area during the latter part of this year. The Port Authority of Allegheny County will be using some federal funds to purchase five compressed natural gas buses that will be refueled at a station installed by the Equitable Gas Company.

And the PEO, as part of a $100,000 program initiated last year, is continuing its effort with Indiana University of Pennsylvania. They have completed or they will be completing the conversion of their entire vehicle fleet to compressed natural gas.

The point is that compressed natural gas is a technology that exists. It has been fully developed. It is here today for full commercialization. It is clean, it is safe, it is efficient and it should be deployed in Pennsylvania.

Toward that end, I recently announced a one million dollar alternative transportation fuel program which was developed by the Pennsylvania Energy Office.

This two-year program has three components to it. The first part, which is already underway, is the utilization of $200,000 to demonstrate the use of compressed natural gas in state vehicles. The Department of Transportation will convert between 100 and 125 vehicles to use compressed natural gas. It is our way of showing by example that this technology is here and can be used efficiently.

The second part of the program will utilize $400,000, 200,000 in each of the Philadelphia and Pittsburgh areas. It is our intention to convert a large fleet of vehicles in Philadelphia and a similar size fleet in Pittsburgh. So that by the end of the summer, we hope to have in operation in Pennsylvania over 500 vehicles that we have specifically converted to the use of compressed natural gas. It is our view that this can be the spark that generates private sector interest and allows us to achieve a critical mass of compressed natural gas vehicles which will then in turn stimulate the development of refueling centers and that in turn will stimulate the entire related industries. For example, it is going to be necessary to alter cars. That is going to be an industry that is going to develop in the next five years. Some bright young entrepreneur might figure out we should shape tanks in a more convenient way and a tank building industry for the storage of compressed natural gas in

vehicles may arise.

I am genuinely excited about the prospect and I feel very strongly that it is the way to go for the future. It has very clear environmental advantages and it has very clear economic development advantages and I think that the time has come to move forward.

I should mention a third component of our program, and that is a $400,000 piece for the demonstration of yet other alternative fuels. We want to make sure that Pennsylvania does not make the same mistake that the Federal Government has made. We want to make sure that our mix of energy sources is as broad as possible to ensure an ample, reasonably priced supply. Toward that end we will be experimenting with methanol, ethanol, hydrogen, fuel cell systems, advanced electric vehicle systems and the gamut of alternate fuels for vehicles. This kind of research and development effort really has put Pennsylvania and the Pennsylvania Energy Office at the forefront of alternative fuels development in the country and we intend to stay there.

I would suggest that this Committee deserves a great deal of credit for recognizing the potential and recognizing the timeliness of the start to conversion to compressed natural gas. I know that you, Representative Petrarca, have been at the forefront of this

for a number of years and it is gratifying to know that we will be able to continue to work closely together to make sure that we develop our indigenous Pennsylvania resources as much as possible.

I might mention also that we have had the opportunity to review the three pieces of legislation that you have before you and can offer you some comments on those legislations either here or in a more comprehensive form at a later date and I leave that to you, Mr. Chairman, as to how you would like us to proceed with that. With that I would conclude my remarks and thank you again for your leadership in this key area.

CHAIRMAN PETRARCA. Any remarks from the members? Any questions of the governor? Representative Daley.

BY REPRESENTATIVE DALEY:

Q Thank you, governor, for your presentation. I think it is very gratifying for those of us out not only in the coal fields of western Pennsylvania but the gas fields in western Pennsylvania to see things are being done in terms of developing that natural resource.

One question I have is the RFP you are putting together for the $400,000 for the consortium. Could you explain maybe basically how that is going to work and how are some of the other universities in western

Pennsylvania besides IUP going to participate possibly as a part of that consortium?

A First of all, with regard to IUP, I might say very clearly that they have demonstrated leadership in this entire area, alternative fuel. As you probably know, they already have 92 vehicles that have been converted to compressed natural gas. They utilized their own source of natural gas and their own refueling station and as a result have cut their automobile fuel expenditures to close to zero. It is a really impressive feat that combined with their efforts in co-generation at the Sam Jack co-generation facility has really made them a leader and I hold them out as an example to all the other universities in Pennsylvania as well. I suspect that Indiana University of Pennsylvania will continue that leadership and probably bid on the request for proposal. What we are attempting to do is make it general enough to allow the broadest possible participation. We want to extract from universities and from private developers any and all ideas that they have for the development and commercialization of alternative fuels. That is why we are not focusing in on one particular technology. We want to hear about new ways to extract methanol from coal for example. We want to hear about new ways to develop ethanol from grain products. We want to hear about what

is happening out there with regard to fuel cells and hydrogen combustion engines and what have you. Our intention is to attract the best minds in the state to help us in the development of the research and development on this issue.

REPRESENTATIVE DALEY. Thank you, Mr. Chairman. Thank you.

CHAIRMAN PETRARCA: Paul.

BY MR. LANDIS

Q Governor, I have a question. As you know, PennDOT's Construction Highway Program is driven on the gas tax. Is there a formula available or is it being developed by your Energy Council that would compare a pound of natural gas to a gallon of gasoline? Because a penny brings in roughly $50 million and unless we have some way to replace that loss of money, it is going to be devastating not only to PennDOT but to the municipalities that receive a share of the cash back.

A Well generally I can tell you that if in fact this technology develops as rapidly as we hope it can and if in fact people begin to convert to compressed natural gas, I am relatively sure that we will find a way to tax it. We don't want to inhibit the deployment of it, but you are right. We will not allow a significant depletion of our revenues and we will figure some way to

determine the equivalent.

However having said that, my own inclination would be to figure some kind of a way to offer an incentive to convert to compressed natural gas and perhaps that would mean some kind of a break on their equivalent gas tax. Jan Freeman has perhaps some additional information on that he might want to give you.

MR. FREEMAN: Let me just say that is a valid question and we have already been talking about that with PennDOT. There has been a task force put together to review not only the issue of conversions but also the revenue side of what may occur. The thought is at first because the limited number of vehicles we are talking about, the tax implications on the revenue side will not be great. But it is certainly clear that if the industry does take off, there is obviously a revenue shortfall needs to be addressed and I would agree with the Governor when he suggested there may in fact be a needed tax at some point depending on the time frame for the saturation of the vehicles.

LT. GOVERNOR SINGEL: We don't have that formula yet but we will work on it.

CHAIRMAN PETRARCA: Last night I thought Peoples Natural Gas had an answer, the equivalent for a gallon of gas. I forget exactly who it was. Can anybody

answer that?

DR. SEISLER: Using roughly one therm --

CHAIRMAN PETRARCA: Would you stand up please?

DR. SEISLER: The industry generally uses about one therm to an equivalent gallon of gasoline and there are some people that use 1.05, depending on the energy content. But the 130 octane coupled with BTU content usually works out, you go about as far on a therm of natural gas as you can on a gallon of gasoline.

LT. GOVERNOR SINGEL: So we will be taxing your therms whatever that means.

(Laughter.)

MR. SMITH. We sell gas at NCS typically and that is 1,000 cubic feet. That is equivalent to 10 gallons of gasoline.

LT. GOVERNOR SINGEL: So one therm would be 100 cubic feet.

CHAIRMAN PETRARCA: Sirs, would you identify yourselves?

MR. SMITH: I am Raymond Smith. I am Vice President of Marketing with the Peoples Gas Comapny in Pittsburgh.

LT. GOVERNOR SINGEL. There's your answer. One gallon equals approximately 100 cubic feet.

CHAIRMAN PETRARCA: Representative Markosek.

REPRESENTATIVE MARKOSEK: Thank you, Mr. Chairman.

BY REPRESENTATIVE MARKOSEK. (To Lt. Governor Singel)

Q Governor, Mr. Freeman, thank you very much for your interest in this subject. It is one I have become interested in. I had an opportunity to drive one of the vehicles for a while and had a very good experience with that.

A question more out of curiosity in talking about other alternative fuels. At one time in our past history there was a great deal of talk about electrical vehicles. What has been the experience with the DEO and what is the current status of that alternative need for transportation?

A There is some experimentation being done and that field has really blossomed so much so that the electric vehicles of 1995 are going to bear no resemblance at all to the electric vehicles of 1985. But again, perhaps Jan has some more specifics.

MR FREEMAN: Let me just say in terms of the true electric vehicles, that which operate on storage batteries, that is a possibility. Storage batteries are becoming more efficient, more economic to pursue. The other application is fuel cells. We are seeing a lot of

research around the world. And part of it we would like to attract maybe to Pennsylvania, some advanced research in fuel cells, fuel by hydrogen, the chemical reaction for this electricity to drive these cars. It is still in its infancy in terms of its development, but there are some applications in Italy and Canada where fuel cells have actually been applied to electric vehicles successfully and it is a question of developing it more, finding a technology and possibly attracting the transportation industry to Pennsylvania to put people to work to building electric cars in the state at some point.

BY REPRESENTATIVE MARKOSEK: (To Mr. Freeman)

Q Would you say at this point in time that natural gas powered vehicles are ahead of the other alternative sources?

A I think the technology right now is more mature and the technology is here and now and available. I think the challenge we put out, the $400,000, is try to get more of the research taking place and some of these advanced technologies which may hold greater promise in the 21st century.

REPRESENTATIVE MARKOSEK: Thank you.

LT. GOVERNOR SINGEL I might add also that one of the components that we are going to pursue is serving all of our universities to find out what is out

there and what research is being done on electric vehicles and fuel cells and hydrogen powered combustion engines and natural gas for that matter.

CHAIRMAN PETRARCA Representative Steighner.

REPRESENTATIVE STEIGHNER· Thank you, Mr. Chairman.

BY REPRESENTATIVE STEIGHNER. (To Mr. Freeman)

Q Governor, Mr. Freeman, I guess my question is best directed at Mr. Freeman, it was my understanding that the Auditor General's Office was one of the first state agencies to get directly involved as of about two years ago I think initiated their pilot program and they have somewhat in the neighborhood of about 14 vehicles involved in this. It is also my understanding that their results, if they haven't published those results and sent them over to you yet were extremely positive as far as performance of the vehicles go, as far as maintenance costs associated with the engine parts of the vehicles, and obviously, the reduced costs of fuel. If they have not turned those results over to you, I don't know what your process is, but at that time could you make those results particularly available to our Committee through the Chairman. I think it would be very helpful to myself as well as other members of the Committee.

A We would be glad to do that. We are trying

to get a copy of the final report ourselves presently and when we do so, we will share the information with the Committee. I wouldn't be at all surprised if the results would be positive based upon the information we have reviewed from applications worldwide. Nothing but good things to say about it.

BY REPRESENTATIVE STEIGHNER: (To Lt. Governor Singel)

Q Lastly, Governor Singel has inferred again in his remarks of the need for the expansion of the infrastructure to have these facilities available as hopefully more and more vehicles, particularly our state vehicles are converted over. What is the short term, I guess, response as to the expansion of these facilities from the gas companies? How soon can we have more service areas available?

A It is really a chicken and the egg situation. We really have to assure a market for the supply before we could expect the private sector to invest heavily in these refueling stations. So, what our million dollars is geared at is jumping into that circle and just picking a starting point and beginning to make some conversions. If we could convert 500 vehicles this year, if we could get that up to 1,000 or 1500 next year, if we could get into the tens of thousands in a short period of time, it would become very clear that it would be cost

effective to establish refueling centers in different parts of the state. At the present time there are some, just in casual conversations I have had last night and today with officials from the gas companies, there are already some discussions in the boardrooms about proceeding with refueling centers because of this interest and because of your interest and because of the state's prodding in this direction. I think you are going to see a half dozen new refueling sites in the next year just by virtue of that positive thrust. But the larger number that we are going to need is going to be the result of market realities. We have to make this a product in demand before the supply will generate.

Having said that, I should also mention to you that there is some encouragement that we received from the gasoline petroleum companies themselves. I think that the more innovative and the more forward thinking gas companies are going to realize that they are going to have to add a natural gas component to their own filling stations at some point in the future. Those that are ahead of the curve, those that establish those facilities now are going to find themselves in an advantageous competitive position and I am hoping that they get the message soon and help us with their own development.

REPRESENTATIVE STEIGHNER. Thank you. That is all I have, Mr. Chairman.

CHAIRMAN PETRARCA: Representative Daley.

BY REPRESENTATIVE DALEY: (To Lt. Governor Singel)

Q Yes, Mr. Chairman, to follow up on the last two questions, Governor, maybe if you or Jan could answer this. We know that what we are trying to do is put some money out there, seed money, to develop some new programs maybe, as you put it, develop cleaner and a more sustainable transportation field of technology. How would you feel about a bond issue of measurable proportion like some other states have in terms of going out to really seek and develop new technologies. Ohio, as we know, we talked about the Ohio situation many times, about the $100 million they used. I think that was more geared towards one particular natural fuel. But what do you think about the possibility of gearing it towards more than just one natural fuel? Because I think we in Pennsylvania sit on not only coal but the gas and some of the other natural resources that I think other states simply cannot compete with us. How do you feel about a bond issue?

A I am enthusiastic about the development of alternative fuels to the point where I believe that very soon the private sector is going to take hold of this

and develop this on a for-profit basis. I would be hesitant to put the state into a major debt position because we would be spending money that would be rightfully and more logically be spent in the private sector. These are the guys who are going to make money on the technology. These are the guys that are going to be selling the fuel. These are the guys that are going to be making the new vehicles and the new tanks and the new ancillary kind of equipment necessary to power this new alternative fuel technology. They are the ones really who should be investing in the big ticket items like refueling centers and conversion.

So number one, I think we are always better off if we encourage the private sector to utilize natural market forces to create this demand and supply situation.

And number two, the technology exists and it is not complicated. It is conceivable that CNG conversions can occur in a number of areas and it is not something that would require a major state investment. What we are doing is the initial demonstration, hopefully, to spark the imagination of the private sector. For the time being I think that is the logical way to pursue.

Q My philosophy is not different than yours. However, sometimes we have what is known as a paddle theory.

When my father used to coach football, he would line the linemen up, he used a small paddle to make them get off the line very quick in practice. The bigger the paddle, the faster the player got off the line. I'm saying to you is that in order to encourage that natural entrepreneurial private investment maybe we need a bigger paddle.

A You may be right. And I think what we ought to resolve to do is to get back together in six months or so and to see where we are. And if a million dollar demonstration project per se is not sufficient to launch your linebacker, then let's come back and build a bigger paddle.

CHAIRMAN PETRARCA: To follow up on what Representative Daley said, Governor, it is better I think to invest with the utility companies now than go have EPA and Environmental Resources come in later and clean up a mess. So that is a good investment. Representative Mario Civera.

REPRESENTATIVE CIVERA: Thank you, Mr. Chairman.

BY REPRESENTATIVE CIVERA.

Q Governor, I was impressed in your testimony when you reached on the subject there would be $200,000 available for mass transit, especially in the southeast where I come from. I think the road that we are on right

now as far as natural gas in vehicles I think is a good one and I compliment you on your testimony and your support that you have shown this Committee in the last day or so.

My question is this, or maybe it is not a question, it is a statement. See how you can respond to it. I think that Pennsylvanians are skeptical of the concept of natural gas in vehicles because they are not educated enough to understand the safety factor of how safe they are and until you are on a committee like we are today to face, hear the gas people, the gas companies throughout the state tell us and show us that it is a safe vehicle, that that mass transit would literally be the vehicle that we should be using to demonstrate to the public. Would you consider, and if legislation maybe could be put in every year that mass transit comes back to the Legislature for additional dollars for them to operate, that some of that money be mandated that so many vehicles in that fleet be turned over. For instance, a bus going down in Philadelphia on Market Street would have a sign, this bus is operating on natural gas to protect the clean air in the City of Philadelphia and the public would then start to educate themselves that it is a safe way to go. It is safer than gasoline. And government at the same time would be doing their part to

demonstrate that we are looking at alternative methods for fuel. And I was wondering if, in next year's budget or when it comes to dealing with mass transit such as SEPTA, which they come back every year and probably will keep on coming back until the year 2000 or even more, that we then maybe in a bipartisan effort could say we are going to give you X amount of dollars if so many of those vehicles are turned over to a natural gas source. How would you feel about that?

A I would support it. I think it makes a lot of sense and in the context of SEPTA's yearly appropriation from the State of Pennsylvania, I think it would be perfectly legitimate for the Legislature to insist that some conversions take place or better that new vehicles purchased, that new additions to the fleet should reflect at least a percentage of newer technologies. I think it makes a lot of sense.

Q See, there have been bills that have been introduced to this Committee that relate to school buses. I think we face a safety factor with the safety factor question to the general constituency, my child is going to be on a school bus and we don't know enough about this alternative fuel, and I am not sure I want my school district to adopt this measure. Wherein the public, the public transportation sector after a year or so and

after riding the vehicles, we then could prove, look, this has been in the City of Philadelphia, SEPTA has adopted this and it works and it is safe and we have had no complaints. Questions like would gas leak through the ventilators or whatever. I mean, we could then justify testimony to the individual school districts and go on record saying this is documented proof that this is safe. And I think the only way that we are going to be able to do this is through public transportation, mass transit.

A Well, let me offer you an additional selling point for your argument. In addition to demonstrating the safety of compressed natural gas, if you would require conversion or you would require experimentation with compressed natural gas in mass transit vehicle fleets, you would be doing them a favor because you would be reducing their maintenance costs. You would be reducing their fueling costs, and in the long run, you would be reducing the amount of subsidy that the state would continually have to dole out to these mass transit authorities. I find the mass transit authorities to be very receptive. As I mentioned, we have experimentation going on in at least four of them and I think that all of our transit authorities across the state would do this voluntarily because it is cost effective for them. However, a little nudge, a paddle,

as Representative Daley might say, from the Legislature is not only a good idea, I think it is overdue.

REPRESENTATIVE CIVERA: Thank you. Thank you, Mr. Chairman.

BY CHAIRMAN PETRARCA.

Q Governor, on House Bill 77, briefly, I introduced almost a similar bill in '81 when Ken Gaudy approached me. And in Erie, the school district had an experimental program with ten buses and now the entire fleet is propelled by natural gas. It is working in Erie. But since 1981 until today, I guess because of the drop in gasoline price hasn't moved. Now there is a big push on the environment, the ozone layer, etc., we are doing it. And I appreciate your leadership on it.

Real quickly, you say you want to comment on '77 and maybe House Bill 1805 which Texas has already passed and Levdansky's bill 1767.

A Yes. If you don't mind, very briefly, having looked at this package, on House Bill No. 77, I think it is a positive step to encourage school districts to convert to compressed natural gas for all the reasons we talked about. The trouble that I see with this bill is that there is no upward limit on expenditures. Some kind of a cap would be necessary only because we have 501 school districts and it would be an expensive proposition

indeed if everyone decided to take advantage of the reimbursement language in this legislation.

Secondly, your legislation calls for funding of fueling stations as well. I would point out the fueling stations can cost upwards of a half million dollars each.

Q $150,000 each.

A It depends on the technology, it depends on the location, it depends on the engineering. But that also could be a very big ticket item. And I am not so sure that the state will need to build the refueling stations. As I say, I believe that the private sector will be actively involved once they understand that the demand has been established. What you're doing here in House Bill 77, as it is presently written, is committing the state to massive expenditure of funds that might run afoul the Budget Office right at the present time.

There is one other thing I would mention real quickly on the bill, and that is, that there is no emphasis on other fuels. I think that what you might want to do is incorporate into it additional incentives for an application of methanol or ethanol or other possibilities.

Q 1767 does that.

A Good.

Q But also, you know, Canadians are rushing to the border and all along the border they are putting up these natural gas stations because they have many natural gas cars in Canada. And I understand, according to Ken Gaudy, they drilled a well in Somerset 8,000 feet deep and we have got all the gas to last us for 65 years. I think that is long enough for you and I.

A There is good reserve. With regard to the other bills, with regard to House Bill 1767, Represenative Levdansky's, I have no doubt that the state can handle all the responsibilities outlined in this legislation and the Pennsylvania Energy Office has been active in nearly all of the activities that it is talking about. I am not sure it is necessary to establish another task force on alternative motor fuels however. We essentially are doing that with existing personnel. I am always inclined to focus on performance rather than process, and it is a little disconcerting to continually create new task forces when they may or may not be necessary. I will be willing to continue the thrust forward on compressed natural gas in the Energy Office instead of a task force and work directly with your Committee to make sure that it proceeds in a positive fashion.

With regard to House Bill 1805, I am concerned about the lease provision. On page 1, you have added language that says motor vehicles that are purchased or leased by the school district could be reimbursed by the state. And that opens up a whole constitutional question of whether or not the state could actually fund private lessors of buses and other vehicles. It just gives us some cause for concern. The other point is that all motor vehicles, the language you use in this bill is that all motor vehicles purchased, leased and so on. That is a little too rigid. Because again, that would be a tremendous cost if this conversion took off as well as we think it can.-

And the final comment simply is that the Governor's Energy Council, as we mentioned in this bill, doesn't exist. We converted it and there would have to be some language changes in order to make this compatible with reality. But I do think that they are positive steps. I think it is important that we continue the progress and I think we would be more than willing to work with you in terms of language that would be productive and progressive.

Q We will welcome amendments. And the reason that was put in there, that type of language, is many poor school districts lease their buses. They

don't own their buses. We are trying to take care of everybody.

A Understood.

Q And the only thing with this methanol, I understand that the only drawback is six percent comes from the Soviet Union and OPEC nations and I would rather stimulate the Pennsylvania gas fields before we do anything for OPEC.

A Yes.

CHAIRMAN PETRARCA: Anymore questions?

(No response.)

LT. GOVERNOR SINGEL: Thank you very much. We look forward to working with you.

CHAIRMAN PETRARCA: Thank you, Governor. Dr. Jeffrey Seisler, the National Gas Vehicle Coalition, Washington, D.C.

MR. SCHELLHARDT: I thought we had a panel of Jeff Seisler and two people from American Gas Association.

CHAIRMAN PETRARCA: Go right ahead. Sit down.

MR. SCHELLHARDT: All right, thank you.

CHAIRMAN PETRARCA. Please introduce yourself for the court reporter.

MR. SCHELLHARDT: Chairman Petrarca, if it

is all right with you, we have worked out arrangements among ourselves for me to speak first to be followed by Dr. Seisler.

CHAIRMAN PETRARCA: That is fine.

MR. SCHELLHARDT: My name is Don Schellhardt. I better spell that, S-c-h-e-l-l-h-a-r-d-t. I am with the American Gas Association. My title is Director of State and Local Relations and Executive Assistant to the Executive Vice President. I hold two different jobs.

DR. SEISLER: I am Jeffrey Seisler. I am the Executive Director of the Natural Gas Vehicle Coalition in Washington, D.C.

MR. GENERO. I am Tony Genero. I am also with the American Gas Association, Manager of New Market Development.

MR. SCHELLHARDT: Chairman Petrarca and members of the Committee, as I just indicated, my name is Don Schellhardt and I am representing the American Gas Association. The American Gas Association or AGA is a national trade group composed of, roughly, 250 natural gas distributors and pipelines in all 50 states. We at AGA are very pleased to be invited to participate in these important hearings today and we want to commend both the Committee and its Chairman for taking this vital initiative for the future of Pennsylvania.

The agreement we reached among ourselves on the panel was that Dr. Seisler and Tony Genero would respectively address some of the specific characteristics and advantages of natural gas vehicles. I am opening up with an overview of what is happening in the public policy area right now. There is considerable momentum building up in the public policy field for action on clean fuel vehicles in general and natural gas vehicles in particular. This momentum is building at both the federal government level and the state government level. I would like to begin with the federal government level. The United States Congress took the first decisive step in this area last fall when it enacted the Alternative Motor Fuels Act of 1988. This Act is more popularly known as the Sharp Rockefeller law.

The new statute was specifically designed to address a nagging problem in the development of clean fuel vehicles. That problem is this. There are a number of small companies around that can and will retrofit existing gasoline vehicles so that they have the capability to use natural gas or a desire to use propane. However, despite this retrofitting capability which can be tapped today, the large auto manufacturers have so far been unwilling to introduce any factory built natural gas vehicles or any factory built versions of methanol vehicles

or ethanol vehicles or other clean fuel vehicles.

To attempt to induce some action by Detroit, the Alternative Motor Fuels Act of 1988 offers a carrot to the auto companies. It says that when and if auto manufacturers produce factory built clean fuel vehicles, they can gain credit toward meeting federal fuel efficiency standards for vehicles. Now, we don't know how effective this incentive will be. There does seem to be some interest on the part of Detroit, but they have also indicated to Congress that it takes at least five years to set up a new assembly line to produce factory built vehicles and they haven't decided yet whether they are willing to do that. So for the moment, they still haven't responded to the incentives and the main option for immediate action on clean transportation fuels is retrofitting of existing gasoline vehicles to use natural gas or propane.

Now Congress has not been sitting around waiting to see whether the recently enacted incentives are going to work. They already have other proposals under discussion. One proposal has received considerable publicity is out of the Bush Administration. As one component of a comprehensive clean air proposal, the Bush Administration wants to impose a flat out requirement that auto manufacturers must start producing factory built

clean fuel vehicles. The targets call for 500,000 such vehicles to be produced in model year 1995, 750,000 such vehicles for model year 1996 and one million vehicles per year for model years 1997 through 2004. The Administration currently contemplates all of these vehicles would be targeted toward the nine metropolitan areas with the most serious air quality problems.

Now while the Administration has been busy, the congressional leaders have not been idle. There is a leading proposal in the House of Representatives entitled HR 99. It was introduced by Congressman Hal Swift of Washington State and it is popularly known as the group of nine bills. It is called that because the core set of sponsors is nine House energy and Congress committee democrats. However, we are probably going to have to change the nickname because the bill is starting to attract some support from committee republicans. In any event, that bill goes even further than the Bush Administration proposal. It would just flat out say that if a metropolitan area has serious or severe air quality problems, virtually all of the fleet vehicles, public or private, must be converted to the use of clean transportation fuels.

Now those two proposals, the Bush Administration proposal and HR 99, do not exhaust the list

of options under consideration by Congress. Those are only the leading proposals. The point I am making is there is a lot of discussion going on and we expect to see some action before this session of Congress is over.

At the state government level, some states have moved beyond the discussion stage. As this Committee is aware, the State of Texas has recently enacted a sweeping mandate for phase shift to clean transportation fuels by a number of public sector vehicles in the state's areas with air quality problems. Effective would be most of the state's mass transit buses, most of the state's school buses and virtually all of the state government vehicles.

I want to stress, however, that Texas is not alone. It has only been the most dramatic example. In 1987 Arizona acted in this area by initiating a somewhat more limited mandate for phased shifts to clean transportation fuels. That law affects public and private fleet vehicles in metropolitan Phoenix and metropolitan Tucson. In 1988, Arizona decided to further expand that basic statute to cover essentially all of the mass transit buses in the state. Incidentally, Arizona at the same time dealt with the question of taxation of natural gas as a motor fuel. Their decision was to move ultimately toward taxing natural gas at parity with gasoline, however,

the state legislature felt that during the early years of natural gas vehicle development some sort of tax incentive was needed. So the solution adopted there was to move up to tax parity over a period of eight years with the first three years involving no taxation of natural gas at all, the next set of three years involving taxation at a low level and the last two years involving a move toward an ultimate tax level of 16 cents per gallon equivalent. Arizona and Texas stand out in the pack because they have mandates on the books. I should mention though that Colorado has also gotten into the area of a carrot rather than a stick. Their state legislature just adopted a law which provides a $200 rebate to anyone, corporate or private, who requires a clean fuel vehicle. In addition, although California has yet to actually adopt any mandates, there are a number of proposed mandates under consideration. In particular, the South Coast Air Quality Management District, which is the air quality agency for the greater Los Angeles area, has committed itself and principle to a mandate for clean transportation fuels. That mandate would affect public and private fleet vehicles and ultimately is estimated to involve the conversion of more than one million vehicles in the Los Angeles air basin.

Now before I close up I wanted to leave

three points for the Committee to bear in mind in its deliberations, three sort of opinions of the American Gas Association. The first, for so long as oil remains seductively inexpensive, you should not expect that the market is going to develop clean fuel vehicles on its own, at least not on a very substantial scale. Some sort of government action is going to be required to jump start the shift to clean fuel vehicles.

The second, as you structure legislation, we at AGA urge you to provide for an open marketplace, one in which all the clean transportation fuels can compete on the proverbial level playing field. Now let there be no mistake. We, in the gas industry, believe we have the best product on the market. We think we are going to end up with the biggest market share when it comes to clean transportation fuels because we believe we have the best product. But we also feel that the market should be open to any of the energy sources that are substantially cleaner than gasoline. That would include natural gas, propane, electricity, methanol and ethanol. We believe all of them should be allowed to compete and the customer should have the choice of selecting that product which best suits the customer's needs.

Third, because there is action in this area

on both the state government level and the federal level, this Committee and the State Legislature of Pennsylvania has an opportunity to promote progress in two different arenas. You can proceed with your own legislation, which we hope you will do. At the same time you can also urge your congressional delegation to stand in favor of an alternative fuels mandate at the federal level. One that will promote decisive progress and provide for an open marketplace.

As a closing note I would like to set a philosophical tone for a moment. There is a movie out entitled the Dead Poet Society. In it Robin Williams is constantly quoting a latin phrase carpe diem. It means cease the day. Make the most of your opportunities while you have those opportunities in your hand. Well the political process very rarely provides an opportunity to simultaneously advance the causes of energy security and environmental improvement and economic growth, all three simultaneously without a trade off between those three being necessary. This is a rare opportunity. We at AGA hope that the Committee will make the most of it. Carpe diem.

Now let me turn to Dr. Seisler.

DR. SEISLER: Thank you very much for the opportunity to come and speak to you today, Mr. Chairman,

Representatives. As I say, my name is Jeffrey Seisler. I am the Executive Director of the Natural Gas Vehicle Coalition. The NGV, as we call it, Coalition is a broad-based national organization. We are dedicated to promoting and stimulating the use of natural gas as a vehicle fuel. The Coalition supports the development and implementation of federal and state policies that encourage the use of natural gas for cars, trucks, buses and other types of vehicles including off-road vehicles. The Coalition also supports new technologies that advance or assist the growth and commercialization of the natural gas vehicle market and the natural gas vehicle industry.

Our 78 or thereabout members are growing every day since our beginning about a year ago include natural gas distribution companies, pipelines, engine manufacturers, bus body builders, a host of the individuals and companies who convert natural gas vehicles.

The Coalition applauds the State of Pennsylvania for addressing air pollution and energy security problems, and your assertiveness in doing so and for its leadership in attempting to solve these problems. And I am specifically going to talk about natural gas vehicles, the benefits, why we are so excited about promoting natural gas vehicles, very briefly, and just a couple of comments on the opportunities that

you have as legislators to put into place some of the programs.

As you heard, natural gas vehicles offer an excellent opportunity to provide an economic, safe and energy efficient solution to problems related to mobile source air pollution.

Natural gas as a vehicle fuel is economic. An equivalent gallon of natural gas sells, an equivalent gallon being our therm, 100 cubic feet sells for between 42 cents and 80 cents an equivalent gallon. And on the average, the utility companies selling this fuel at their fueling stations charge approximately 62 cents for an equivalent gallon for natural gas as an equivalent gallon of gasoline. And the current price of gasoline at the retail pumps is something in the neighborhood of a dollar to $1.20. Wholesale prices of gasoline are slightly less than that.

Secondly, natural gas vehicles are environmentally benign. In light duty engines, NGVs produce about 85 percent less reactive hydrocarbons (the precursor to smog and ozone) than gasoline engines; in excess of 85 percent less carbon monoxide, and there is a key right there that we have seen numbers achieved on some dedicated natural gas vehicles showing 99 percent reduction in carbon monoxide. We produce approximately

18 to 30 percent less carbon dioxide than gasoline vehicles. This is critical. Because carbon dioxide has been identified as a global warming factor. Nitrogen oxide reductions have also been achieved and NGVs have been shown in testing in California and at the Environmental Protection Administration laboratories in Ann Arbor to be in compliance with and in many cases well below the current standards. So every single instance we have a very good story to tell on emissions benefits from natural gas vehicles.

On the heavy duty engine side, the results can be even more dramatic. Reductions there, there is no particulate matter in natural gas vehicles and we can do away with the black cloud that you see when you drive behind a diesel, a large diesel bus or a diesel truck or a diesel garbage truck thereabouts.

Also very exciting is that natural gas vehicles, the engines are being developed by Cummins Engines, Detroit Diesel Corporation and there is retrofit equipment that is being developed that would be able to be put into existing buses and trucks to be able to get them to run on natural gas. In fact, natural gas today may be the only fuel that can successfully meet the 1991 standards for diesel bus emissions and the 1994 standards for heavy duty engines without any tailpipe or particulate

kind of controls whatsoever. So we are very excited about the opportunity for cleaning up the environment.

Thirdly, natural gas is a domestic and abundant fuel. Ninety-five percent of the natural gas used in this country comes from the United States. The balance comes from Canada, and has in small part in the past, come from Mexico. We believe the expanded use of natural gas will decrease the U.S. and Pennsylvania state's reliance on oil from unreliable foreign sources.

As for supply, you have heard in the Chairman's own words talking about 65 years supply of natural gas at current day's prices. This is numbers that has been promoted and used by the Department of Energy, the U.S. Department of Energy and DOE claims we have a 200 year supply of natural gas in the ground in North America depending upon how deep and how the economics and the comparative prices of oil are.

The other nice thing about natural gas is, not to be forgotten, it is a renewable resource. You can turn garbage, through biomass technologies, into natural gas. Landfills also produce natural gas. You can see a day where you can run your garbage trucks on natural gas, have them dump off their garbage at the local landfill site, take the gas out of the landfill, put it back into the garbage truck as a fuel and you have a

complete cradle to grave cycle. So that is an interesting concept that looks at natural gas as a renewable fuel.

To put it into perspective, we can always say, well, is there going to be enough natural gas to run our vehicles if we go through wholesale conversions of these vehicles. About 10 million vehicles converted to natural gas would consume approximately one trillion cubic feet of natural gas. That is one tcf. In today's market, we are using between 17 and 18 trillion cubic feet of natural gas. With that 10 million vehicles converted would only use about 60 percent of the national supply of natural gas.

In terms of safety, natural gas vehicles are about the safest vehicles you can find on the road. Natural gas as a vehicle fuel is probably the safest fuel that we know of. It has a very narrow flammability range. It takes between five percent natural gas to oxygen, five to fifteen percent natural gas to oxygen to become flammable. It is lighter than air. If it does leak, it goes up into the atmosphere. And as some of you have been made aware through films, we have tested natural gas vehicle systems. The storage cylinders that you saw outside today in these vehicles, we have done dynamite testing, bonfire testing, gunshot testing and car drop testing from 30, 50, 70, and 90 feet in the air simulating

crashes up to 55 miles an hour and beyond and those cylinders are virtually indestructible. As we have seen demonstrated, the only thing that can penetrate one of these cylinders is an armor piercing bullet shot out of a NATO assault rifle.

Natural gas vehicles offer an immediate and long-term solution to Pennsylvania's energy and environmental problems. The expanded use of NGVs from the economic/environmental perspective is good, but they also promote energy efficiency. One thing not to be forgotten that NGVs present an abundant non-seasonal demand that contributes to base-load use of natural gas and much of the refueling of natural gas vehicles can be done in off-peak hours.

There are other clean fuels and we applaud the use of other clean fuels and the opportunities to use them. And just very briefly, some of the opportunities you have as state legislators, obviously, removal of regulatory barriers. There is such things as limitations in bridge and tunnel restrictions that harken back to the 1940s to accidents in the propane industry that are no longer appropriate for natural gas vehicles and we would hope that some of these restrictions could be lifted.

Develop state and municipal fleets running on natural gas vehicles. And I want to stress one thing

that we are not only looking at the conversion of your existing vehicles. One of the things that is going to break this chicken and egg that the Lt. Governor spoke about is for the state and municipalities to go to General Motors, Ford, Chrysler, etc., to your vehicle suppliers, and order the vehicles running on natural gas. And they have even indicated to us that they would be willing to develop and build natural gas vehicles if we demonstrated the market and you were part of that activity to demonstrate the market. So there are two elements. Working with the gas industry to retrofit vehicles and also purchase these vehicles.

We have talked about financial incentives to reduce the capital costs of developing a mature clean fuels industry. One critical element would be to allow utility companies to rate base the cost of these compressor stations. After all we are building compressor stations that are going to serve the best interests of the public. If they, for example, put in a compressor station in at a bus company, a bus operation, you are not just selling fuel to one customer. Every single person that gets on that bus becomes a consumer of natural gas and a participant in cleaning the air.

Developing investment tax credits for installing the fueling stations is being done. At the

federal level we see the opportunity to do so. At the state level as well as developing investment tax credits to purchase and convert clean fuels and clean fuel vehicles.

The other notion of exempting clean fuels from state sales tax is a concept that would increase the economic benefits to customers who do invest in these low polluting vehicles.

On the flip side of this the opportunity is to impose an environmental assessment on dirty fuels and that is something that could be done statewide or specifically in regions of the state that are having problems with pollution.

Lastly, to invest, as you already indicated you have in R&D, to promote the use of clean fuels.

In conclusion, what we are looking for at the Natural Gas Vehicle Coalition, our industry, as has been stated by Don Schellhardt, we are looking at a performance oriented, not a prescriptive policy by nature. It is not necessary to say that you will use this fuel or the other. That the marketplace is sophisticated enough looking at the economics and environmental opportunities to make your own fuel choices.

Policy makers and consumers -- private individuals or industry should evaluate the various fuel opportunities and alternatives based upon the costs, the

economics of the equipment, and the investments, the environmental benefits of the various clean fuels because each does have its benefits and each does have its drawbacks and the concerns about safety as well as supply. Where are we going to get the fuel and how it is going to get delivered to the customer. As for natural gas vehicles, any fair analysis of the different fuel alternatives will show that the fuel of choice will be economical, clean-burning and domestic natural gas. Thank you very much for the opportunity to address the group today.

BY CHAIRMAN PETRARCA: (To Dr. Seisler)

Q One question, you talked about our antiquated law, about a propane truck going through a tunnel. In '45 they said it was wrong to do it. How come we can do it now? Is it a stronger container or what?

A Pardon me, what was the last thing?

Q Whether it is stronger containers.

A Well, what happened in the '40s, there was a propane accident that occurred, it was either in the Holland Tunnel or the Lincoln Tunnel in New York City. Propane by its nature, the fumes are heavier than air and they do collect on the ground and the possibility of a leak we saw an example of that with this R u s s i a n propane

explosion that occurred three, four weeks ago. And based upon that, the fire marshalls got very upset that this could happen again so they banned all compressed fuels on bridges and tunnels. In fact, gasoline is a far more dangerous fuel to be carrying around than natural gas. But that particular law has carried over much like a blue law would from the 19th century. The mind set was there and they carried over and compressed gases are prohibited in tunnels and the lower carriages of dual carriage bridges, a few of which are in New York City. We don't see those are appropriate. If you do have an accident with natural gas vehicles, it will go up into the atmosphere and we believe that the ventilation systems that normally clear out the pollution that typically exist when you drive cars and trucks through the tunnels would be adequate to also evacuate the natural gas and remove any of the possibility of explosion. The Brooklyn Gas Company is studying that right now and I'm sure we would be able to make their report findings available to you for use in the State of Pennsylvania.

MR. SCHELLHARDT: Can I address that also for a second?

CHAIRMAN PETRARCA: Go ahead.

MR. SCHELLHARDT: I don't know the history of the specific propane incident, but I know a certain

generic problem we have in the safety code-building code area is that these codes were generally developed long before anybody thought of the idea of a natural gas vehicle. In the case of the tunnel restrictions, they have propane in mind when they wrote the regulations and 30 years later we come along with a new product. It is quite a bit different from propane, at least from a safety profile and we are stuck with laws that weren't written with us in mind. I wanted to throw out to the Committee as one possibility, which is mentioned in one of the attachments to our written testimony, an idea that came from our California company. California Gas Company started looking at all of the safety regulations that were not appropriate to natural gas. They found so many of them that they felt that there should be one state law to kind of address the problem generically and say if there is any safety or building code restriction that has the effect of discriminating against a clean transportation fuel, that law should be automatically voided to the extent that it has a discriminatory effect unless the state agency or whatever can affirmatively show there is in fact a safety justification. So it wouldn't automatically void them but it would void them unless someone could come in from the appropriate agency and say here is why we did it, here is why it still makes sense

as applied to natural gas or whatever. And so that kind of automatic red flag for some of these outdated laws will hopefully help to clear a lot of this out of the way without having to go look at each item individually. That is something in the California testimony that we attached to our formal written testimony today.

CHAIRMAN PETRARCA: So if you have any of these new laws make sure the Committee gets them for us to look at them. Representative Civera.

REPRESENTATIVE CIVERA: Thank you, Mr. Chairman.

BY REPRESENTATIVE CIVERA: (To Dr. Seisler)

Q Either one of you could answer this. In your testimony you state that natural gas sells for between 42 cents and 80 cents per gallon. If we get into the equivalent of what the gallon is does this price that you are looking at, this 42 cents to 80 cents, does this include any of the federal and state taxes that would be implemented?

A Yes, it does. There is a nine cent federal tax on vehicle fuels on gasoline that also applies to methanol and to propane. It does not apply to natural gas and electricity, but natural gas has, I guess, the undistinguished benefit of being taxed back at the well head in the pipeline. So it is already

taxed there. And yes, the range does include state taxes which does vary across the country, and that is the price of the gas compressed. So that includes the cost, the operation and maintenance of the compressor facility as well.

MR. SCHELLHARDT: Just a technical refinement. That does include the state tax where the state has a tax, but in many states there is no tax on natural gas. This is the case where not thinking of us works to our benefit, you know, we sort of got over-looked when they wrote the tax laws. So in some states that amount would rise when and if a state tax is added. But in those states where a tax does apply, that is included in the figure.

BY REPRESENTATIVE CIVERA: (To Dr. Seisler)

Q One more question, you mention in your testimony that you would encourage local municipalities to order vehicles from Detroit that had natural gas fuel systems in it. My question is, I think to achieve that is that state initiatives would have to be made to the municipalities. If they do this, some type of monies would have to be supplemented to each individual municipality. Is the gas industry prepared to do something to help offset some of the costs in the first five-year program if we were to initiate such a program as far as

cost to municipalities?

A I think part of the responsibility of the gas company is to deliver the gas in the form that it is needed. In this particular instance, since we are talking about compressed natural gas there are different approaches that gas companies are taking to provide customers with compression, again, looking at the potential of rate basing a compressor station provided to a customer would certainly help spread the cost of that. And we have seen situations where gas companies have opened up their own fueling facilities to allow customers on so that alleviates the responsibility of the customer to build a fueling facility. They have also opened up a fueling pump on the outside of the utility's yard, the compressor is inside. And again, to allow customers to come up with a computer key card and plug in a computer card, get fuel and then be billed at the end of the monthly billing cycle.

For the urban mass transportation administration, yes, the utility companies have, in many instances, guaranteed as their part and share of a private/public partnership to bring on alternative fuels provide the refueling stations at no or reduced charge to customers. So there are a variety of opportunities that utilities have.

In terms of paying for vehicles, that is something that has come up, the West Coast Pacific Gas and Electric Company has in fact converted 100 postal vehicles out there and have provided $1500 per vehicle to do the initial demonstration. So, there are a lot of different approaches. I think personally the best approach for the gas company is to provide the benefits in the cost of the gas, in the refueling stations and in support for that technology and thereby alleviate some of the burden.

MR. SCHELLHARDT: Could I just add also? Jeff just touched on rate basing and in the same California document that we submitted as an attachment to our main testimony today, this question of rate basing is also addressed. And the three California utilities involved there came up with the idea of giving the legislators or the Public Utilities Commission the choice of two different ways to go. The first was to rate base the refueling stations, that is, take the costs and spread them over all the gas utility customers instead of passing those costs just on to people using that refueling station. That lowers the cost of gas coming out of the station by a considerable margin. That was one alternative.

The other alternative was to deregulate the pump sales from the refueling stations. Have the

utility pick up all the capital costs of the refueling stations, every penny, but then say, okay, since none of the money to finance this refueling station is coming from utility customers, we are not going to regulate the rates charged. So the California company is basically we can move under either approach. If you want to stick with traditional rate regulation, regulate what we can charge at the gas pump and we would like to be able to pass on the capital costs of that refueling station to all our customers instead of just the people using that refueling station.

If you want us to pick up all the capital costs of building the station, we can do that, but then we would like to be able to make back those costs from deregulated rates at the pump.

I also mentioned something else out of the Texas experience. In that statute, and I assume this is tracked in the Pennsylvania bill that Chairman Petrarca has introduced, there is an exemption provided from the vehicle fuels mandate if financing is unavailable from a clean fuels supplier. So basically if a municipal fleet, say, is affected in Texas, they cannot find any clean fuels supplier to provide them the financing, loan them the money for the capital costs, then they can get an exemption from the mandate. And you know, the

effect of this on us is to basically say there is a market for you here, but you have to provide some of the loans for people to make that investment and that seems to be something at least our Texas companies can live with.

BY REPRESENTATIVE CIVERA: (To Mr. Schellhardt)

Q One more question, my point is this in the Governor's message, in his testimony to this Committee, that they suggested they would put out $200,000 to urban mass transit to give incentive to those transportation companies in getting involved in turning those vehicles over to natural gas. I'm sure that the Commonwealth, this Commonwealth, as we get involved more and more with this issue that we are going to be and the individual legislators are going to be making initiatives to the municipalities as far as dollars are concerned to the school districts. To ask you point blank, is your association prepared to go to some of the individual municipalities in Pennsylvania and say, if you turn your fleet over, we will cut you exactly a dollar amount rate to supply those vehicles with natural gas? That is my question.

A I think Tony Genero wanted to address this one. Basically, I'll say one thing, that is something that the association as a whole cannot undertake. You will

have to deal with the individual gas companies on that sort of arrangement because they are the ones selling the gas.

DR. SEISLER: One simple answer and then I'll hand it over to Tony, the answer from the Coalition members' perspective is yes.

REPRESENTATIVE CIVERA: Thank you.

MR. GENERO: In 1987, the Urban Mass Transit Authority did adopt an alternative fuels initiative program. There was $46 million put up for the program of which 75 percent is federal government and 25 percent is either state, local or private. That initiative program is designed for the urban mass transit bus. Right now those submittals number about 49 submittals across the country and just recently they announced a grant award to Pittsburgh to do five natural gas buses. So, in answer to your question about the urban mass transit, yes, the federal government has come forward as well as the private, local and state sectors.

MR. SCHELLHARDT: Let me add one other point that may be relevant here. I don't think this has actually happened in Texas but it is under discussion between some of the companies and some of the municipal governments. An idea that is being considered is to have the gas utility pick up any unrecovered capital costs.

Any costs that the municipal government would have to pay out of pocket to convert without getting help from the state government or federal government, the utility would pick that up and then the utility would be paid back out of the rates on the gas sold to that bus. So say, for example, diesel fuel in Texas would cost a dollar a gallon and natural gas would cost 50 cents a gallon. Those are not precisely accurate figures, but they are in the right ball park for Texas. Okay, the utility comes in, pays for any unreimbursed cost in the bus conversion and then says we are going to charge you a dollar a gallon equivalent for our natural gas until we have gotten recovery of what we loaned you. Then our price will drop to the market level to 50 cents. As I said, I don't know of any specific agreement that has been reached to carry out this concept. I know it is under discussion. It seems to be attractive to both sides in that state.

CHAIRMAN PETRARCA: Representative Lescovitz.

REPRESENTATIVE LESCOVITZ: Mr. Chairman, I will wait until the third gentleman gets a chance for his comments then I will have a few questions.

CHAIRMAN PETRARCA: Go ahead, sir.

MR. GENERO: As I said, Mr. Chairman, my name is Tony Genero. I am with the American Gas Association and I am manager of new market development.

I would like to just touch on the marketplace.

In the U.S., as the Lt. Governor mentioned, there are approximately 30,000 vehicles that are running on natural gas, principally utility-owned vehicles as well as the private sector. They are served by refueling stations that are primarily located at the utilities. A number of those are opening to the public or are already opened to the public.

Looking at the market internationally, there is approximately 300,000 natural gas vehicles in Italy served by 240 public refueling stations, and this program has been taking place for approximately 40 years. In New Zealand there is approximately 110,000 vehicles served by over 400 public refueling stations. In the USSR, there are over 200,000 vehicles now running on natural gas and that number will approach the million in the '90s. They have a very foolish approach to their abundant supply of natural gas. In Canada, our neighbors to the north, they have approximately 20,000 vehicles served by 120 public refueling stations and they are in the process of adopting a home refueling device to further enhance the market.

Of course, as many have mentioned, the reasons for this conversion to natural gas, there is an abundant supply of natural gas in this country. Reduce

our dependency on foreign oil and improve, most recently improve the air quality in those areas that are non-attainable. At that point now we will start answering your questions.

CHAIRMAN PETRARCA: Representative Lescovitz.

REPRESENTATIVE LESCOVITZ: Thank you.

BY REPRESENTATIVE LESCOVITZ: (To Dr. Seisler)

Q I just have a general question and maybe you gentlemen can answer. I believe under guidelines of the Environmental Protection Agency aren't car manufacturers required, over a period of years, to increase miles per gallon to reach a certain limit? Under last year's federal legislation on alternative fuels, are natural gas vehicles exempt from that? If not, are they going to be able to compete with those guidelines set forth by the Environmental Protection Agency?

A None of the alternative fuels are exempt from that, but in fact, the car manufacturers have been given an opportunity to build more alternative fuel vehicles to receive a credit for or against I should say the other miles calculation for their other vehicles. So they are in fact encouraged to build them and use a clean burning fuel. It will go in their favor.

In terms of natural gas and the efficiency

of natural gas, BTU for BTU, that is British Thermal Unit, the energy measure, we are finding in testing we are doing at emissions laboratories around the country, an increase in performance miles per gallon, something in the neighborhood of 12 to 20 percent. And that we think will be a good measure, particularly when the engines are built specifically to run on natural gas. So we do believe in fact that natural gas vehicles are built for that purpose. Running on natural gas will even contribute to the ability of the car manufacturers to meet the corporate average fleet economy numbers established by Congress today and throughout the 1990s.

Q In other words, it is actually an incentive for them to pursue this because of the credit?

A Correct.

REPRESENTATIVE LESCOVITZ: Thank you.

CHAIRMAN PETRARCA: Representative Tigue.

REPRESENTATIVE TIGUE: Thank you, Mr. Chairman.

BY REPRESENTATIVE TIGUE: (To Dr. Seisler)

Q Dr. Seisler, how does propane and ethanol compare to natural gas in emissions?

A How does propane ethanol compare to natural gas in terms of emissions. Propane is a fairly clean burning fuel as is natural gas. It has similar qualities

except it is stored in the liquid. And we have found in testing that it is pretty close to performance, emission performance, of natural gas. Ethanol like the both alcohol fuels that are popular, methanol and ethanol, they both tend to see an increase in aldehydes and specifically formaldelydes, but they are slightly reduced in terms of nitrous oxides because the alcohol fuels burn slightly cooler than natural gas which burns about 1200 degrees. So we do have some emission numbers that Tony has just given me. In terms of methanol gasoline and diesel, we can provide some of these comparative numbers to you for further study.

Q One other question. Maybe Mr. Schellhardt wants to answer. In the states where they already have a system of pricing have any of those states been required to go through the PUC, and if they have for any of the companies that have gone to the Public Utility Commission, if they have, how are the rates determined, by the company asking for approval?

MR. SCHELLHARDT: I think somebody else may want to provide some more details on this, but there are a number of instances where companies have proposed rates for sales to natural gas vehicles. And those rates developed by the company have been subject to PUC review. To the best of my knowledge, and maybe I will be

corrected by one of my companions here, I don't think anyone has a deregulated rate structure in effect right now.

I also just want to say on the comparison emissions, without getting into the specific numbers, natural gas overall is the cleanest burning of the fossil fuels. So in terms of all the various pollutants, we are cleaner burning in general than ethanol or methanol. But on the other hand ethanol and methanol are both cleaner than gasoline.

DR. SEISLER: The last numbers I saw on NGV rates, by the way, we encourage our companies to go to the public service commission to establish a rate, number one, to market the fuel so a customer knows what they are buying and how much it is costing. As well as the unique characteristics of the use of natural gas as a vehicle fuel, as I said in the previous testimony, that it is an off-peak use by and large it contributes to the baseload capacity. So there are some advantages in getting a lower rate in fact for compressed natural gas.

The last numbers I saw is there are 16 utilities in 17 different service territories that had in fact applied for a natural gas rate. Typically, I have found that they are using a light commercial rate

that they would typically charge to that class of customer. Again, I think it warrants further study and further development with the Public Service Commission or the Public Utility Commission on that issue, because there are some very good economic advantages, and from the consumers' standpoint, they need to have a natural gas rate, a vehicle rate, to sell the fuel and make it easy for customers.

MR. GENERO: I would like to also comment on the rate structure. The fact that the vehicles are a bi-fuel or dual fuel vehicle, it is possible to introduce a rate that would be interruptible gas which would be more economical. Because a vehicle, if it needed to be interrupted, it has the other fuel on board to run on during that period of time. So, some of the innovative companies have introduced like an interruptible rate for motor vehicles.

CHAIRMAN PETRARCA: Representative Wozniak.

REPRESENTATIVE WOZNIAK: Thank you, Mr. Chairman.

BY REPRESENTATIVE WOZNIAK: (To Mr. Genero)

Q You are speaking about Canada and they have like 150 stations now.

A That is correct.

Q Are they run by their utility company?

They are not privately owned or are they privately owned?

A They are on an existing station. For instance, Shell, you can pull into the station and get whatever flavor you want, gasoline, natural gas or diesel fuel.

Q So Shell Oil also has the compressors for the natural gas?

A That is correct. And they provide the location to have the vehicle converted also right at that service station and serviced.

DR. SEISLER: By the way, just to add to that, in the United States, the oil companies who are now, by the way, calling themselves gas and oil companies because of their vast natural gas holdings and because of the market turn of oil, we have been contacted by ARCO, Chevron, Shell, International, I know Mobile is looking at it as well. They are going through planning exercises at this point to look at the potential of opening up refueling stations at their existing gasoline distribution outlets. Typically in Colorado, California, Texas and hopefully here in Pennsylvania where the states have shown an interest in converting vehicles because that begins to show the oil companies the retail fuel outlets that there is going to be demand and that is what will feed the development of that infrastructure. We are

attempting to do the same thing in Washington, D.C. with AMOCO right now to open up a refueling station on Capitol Hill. So we can refuel our NGVs and hopefully give better demonstrations to the Senate and Representatives in the U.S. Congress.

MR. SCHELLHARDT: I would like to add two statistics here that might put the oil companies, the motivation of some of the oil companies into better perspective. It has not been well publicized, but the domestic resource space for oil seems to be declining pretty rapidly. Right now, if you look at oil and gas in the United States combined, natural gas accounts for almost 60 percent of the total production. Look at energy equivalent terms. Put the two together, three-fifths of the two types of energy being produced in the United States are natural gas. Now if you look at the margin, sort of the face of the future, you look at the newly drilled wells, the wells drilled during the 1980s, more than 80 percent of the energy they have been discovering is natural gas. So if you project ahead, you can see the amount of oil we are producing domestically is going to drop by about 50 percent over the next 10 or 15 years. From the standpoint of a domestic oil company, one that is not a big multi-national that can get its oil from anywhere, primarily a domestic company, that means they are

going to be in the natural gas business whether they want to be or not. There is not going to be oil left for them to sell. So that is one thing is pushing them.

From the standpoint of you people as public policy makers, it means that if we do nothing, imports won't stay the same. Oil imports will rise. We are going to have to run very hard just to stay in place. And if we have any idea at all about preserving any shred of energy independence for the next generation, even holding the line where it is let alone getting better, we have got to do something about our reliance on oil imports.

I will throw in another statistic just for the record. I think it is pretty dramatic. I don't think it is widely recognized how dependent, how big a role transportation plays in our reliance on oil imports. If today we stopped using oil for everything else except transportation, we stopped using it to heat our homes, we stopped using it to run our factories, we stopped using it to generate power, we stopped using it to make chemicals, we cut off everything else except transportation, we would still have to import oil just to meet our transportation needs. We produce, roughly, eight million barrels a day of oil in this country. We consume, roughly, ten million barrels a day just for transportation. Until you look at transportation and move decisively, you are never going

to get free of OPEC. It is just going to get worse and worse and worse until we decide we are willing to pay the price, bring out that paddle and get moving.

REPRESENTATIVE WOZNIAK: Okay, back to the subject, Mr. Chairman. I didn't get finished. So it is rather obvious to me one of the problems that we discussed last night and today is that of the market itself. And you say the infrastructure exists and in my mind's eye, I would see the oil companies jumping at the opportunity because they have the Sheetz's and all these other guys on every corner in Johnstown and Altoona and every place else. I guess the next question is now instead of having an oil truck coming up and pouring the gasoline into a tank, you literally have the gas line coming in and hooked up to a compressor right there. So you eliminate transportation of the natural gas through tunnels because they will be piped through underground.

MR. GENERO: The pipelines exist now.

DR. SEISLER: There is a million mile pipeline in this country. When we are talking about tunnels, we are not talking about pipeline tunnels, we are talking about the vehicle storage, you know, the fuel stored on board the vehicle. But that is correct, you will not have, with the increased use of natural gas as we have seen diesel spills, gasoline, other over-the-road

carried fuels by either train or truck, the natural gas industry does not suffer through those particular sets of problems.

REPRESENTATIVE WOZNIAK: In present economics, what does it cost for a station, a compressor? Let's say Sheetz's down here on whatever street it is determines to put one up. What would it cost to put a compressor in?

DR. SEISLER: The back of the envelope --

REPRESENTATIVE WOZNIAK: Not just the whole building, a compressor.

DR. SEISLER: The back of the envelope calculation that we usually refer to, for every vehicle you wish to fuel on a fast fill basis, it is roughly about $1,000 per vehicle. And that there is an economic break-even point at about, I believe it is $450,000 will get you a station that can refuel 600 vehicles is what we found in building some of these stations. It is going to vary, depending what kind of fuel dispensers are put in, the amount of storage. But if you want a back-of-the envelope calculation, it is $1,000 a vehicle. If you want to refuel 300 vehicles, it will cost you in the neighborhood of somewhere between 250 to $300,000 to build that station.

REPRESENTATIVE WOZNIAK: I am a little confused here. I am looking at a machine that compresses

gas and forces it into a tank. A $1,000 a vehicle until you get to 650 vehicles, then it is paid for. It doesn't cost anything except for the electricity you use?

DR. SEISLER: No, I am talking about the economy of scale that you achieve of getting a larger engine, a larger compressor to compress gas for more vehicles. Okay, the per vehicle price will range from $1,000 down to 800 down to 650 the larger size unit you get. Your economy of scales begin to fall off at the $1,000 per vehicle at about 30 vehicles. It begins to get less per vehicle cost for that compressor station.

REPRESENTATIVE WOZNIAK: Yes, but once you turn it over to natural gas, you have thousands and thousands of cars per month going through. There has got to be one price. $650,000 is what it costs for a compressor station and just the compressor itself. What I am looking at is there is your tank that holds 500,000 gallons of gasoline or whatever it is underground. Goes up into a pump and you pump it in. There is one flat fee that that costs. That has got to be same as a compressor. There is one flat fee that a large compressor with a fast fill would cost. I don't see where you are saying it is per car because I'm missing something. I don't want to belabor this.

DR. SEISLER: Okay, if you are going for --

if you are looking at a ball park estimate, that is it. You have hit upon the ball park estimate for a public station, full facility with a couple fuel dispensers with double hoses, etc.

REPRESENTATIVE WOZNIAK: Cost of retrofitting an automobile.

DR. SEISLER: The cost of retrofitting an automobile are going to range from about $1750 to something in the neighborhood of 2250, something in that range. That is including two cylinders, with about 10 to 14 or 15 gallons equivalent storage on board the vehicle. And the bulk of that is the cost of the cylinder.

REPRESENTATIVE WOZNIAK: That is it, Mr. Chairman.

CHAIRMAN PETRARCA: Okay, I want to thank you gentlemen for testifying. Before I call the next witness, we will take a five-minute break.

(Brief recess.)

CHAIRMAN PETRARCA: The next gentleman to testify is Mr. William W. Millar, Executive Director, Port Authority of Allegheny County.

MR. MILLAR: Mr. Chairman, good morning. I am William W. Millar. I am the Executive Director of the Port Authority of Allegheny County in Pittsburgh, Pennsylvania. And with me this morning is John W. Welsh.

He is the Director of Marketing and Engineering Services for the Equitable Gas Company in Pittsburgh.

You heard several times this morning a reference from earlier speakers about public transportation and the potential for use of natural gas empowering urban mass transit buses. We have teamed up with the Equitable Gas Company, and as referred to earlier, have obtained a federal grant and we are in the process of acquiring five natural gas powered buses at the current time. And it is that program that I wish to primarily discuss with you this morning.

Now before I start, I want to tell you a little bit about the Port Authority. As I mentioned, we are the mass transit provider in the Pittsburgh area. We operate about 900 urban transit buses, 71 street cars and light rail vehicles, two incline planes, and we have the nation's largest power transit service for elderly and handicapped persons. Through these various modes of transportation, we serve about 300,000 riders on a typical day allowing those riders to have mobility, to go to work, to go to school, to shop, doctors, whatever it is they might want to do. So unlike all your previous speakers, I am really here representing a very important consuming group of transportation and transportation energy.

Over the years Port Authority has been viewed

as a very progressive agency and we have tried to make use of a lot of different innovations. In fact, at the moment, the grant that we are talking about that we received from the federal government takes advantage of two provisions of federal law that were put in in 1987. We also, over the years, with the help of this Committee and the General Assembly have been able to do many other types of innovations such as our busways in Pittsburgh and things of that sort.

We have been very interested in alternate fuels. In fact, back in 1981 Port Authority was the first transit agency in the nation to conduct studies of different types of alternate fuels, and as the earlier speakers had indicated, the change in economics in the mid-eighties led us to more or less put these studies on the shelves. However, I think now it is very clear, with the air crisis, dirty air in our cities, with the potential short supply of diesel fuel and other petroleum based fuels in the world, and other things of this sort, that it is high time we pulled these studies off the shelves, put them into action and see what we get. So that is what I really am here to talk about today.

I want to commend you, Mr. Chairman, and the Committee as a whole for encouraging this area. I think it is very important that we all work together so

we can develop ways to bring natural gas powered buses on line. Find out the good, the bad and the ugly about them I guess you might say, make whatever changes are necessary and move on from there.

We think that it is particularly important that we have alternatives. As has been mentioned earlier, the largest single sector of our economy in terms of consuming petroleum based fuels is the transportation area, and literally we are captive of a very unstable world market.

I think some very good examples of that, one of the very clear ones was earlier this spring, when the Exxon Valdez ran aground up in Alaska. Within a few days we were paying an additional four cents for diesel fuel. Four cents may not sound like much, but when you consider that we use ten million gallons of diesel fuel in the course of a year, that right there is $400,000 unexpected added to our operating budget.

Well, we began last year working with the Equitable Gas Company in Pittsburgh to pursue a federal grant. We filed an application with the federal government asking for 75 percent of the cost for the purchase of five buses, transit buses, 40-foot transit buses. Equitable Gas has agreed to provide the non-federal matching money for that particular grant. Part of their money will be

invested in the fueling station, and of course, throughout the demonstration program which we anticipate is a three-year demonstration program, we will be collecting a lot of data, analyzing how well these buses do in a tough urban environment like Pittsburgh with our tough terrain, tough weather, and things of that sort. We will be also testing and surveying a lot of the riders, the drivers, our mechanics, everybody involved with these buses so we can learn just how well they work. We can learn what changes, if any, are necessary if indeed this is to be the long-term involved.

Our relationship with Equitable has been very good so far, and we are, in fact, wrestling with many of the questions that were raised here this morning about rates and how do you meet the federal regulations and still fit in and all those kinds of things. So, it is an ongoing process and one that we will be very happy to keep the Committee informed of over the next couple of years as we pursue this particular approach involved.

I am not going to read, as you can tell, a lot of the information that is in my testimony but instead I have been trying to hit some highlights. I do want to comment on a couple of things which are not particularly covered in the testimony but as I heard the other testimony here this morning I want to speak to.

I think first is the issue of how do we make change happen? We heard the Lt. Governor this morning talk about the need for change, talk about some money that the Energy Office may be willing to put up. I am a big proponent of incentives. If we want change to happen, then we need to provide people with incentives. I think the transit industry in Pennsylvania will be willing to try new things. I think there is an understandable conservatism on some of our part as every day we have to make sure we get the millions of people who use our buses to work there every day. So while we want to be innovative, while we want to try new things, we want to move in such a way, that we don't endanger the basic service that we provide. So, I would encourage as a legislative approach that we try to build incentives in to make it worthwhile so that the transit authorities do experiment. So that we learn from those experiments, so that we disseminate that information so that we don't have to invent the same wheel in Philadelphia, Pittsburgh, Allentown, Johnstown and where have you around the state. So I think that is the way to do it and I think that is indeed possible.

I think also we need to look at the broader picture. I think it is very good that in your proposed legislation, Mr. Chairman, you are looking at school buses

as well as mass transit buses as well as commonwealth vehicles, but we note with some concern at the federal level, for example, they are looking at just urban transit buses and forgetting all about heavy diesel trucks for example. Well that might sound like a nice thing to do except diesel buses are only two percent of all the heavy diesel engines in the country and trucks are 98 percent. And when we approach the engine manufacturers, they say, gee, we don't want to retool, we don't want to go through all the development costs for two percent of the market. Where is the rest of the market? So I think as you come to grips with what the right public policy is and what the right mix is, I just want to encourage you to look at a mix, I want to encourage you to think about incentives that would allow this to come on line as quickly as possible and develop the policy along those lines.

So with those very general remarks, as I say, there is additional detail in my testimony and I would be very happy to answer any questions about that or reflect further on the general comments I made here this morning. And again, I just want to thank you and the Committee for your support of the Port Authority over the years and continued support I know we will have in the future.

CHAIRMAN PETRARCA: One quick question,

House Bill 1767 does allude to trucks. So I want you to know that. Any questions from the Committee?

(No response.)

Thank you for your testimony.

MR. MILLAR: Thank you very much.

CHAIRMAN PETRARCA: Dr. Robert Mulvin, Harborcreek School District. Dr. Mulvin has to leave. If Mr. Smith doesn't mind waiting now.

DR. MULVIN: Thank you, Mr. Chairman. I appreciate very much the opportunity to come here today. And I must share with you that it is a somewhat humbling experience for a superintendent of schools from a small district like Harborcreek in northwestern Pennsylvania to share in the grandiose atmosphere of this great state building and particularly this room.

My story is a little different than some of the others you have heard to the extent that the Harborcreek School District has been involved in a project of fueling all of our school buses and driver ed. cars and vans and all the other kinds of vehicles, dump trucks that we use in the school district of Harborcreek since 1981. We don't sell fuel and we don't sell the equipment that happens. So the only thing that I have to sell to you today is a concept that has worked and worked well and saved the Harborcreek School District

thousands of dollars. And I would like a few minutes to tell you about that experience.

Basically back in the early '80s when we got started in this project, the concept of doing something different to fund our schools was a priority with our board. Our board had cut programs much the same as many other districts in this Commonwealth. We had furloughed staff, and finally one night our board president looked at me and said, "This has got to come to a halt if we are going to continue quality education in this school district. And that funds they have got to be cut, they have got to be cut in the areas of non-instructional. Mr. Superintendent, your job is to look at those areas and see how we can do other things in the district more economically to provide funds for the educational process. That's what we are all about."

So with that charge very early, I was in my office one evening about the time the buses left school. We had 25 all rolling by my office window and it occurred to me that why couldn't we fuel these buses on natural gas and at that point I made some inquiries. There was not a lot of information available in 1980, but either way I did find that there was one small school district in northern Colorado that was running some school buses. There was nothing this side of the Mississippi.

So I visited that district, had the opportunity to personally drive a bus, come home and put together some specifications to eventually purchase equipment. At the same time that was happening the Legislature here in Harrisburg was assembling rules and regulations governing the natural gas installation. We were the first one in this Commonwealth to come under the new regulations and there was a lot of pessimistic attitude in our area about whether the equipment was safe and kids would be riding on a school bus with a bomb underneath it and all those kinds of things. But the result of a special team of State Police that was sent out from Harrisburg to perform this first inspection, the headlines in the Erie paper that followed that said Harborcreek school buses safer than safe.

So in an attempt to tell you a little bit about the Harborcreek experience, I have assembled for you, and I think you have copies and I will just review that very briefly, what I call the 15 most often asked questions of which many of them have surfaced today. I will answer them only in the context of the effect that they have had on Harborcreek.

1. Did we look at other fuels before we made a decision to go to natural gas?

Absolutely. We examined the other alternatives

available. From our standpoint there were not cost savings in going to diesel and diesel projects. We did look at propane and some of the characteristics of that fuel did not seem like it was in the best interest of hauling students. So we did make a concerted effort to look at other opportunities.

2. How long has the Harborcreek School District been operating vehicles on methane fuel?

Since 1981. We have had as many as 41 vehicles operating at one time. We fueled those vehicles both with time fill and quick fill. The majority of those vehicles, 26 of them, are filled in the evening inside overnight with no one there. When the driver comes in in the morning, the bus is full and it is ready to go.

3. Are methane-fueled vehicles more dangerous to operate than gasoline-fueled vehicles?

Absolutely not. We believe that they are much safer than gasoline because of the nature of, the characteristics of natural gas. I think you have had demonstrations made available to you and information about that that would sustain that. But as a matter of trying to build public confidence in Harborcreek School District, we even put an alarm system in every bus so that if there was any level or very low levels of natural

gas available in that bus it would set the alarm off. In eight years of operation, we have never had the alarm go off because of an excessive level of natural gas available in any one of the buses. But the public feels better about the concept so that makes it better for us.

4. How many miles per gallon does a bus get or how does it compare with gasoline?

The literature that is available would suggest that the gallon of gasoline and the therm are uniquely similar on both vehicles. We found that to be a little different with school buses. In the school buses we actually achieved anywhere from one-half mile to one and a half miles greater with methane than we did on gasoline. And the reason for that, we began to analyze that was the school bus spends a great deal of time in the idle cycle. They stop, wait for students to load, unload, the loading process after school, they may be out there for ten minutes waiting for students to come out and the methane performs much more economically in the idle cycle than gasoline does. So that has been our experience.

5. What is involved in a typical conversion?

It is not difficult. The conversion is a very simple process to perform. All of our vehicles the conversion was performed by our own staff and including

the fueling stations that were installed by our staff. So that it is not extensive.

How many years were required to recover the initial cost of the installation at Harborcreek?

That was 1.9 years we were able to pay for the system. Now this happened in 1981. If you remember the differential was greater so that depending on the year between '81, although it looks much more attractive right now. So we had our money back at that period of time. We did not take any taxpayers' dollars at that time to do that. We set up sort of a holding company as the private sector would call it. We used the capital reserve fund, borrowed the money and then used the savings to pay for the project. So that we didn't go to the taxpayers and raise millage to put a project like this in.

I know that your bill has some provisions, Mr. Chairman, for financing these in the future. I think they are commendable and if it can happen, I would be delighted to be your best ambassador in that process. On the other hand, there are other alternatives that if compromise is necessary, I would be delighted to share some concepts I have that would serve as seed money to get districts moving.

6. When operating on methane do vehicles

experience a power loss?

To a great extent the experts would say yes, slightly at low speeds and the initial starting. We do see that in school buses. That didn't make any difference to us. The trade-off is well worth it. In fact, our bus drivers had a heavy foot with gasoline so that the little slower start was an advantage to us. We didn't go around and shout about that. From our standpoint we would listen to the drivers and say, well, that is the best we can do. I brought down for your viewing out here, which you had a look at this morning, a Dodge 318 van. It is virtually impossible for you to see any difference between gasoline and methane in terms of the power. It is a dual fuel vehicle and you can switch back and forth and any kind of a demonstration would be, if there is a loss of power, it is not visible to the operator at least in that observation.

7. What kind of dollars savings does the Harborcreek School District annually generate?

Well, that has had a low of 38,000 when gasoline and natural gas were very close. It has had a high of $58,000 to us. I rather suspect in the earlier years it might have even been a little higher. We use some very conservative numbers.

Either way those dollars, from my standpoint,

are going back into the educational process. They are providing quality education and they are used for that and that is what it is all about. And we had not ought to be taking dollars funneled from the Commonwealth to the school district and spend it all for gasoline. Let's spend it to teach kids, and that is why I'm here. I want more dollars to teach young people. And if we can save dollars any way else, that is what is important to me. That's where I am coming from.

The public reaction, of course, it was very pessimistic. There was not another school district in this Commonwealth or west of the Mississippi, as I said, doing it in 1981. So, of course, the community was pessimistic about it and there were the axe grinders who were undermining me in every possibility. But we set out a massive campaign in that community to educate the community. In fact, we had the biggest party that Harborcreek probably ever had where we invited the community to come in and view the buses and we provided a dinner for them and demonstrated the equipment. They had a big red carpet and a bus six foot in the air so they could crawl underneath and look at the installation. As a result of that we used as our tour guides in our demonstration our own bus drivers. And we spoke to Sunday school classes and Kiwanas and Rotaries and anybody else

that would listen. Well the result of that all paid off and our community is not pessimistic, but they are very optimistic. They appreciate very much the dollar savings and the relief, if any, to their tax structure. In fact, it is a pride point with our community where they like to tell others about it. In fact, I spent a great deal more time than I probably would have liked to as a tour guide for members of our community who brought their friends and associates from other school districts or other industries into Harborcreek.

8. Have you experienced any cold weather problems such as freeze-ups?

No. In fact, it has been greatly enhanced with natural gas. With gasoline drivers had a tendency to push the pedal several times before they started the vehicle and sometimes flood it, and then after they flood the vehicle, when it is 15 to 20 below in northwestern Pennsylvania, then they would run the battery down. So it was a culmination of errors early morning in northwestern Pennsylvania. That has been eliminated. The methane is already equally divided with the cylinders and the buses start well. It has not been a problem. We have not experienced freeze-ups. We have not experienced any of the kinds of things that some of our adversaries would suggest that we would.

9. Are the converted vehicles still able to operate on gasoline?

Yes. Our vehicles are all dual fuel. We do not carry a lot of gasoline in the school bus. We, for the most part, carry about five gallons so that if we would have an emergency of any kind, we could switch over. The only other time that the gasoline would be used is if you went on a long extended field trip or athletic trip, something of that kind. Most of our vehicles have a range of 75 to 80 miles. That is more than sufficient. The school bus fleet business is probably one of this Commonwealth's most desirable installations to the extent that all buses come and go from the same place. So some of the concerns that you have with compressed gas and having filling stations are eliminated with a bus fleet. They all travel 50 to 100 miles a day or the majority of them do in this Commonwealth and of the 501 school districts, I think there is 496 are moving students of the Commonwealth. So it has worked very well. There are other concerns that what I suggest to you that there are other alternatives. Certainly there is a whole generation of business out in front of CNG that is down the road in liquid natural gas. I know we are not here to talk about that today, but that is the next part of it.

I believe it is the Pennsylvania thing to do.

I think it is the American thing to do. I am proud that Harborcreek has been involved in this project for the past eight years. It has worked well and I am here as an ambassador of the process and I will be happy to answer any questions you might have.

CHAIRMAN PETRARCA: Doctor, I heard about you since 1981 and a lot of the things you have been saying now Ken Gaudy knows, Kevin knows, but upstairs they have not been listening. I am glad you are here. Representative Steighner.

REPRESENTATIVE STEIGHNER: Thank you, Mr. Chairman. Very briefly, I don't have a question for the doctor, maybe just a statement. There was talk this morning from time to time about the importance maybe for incentives, for a fleet or a transit authority or whatever. If in fact on any of these bills that we consider those type of incentives, I think it would be important upon us as well to consider an organization such as Harborcreek, who a long time ago, nearly eight years ago, showed a lot of courage, a lot of fortitude, a lot of initiative in getting involved in this program. And possibly, if there are incentives for organizations to get involved in the future, we grandfather an organization such as a school district up in northwest Pennsylvania who showed an awful lot of courage eight years

ago under a lot of negative community impact initially. But when they started the program, it really has been a shining light for this program for years. That is all, Mr. Chairman. Thank you.

CHAIRMAN PETRARCA: Any more questions? Representative Preston.

REPRESENTATIVE PRESTON: Thank you, Mr. Chairman.

BY REPRESENTATIVE PRESTON:

Q I have a couple of short questions. You owned the buses?

A We owned the buses in 1981 and we have since subcontracted the buses. But in the process of doing that, we still supply the fuel. So I really don't believe from the concept of whether you own your buses, in fact, that is something you would probably hear around this Commonwealth, because you have in Pennsylvania, more contracted services of buses than you do district-owned buses. But I think the concept is still the same. I think the concept of the district providing fuel is a cost savings to the community.

Q That leads to my next question. How do you, say, provide the fuel? In other words, I mean, do you put it up for bid, do you decide to purchase it, request proposals or do you have a well yourself in the

school district? I don't know. When I was out in Illinois there were several school districts, for example, that had their own wells. And some of them, as far as natural gas, they were basically self-contained. So they ran their own wells and they had it on electric. I was just curious.

A Well, with natural gas, we do have some wells and we use some of that gas, but the amount of gas --

Q You own the wells yourself, the school district?

A Yes. But that falls far short of our needs to supply the vehicles. The savings that I talked about are not the result of us owning our own wells. They are the difference of the supplier price of natural gas and the price of gasoline. And when we buy gasoline, we do bid gasoline. And that differential, right now, for example, the price of natural gas is about, as we are paying, close to three dollars.

Q I mean, do you put it up for bid or what?

A Natural gas, no. We have only one supplier.

Q One supplier, okay, because I have several questions for the next gentleman.

A Gasoline we do put it up for bid.

REPRESENTATIVE PRESTON: Okay. Thank you, Mr. Chairman.

CHAIRMAN PETRARCA: Representative Wozniak,

last question.

REPRESENTATIVE WOZNIAK: Thank you, Mr. Chairman.

BY REPRESENTATIVE WOZNIAK:

Q Doctor, I see the total cost for the fuel project is $147,000.

A Yes, sir.

Q The guy that talked before you said to put a compressor up and all this kind of stuff is $500,000. If I had a conversion kit on my car, I could drive into your compressor station right now and order time fill, right?

A Yes, sir.

Q Okay, that is all I want to know. I didn't understand big money over here and you did it for $147,000. That was the whole kit and caboodle?

A That is three compressors that are necessary to service the 40 vehicles that we run. And we have broad base of vehicles that operate, not just school buses, even a dump truck, 1947 Army truck.

Q What is that?

A A 1947 Army truck, which was a surplus vehicle which runs on natural gas as well.

Q Now would it cost more if you had a fleet of, let's say, 400 buses? Would you need more compressors?

A Yes.

Q That is where the differential is coming from?

A Yes.

REPRESENTATIVE WOZNIAK: Okay, good enough. Thank you.

CHAIRMAN PETRARCA: Representative Tigue.

BY REPRESENTATIVE TIGUE:

Q Doctor, who determines what the cost of gas is? What gas company supplies you?

A National Fuel.

Q Do they have to go to the PUC?

A Yes.

Q And how do they charge, what is their dollar charge? Is it based on a commercial rate or --

A No, our rate is based on a commercial rate less certain state taxes.

Q Why lesser state taxes?

A Well, there is certain taxes of a school district being in the Commonwealth.

Q You pay gross receipts tax on the utilities?

A Pardon.

Q You pay gross receipts taxes on the utilities?

A Well, there are some -- I am not familiar

with the total tax structure.

Q I do not understand what taxes you do not pay.

A You'll have to ask that question of a fuel company.

CHAIRMAN PETRARCA: I want to thank you and we will probably be calling you back in the future if we need more testimony.

DR. MULVIN: Thank you.

CHAIRMAN PETRARCA: Mr. Raymond Smith, Vice President of Marketing, Peoples Natural Gas Company.

MR. SMITH: Mr. Chairman, members of the Transportation Committee, my name is Raymond Smith. I am Vice President of Marketing for the Peoples Natural Gas Company in Pittsburgh. I am here today representing the gas distribution utilities, the interstate pipeline companies and the allied organizations which comprise the Pennsylvania Gas Association (PGA). With me today is Daniel R. Tunnell, President of the Association.

It is important and timely that this hearing is being conducted, Chairman Petrarca, and we salute you for taking a major role in the development of current legislation regarding clean air and transportation. PGA is not surprised that you are in the forefront of this effort in view of your leadership as far back as 1982 in

in proposing legislation which was enacted to promote the use of natural gas "wherever economically feasible" in Pennsylvania's fleet vehicles.

We are pleased to be able to present our views on natural gas as it relates to vehicular fuel in Pennsylvania. We strongly support President Bush's clean air initiatives announced last month. As you would expect, we believe natural gas is THE alternative fuel. Others testifying today have addressed the premium qualities of natural gas as a transportation fuel: its cleanliness, its safety, its economy. I'd like to focus on two things: the existing record of natural gas vehicles in Pennsylvania, and the future supply of gas to serve the transportation market.

The natural gas industry has been involved with Natural Gas Vehicles (NGV) technology for over 40 years. As early as 1927 at the Natural Gas Association's annual convention in Cincinnati, Columbia Gas demonstrated a natural gas powered Dodge Screenside turck. There are other examples of early research and development, but the significant picture in Pennsylvania emerged in the early '80s.

By 1982, there were 25,000 natural gas powered cars and trucks in the United States. That same year, the People's Natural Gas Company and other gas

utilities here in Pennsylvania began "dual fuel" conversions on their fleet vehicles to operate on natural gas.

Today there are 30,000 natural gas vehicles in the United States--419 vehicles operated by five of Pennsylvania's gas distribution companies. Another 154 natural gas vehicles are owned and operated by six of their customers at locations in the areas of Erie, Harborcreek, Warminster, Plymouth, Pittsburgh and Wilkes-Barre. Columbia Gas of Pennsylvania can point to its sister company in Ohio with 180 NGVs in its service territory. Additionally, there are 13 natural gas refueling stations in Pennsylvania, owned and operated by these utilities to fuel utility and customer vehicles. These refueling stations are available for use by government and others.

We know from hands-on experience that natural gas conversions work. We have records to prove the savings which can be realized. We have experience with maintenance and can point to the environmental benefits realized. We have trained employees, worked with vendors and suppliers, we have "built bridges" with school districts and other fleet operators to promote the concept, and we have communicated with our customers and the public on the subject.

In a word, as a combined group of gas utilities, we have many years of technical experience in the use of natural gas powered vehicles and we can use that experience for the benefit of the entire state.

Among the non-utility vehicles of note are the 14 vehicles in the Auditor General's Department which have been refueling at our facilities as part of a joint test program for nearly two years. Other examples are the work done by National Fuel Gas involving the Harborcreek school buses and what good testimonial we heard this morning from Dr. Mulvin, the 90 buses in the Erie School District, and there is also a fleet of maintenance vehicles operated by Culligan Company, which I believe you will hear more from later.

And the next applications on the horizon are buses made to run exclusively on natural gas. Columbia Gas will have such a bus this year in its Ohio operating territory. In Pennsylvania, Peoples Gas will have its first natural gas powered bus by year end in Altoona. The Altoona demonstration is the result of a cooperative test venture with the Pennsylvania Energy Office and Altoona Metro Transit.

As you have heard, next year you will see five natural gas buses in Allegheny County in a joint program between Equitable Gas Company and Port Authority

Transit (PAT) using Urban Mass Transit Authority funding.

I should add, too, that Columbia Gas, Equitable Gas, Peoples Gas and Consolidated Natural Gas companies are members of the new Natural Gas Vehicle Coalition which was founded in Washington, D.C. in 1988, which Jeff Seisler heads up.

We have heard a lot about supply this morning so I would just like to skip over to the last page and just express as an industry, we are confident that whether one considers converting existing vehicles or manufacturing new ones to run exclusively on natural gas, the supply is available and reliable and that we, as an industry, are ready to meet the challenge to supply the fleet.

Chairman Petrarca, we are confident natural gas can make a major contribution to clean air but we ask for your sign of encouragement when it comes to natural gas technology. Specifically, we need a funding commitment from state government to assist the private sector in financing needed projects such as refueling stations. Quite frankly, I think we got a good start on that this morning from the Lt. Governor's program that was announced here on the kickoff. Additionally, any legislation enacted on clean air and transportation should treat all businesses fairly, by

that I mean allowing us the ability to compete. Other people this morning have characterized that as legislation based on performance standards, which we would certainly endorse.

I commend you, Chairman Petrarca and the members of your Committee, for calling this important issue before the public and I thank you for the opportunity of appearing. As our PGA profile booklet says, we believe our companies and employees are "Good Citizens, Good Neighbors". I invite your questions today or any time to our Association and members. Such dialogue advances the public welfare, which is our mutual concern. As Governor Bob Casey's slogan says: American begins here. Therefore, let's set a precedent for our nation to follow Pennsylvania in the use of natural gas.

I would like to conclude by just making a couple of brief comments on issues that came up earlier this morning if I may. The issue of whether there is any antiquated Pennsylvania laws that inhibit the use of natural gas on our highways is one, we have an industry that researched, and to the best of our ability, there is no existing legislation that would inhibit natural gas. Therefore, the kinds of things that Jeff was referencing with respect to New York would not appear to be an issue here with us today.

The other thing I would like to briefly address is that of the tax aspect of natural gas. My company, Peoples Gas, began converting vehicles back in 1982. We have about 270 vehicles currently converted today. The interpretation of the Liquid Fuels Tax Code at the time in 1982 when we began was that that legislation encompassed compressed natural gas. Therefore, we have been paying the fuel use tax on the natural gas that we have used in our fleet since 1982. And I am aware of at least one Department of Revenue audit that we have had during that period and through that we have confirmed that that is also the Department of Revenue's interpretation of that code. So, my understanding and my sense is that the current liquid fuel use legislation is sufficiently broad that it subjects compressed natural gas usage to the tax. That concludes the remarks. Thank you.

CHAIRMAN PETRARCA: Representative Preston.

REPRESENTATIVE PRESTON: Thank you.

BY REPRESENTATIVE PRESTON:

Q Mr. Smith, I have a short series of particular questions in relationship to the area. I don't think that any of my colleagues per se are against the issue. And one of the things I found that happens that once we get involved with legislation that everybody

is for it is that sometimes we start overlooking some of the fine tuning and sometimes it is more than fine tuning that might be necessary. You have only mentioned one area as far as particular types of funding. My question to you, as being a provider, are there other areas that we may need to look into to be able to straighten out whether legislatively with us as well as with the PUC?

A I am not prepared to add to what I have already committed to this morning, Representative. There may well be, but we have not gone to the PUC for anything special beyond what we have already had because we thought we had sufficient tools to serve the market to the extent that it was there.

In terms of legislation, I don't have any other suggestions for you.

Q I have a particular question in relationship, as I get into this unique animal that I am dealing with, gas companies I know, for example, that where I live I just can't switch from one gas company to the other. You know, the people across the street have another gas company and I can't get that one. I am looking at, when we are talking about competitiveness, and hearing the previous gentlemen saying that they have a provider. I am looking at a potential area that we are going to have to deal with to have this competitiveness and having

somebody else also controlling the price as compared to, if we ever get to the consumer area, which I can see us looking at too, unfortunately the President is not looking into it until 1995. And I think that they haven't even really started designing the cars for 1993, and it seems to me we could be looking at it a little bit earlier. How do you perceive competitiveness as far as the territories, and I have been looking at this area, how is someone going to be served? Is it going to be where the company is or is it going to be where, how would you say, the filling station is? I'm trying to figure this out. It is obvious, for example, take the Pittsburgh school district. Let's say, for example, when we put things up for bid, we deal with an enormous amount of contractors. There may be ten to twelve different contractors giving us buses and there are a lot more than that. How would we be able to say that we want these people to have natural gas? Who is going to serve them? Is it where the school board's district is and/or is it where each one of the contractors are in or is it where the school district says this is the filling station that we are going to use?

A That is not a real easy question.

Q Well I mean this is one of the things that I think we are going to have to clarify before we instruct

people that you can do this. Because, like I say, I can see us having an awful large amount of conflict.

A Well let me come at it in this fashion if I may. In terms of when you have a particular station that is attached to somebody's natural gas system, that is a pretty much captive account. And the way the industry and the state has elected to manage and to regulate, if you will, monopolistic situations is through the Public Utility Commission and the Commission sets rates that are presumably reasonable and fair to the parties taking service.

I think when we talk about compressed natural gas vehicles, we have introduced a whole new dimension to competition. Because now what we have is a consuming product or a consuming appliance, if you will, a car or a bus or a truck or whatever, that is capable of moving around. So therefore, the owner of that particular fleet or the owner of that particular vehicle, if he is inclined to do it, can certainly shop around and get the natural gas, compressed natural gas, where it is most cost effective and most convenient for him. So I suggest that once you get a number of natural gas vehicles on the road with a number of filling stations, then you have pretty much blown beyond the competition aspect or the monopolistic aspect of the utility business.

Q I would hope that you and Dan and the other associations would get together because this appears, this could be a large thing and I was thinking about Sears, had three regional offices, three different fleets going around and maybe regional offices all the way in another state. I don't know who, you know, the billing is going to another state and someone is ordering it in one region and then they are getting it up north. And dealing with the PUC, I can see us coming to a head with a major question. I can also see possibly the Committee of Consumer Affairs getting involved in this and I would suggest that you sit down and talk to us. Because don't come to us when other people start having different ideas and you'll start saying wait a minute, wait a minute. I think the time is now to start planning on the different alternatives to be able to sit down and talk with us.

A I think that is good advice and I will take it back.

REPRESENTATIVE PRESTON: Thank you, Mr. Chairman.

CHAIRMAN PETRARCA: Thank you for your testimony.

MR. SMITH: You are quite welcome. Thank you.

CHAIRMAN PETRARCA: The next and last gentleman to speak is Mr. Keith Funk, Funk Water Quality Company, Eagleville, Pennsylvania.

MR. FUNK: Mr. Chairman and House Committee members, I wish to thank you for the invitation to be here. This has been a real educational experience for me. Since I have been involved in natural gas for vehicles for five years, it is a subject dear to my heart. My name is Keith Funk, Jr. and I use the nickname Buzz, I guess some people heard it last night, and I have a franchise for Culligan water products in the greater Philadelphia area.

Culligan Funk has been using natural gas to fuel vehicles for over four years. Initially, we did a lot of -- a year's worth of research and so forth before we got into it and came up with some reasons why we wanted to and followed through with those.

The first of those was the economy of operation. Our experience has demonstrated that we have saved an average of 20 percent. And when we calculate our fuel costs, we calculate in there also the electric to operate the pressure stations. Even with the savings, our fuel economy has stayed the same or, as was said before, on some vehicles, and it seems like a variation of vehicles it improves slightly.

Two, we reduced engine maintenance. We have seven vehicles converted and to date we have no engine repairs on there. And one unit, one of our 1985s now has over 102,000 miles on it. It is not consuming any oil and is still running strong.

One of the problems we have and people in similar industries is finding a lightweight vehicle that can handle some heavy-duty projects, in the eight to 11,000 GVW range. Other people would be like burner repair companies, plumbing contractors, people that need a three-quarter ton or one-ton truck. We experimented with compact trucks and foreign trucks and mini-vans and so forth and they really didn't hold up. We had some disastrous results with diesel engines and small trucks. So now with natural gas, we can still have a heavy-duty truck with heavy-duty brakes and all the equipment we need, but we can get the economy of operation with natural gas.

Number four, our business is water quality. We are not in the gas business, a gas utility. We are involved in water conservation, pollution control and environmental clean-up projects. We are, naturally, concerned about air quality. In a recent seminar, a water quality seminar, in Atlanta, one of the speakers talked about the interlocking relationship between water

and air pollution control problems.

Two areas of concern for our company are, and there is a third one which I didn't have in there but will talk about, there is a long-term payback on our $72,000 investment. After calculating our savings, our total payback for both stations, station and truck conversions was in the 48-month range. This is normally a long period for lightweight vehicles and mechanical equipment. Normally you try to get a payback in a 24 to 36 month range.

The other major concern, which I guess was not brought up this morning, is the down time involved required for Pennsylvania emissions testing, which we have in greater Philadelphia. Since the vehicles operate most of the time, except when they run out of natural gas. They are tuned to perform best on natural gas. However, when they do for emission testing inspections, we have to tune them for gasoline and then after we get them back out of the shop, we have to retune them again back to natural gas. This is inconvenient and adds to down time for vehicles.

The third question we had was sales tax. We got into a review on paying sales tax on compressor stations. We appealed and we lost and we paid six percent sales tax on $42,000. They ruled on that, since it was

used for natural gas, we had to pay sales tax. If it was used to compress water, we would not have had to pay sales tax. I never got a clear reason beyond that. It just didn't seem right for some reason.

Generally, operating our vehicles on natural gas has been a very positive experience and during the four years of operating vehicles, we have not had one hazardous or dangerous or leaky situation. I guess it is now about 400,000 miles. Thank you very much.

CHAIRMAN PETRARCA: Thank you. Any questions? Tom Tigue.

BY REPRESENTATIVE TIGUE:

Q Mr. Funk, you mentioned in your testimony, and it was also in Dr. Mulvin's testimony, that repairs are less, engine repairs. Why is that if it is a combination system?

A Well, mostly you are using natural gas. Ninety percent of the time you are on natural gas. It is cleaner burning. You don't have near the carburetor problems, the cold weather starting problems. If you had a designated vehicle and didn't have to operate on gasoline at all, you could take off your automatic choke. You don't even need one on natural gas. So it is just not having the carbon buildup, not filing plugs, just cleaner oil. We just change the oil once a year out of

habit not for any particular reason. It doesn't get dirty.

CHAIRMAN PETRARCA: Our last question, Sue Germanio from staff.

BY MS. GERMANIO:

Q Addressing your two areas of concern, the long-term payback, 45 to 48 months, that takes into consideration any kind of investment tax credits or depreciation, everything that you take advantage of or what could you take advantage of?

A The initial systems we could get, under federal tax credits, for the first two vehicles we converted. For the compressor station and the last vehicles, the federal tax credits were not available. That had been after the new law. If they had been subject to that, yes, it would make a significant difference. We are depreciating the station and I believe we did set that up on a 36-month period because it is a mechanical piece and it has motors and things that do wear out on it.

Q On the emissions testing, this would probably have to be done at the federal level since we do comply with the federal requirements. Has anyone ever considered an exemption for vehicles that operate on compressed natural gas for a certain percentage of time?

A I believe I was told that the State of Ohio

has an exemption.

Q The State of Ohio. And my last question, I get the feeling you would like the sales tax credit for natural gas compressors?

A Well, I think if it is equipment to operate a business, whether it is related to water or gas, it should be the same.

Q You would like that clarified?

A Yes, ma'am.

MS. GERMANIO: I will say this Governor is not fond of tax credits, but we will see what we can do.

CHAIRMAN PETRARCA: I want to thank you, and for anyone in this audience, who would like to have copies of the bills we have today, we have them up here.

MR. FUNK: Thank you very much.

CHAIRMAN PETRARCA: With that the meeting is adjourned.

(Whereupon at 12:45 p.m. the hearing was adjourned.)

I hereby certify that the proceedings and evidence taken by me in the within matter are fully and accurately indicated in my notes and that this is a true and correct transcript of the same.

Dorothy M. Malone

Dorothy M. Malone, RPR
135 S. Landis Street
Hummelstown, PA 17036

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