NEW JERSEY BOARD OF PUBLIC UTILITIES

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NEW JERSEY ENERGY MASTER PLAN

ALTERNATIVELY FUELED VEHICLES

WORK GROUP

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PRESIDENT SOLOMON: Good afternoon, everyone. I think everybody is here. We have a number of speakers. We are going to receive a presentation today from the New Jersey Energy Master Plan Alternatively Fueled Vehicles Work Group.

Let me just reiterate what I said before: We have a number of speakers signed up. If you are

going to speak, make sure you sign up outside so we know.

If you are speaking today make sure you speak clearly, take your time and address your issues raised in the report. We are going to get a synopsis today, and make sure that your questions are directed to the report, the subject of the report today.

Now, just for your edification, we have two more hearings left, November 7th at 9:30, the Innovative Technology Group, and November 10th at 9:30, the Biomass, I think that's all we have right now, there may be a scheduling conflict.

Chuck Feinberg, who is the Work Group Chair is going to give the presentation as to the nature of the report. We are specifically looking for any suggestions you might have that might assist us in the implementation or the specific contents of

the report that you have in front of you that you think may be inaccurate or need further review or alternative considerations.

Chuck, without further ado, it is all yours.

MR. FEINBERG: President Solomon, Commissioners, thank you, and good afternoon every-one.

The Alternatively Fueled Vehicles Work Group was appointed by the Board and we were tasked with the following four questions:

Within the vehicle categories of freight, mass transit and passenger vehicles, what are the most cost effective and environmentally friendly alternatives?

What are the opportunities and barriers to developing an infrastructureto support various alternative fuel supplies for vehicles?

What should the State fleet be doing with their own fleet?

And what other barriers might exist and what recommendations do we for addressing those barriers?

So I am going to introduce the Work Group and I am going to give some background about the

issues and then I am going to talk about some of the recommendations and conclusions that our Group came up with.

The Work Group members was a good good mix of public and private parties, utilities, private companies, fuel providers, fleet managers.

I will ask that any members of the Work Group that are here to please raise your hands and say hello.

Okay, just to give a little bit more background, my background: I am the Chair of the New Jersey Clean Cities Coalition. The Clean Cities Coalition is a Department of Energy backed program where the US DOE actually provides seed funding for locally based coalitions, and there are about ninety of these coalitions across the country.

Right now the New Jersey Clean Cities Coalition is the only one one based in New Jersey. It started out and received formal designation by the US DOE in 1997, and at that time and for several years after it was actually managed by the Board of Public Utilities.

We incorporated it as a non-profit in 2009, and just this past year we were re-designated for another three years through a formal process of

the DOE..

Our whole mission is the displacement of petroleum in the transportation sector, so for environmental security, energy security, job creation, all of the above, and whatever we can do to accomplish any of those three tenets is what we do.

Our primary activities right now involve a DOE stimulus plan that we have been managing for the past two and-a-half years, and I will talk more about that in a little bit.

We have a Clean Cities Support Program contract with the DOE with various caps which I will also mention more of, and we are participants along with the New Jersey DEP and the Regional Transportation and Climate Initiative on a regional electric vehicle planning grant which was recently awarded.

We recently just received a grant from the EPA Region 2 to replace some of the dirtiest

diesel engines that operate in some of the marine vessels in New York Harbor.

We also participate in a number of work groups, State-wide and regional, including the Renewable Natural Gas Work Group, which is a

separate subcommittee advising the Energy Master Plan. I guess that meeting is the 10th right here.

We also work with the folks in Sustainable Jersey on their Green Fleet Committee.

So the Energy Master Plan, for the first time the State of New Jersey Energy Master Plan actually discusses alternative transportation fuels and the need to address the issues concerned with transportation, and for that I thank and congratulate the Board for including that and for the insight for doing that.

But the consensus of our Work Group is that the discussion of alternative fuels in vehicles needs to be broadened and that concrete steps need to be laid out. Some of this I will speak about today, most of it will need further discussion and planning.

But a little background on the issue: Over the long-term the U.S. has seen a widening gap between domestic production and consumption of petroleum. It is important to get all this out. The U.S. consumed about twenty million barrels of petroleum per day in 2010, making us the world's largest consumer of petroleum, and we were third in crude oil production at only about five and-a-half

million barrels a day.

Even with that, as you can see, the dependence on imported oil has continued to decline and has been trending down; that's probably as a result of the economy more than anything else.

You see with liquid fuel--- sorry--with liquid fuels the consumption from the transportation sector is the largest there of consumption.

And again, in 2009 U.S. pertroleum was about, fifty percent of it was imported, fifty percent of it was domestic.

Of the amount that was imported, about half of it came from the Western Hemisphere and about eighteen percent of our imports come from Persian Gulf countries, and the two single largest importers into the United States are Canada and Saudi Arabia.

Just a little bit more on the background. The U.S., five percent of the world's population, twenty-five percent of the consumption of petroleum.

And increasingly we are competing for this resource with countries like China and India. Over the past fifteen years India, for example, has doubled the amount of oil that they import on an annual basis.

So recognizing this, the Energy Master Plan discusses the fact that there are many options

and recognizes the need and the benefits of moving toward these options and encouraging these options.

And this is not good for the environmental issues and economic security, it's about domestic jobs and the Energy Master Plan actually recognizes that.

So there are many options. One of the primary tasks of our Work Group was to look at those options. While the draft EMP dIscusses some of these options, our Group's conclusion is that a broader range of options exists and these should all be included in the Energy Master Plan.

These options fit about three general categories, those of you who might have been in the environmental industry over the years are probably familiar with the concept here, it's the same thing with energy and the same thing with transportation fuels: replace, reduce and eliminate, real simple, I don't need to read that slide.

But you take the beta as to knowledge of energy efficiency and demand-response; same concept, different application.

Again, the Energy Master Plan, another

quote here, Fuel source options will vary by the nature of the transportation type. That's important to realize and it is important to realize that there are many different options, and those options include natural gas and electricity but there is also a broader set of options, and that's what this slide is intended to show.

While encouraging the deployment and use of alternative fuels is very important, the wide-spread use of them will take time, so it is also important to keep in mind the ongoing need for programs that support fuel economy, for instance, in idle reduction as well as trip eliminations and lessening the vehicle miles travelled. Those are all part of the picture and they all need to be included in this discussion.

So as I mentioned, the Energy Master Plan specifically mentions compressed natural gas, electric vehicles and to a lesser extent biodiesel, but the entire portfolio of what I just presented should be discussed.

In reference to the electric vehicle industry, I just want to make the point, I think most of you are probably aware of this, but available now and within the coming years are more

than thirty different models of electric vehicles, and those are coming in all shapes and sizes, all vehicle classes and for all different types of uses.

Here is a sampling of some of the ones that are on the horizon or are actually here now, some of these are actually operating in New Jersey right now, and one of the concepts that we included in our report and in discussions in our Work Group was the urban delivery vans and how electrification of those types of uses was something that really needs to be looked at strongly.

But we have our work cut out for us. Right now, this is the listing of the current infrastructure for alternative fuels in the State of New Jersey. One of my responsibilities as Clean Cities Coordinator is to track information such as this and report it to the DOE, and they monitor it on their Website and make it available, so if anybody is aware of other ones that might not have made it to my list please let me know.

Obviously, we have a lot of work to do. Most of the compressed natural gas and propane, for example, are fleet based, they may or may not be open to the public. As you see, of the twenty locations, only three of them are open to the public

right now, but we are working to change that and expand those options.

So that the Energy Master Plan needs somebody to lay out some creative ways on how to help facilitate and accelerate the development of the infrastructure for alternative fuels.

Before we get into that, I will just talk about some of the tools that are available right now. The information that was on the previous slide was selected by the Clean Cities Coordinators across the country and maintained by the DOE in the data they have and they have a locator available.

So with this tool you can put in your zip code, for example, and get a listing of every alternative fuel station that is within your zip code. You can sort it by fuel type and/or by

location, and you can also, in the lower right there, you can plan your route so that you know every station along the way so when you do need fuel you will be able to locate a station, and it has all sorts of information including what credit cards they take, hours of operation, whether it is public or private, that sort of thing.

So these tools do exist and they are getting more and more robust as the infrastructure

develops.

A similar concept is the truck-stop electrification locator, so that a trucking fleet can locate every electrified truck-stop along their route and in their territory. These are great tools for folks that do not have centralized fueling at their depot.

Okay, so the draft Energy Master Plan recognizes that we need programs going forward to encourage the use of alternative fuels and the associated infrastructure. Right now the draft specifically talks about CNG but, again, my contention is we need to broaden that to other fuels as well because some fuels will work better with different applications and different fleet usage.

So some of our first recommendations, one of the big challenges as to the development of in infrastructure for alternative fuels and for fleets to transition to alternative fuels is initial cost. Many of these fuels right now and many more in the

future will provide a reasonable payback over the life-cycle of the vehicle, but you still need to come up with that initial cost, and that initial cost has been a hurdle and probably will continue to be a hurdle, so our Work Group is suggesting that

the State look into creating some sort of revolving loan fund that will help fleets, public and private, get over that initial cost and pay back the loan over the savings over the life-cycle of those vehicles. That's one big effort I think, we are not talking about grants right now, this is something that will encourage and make that capital available to the fleets that are interested in doing it.

We also need to be more creative in finding ways to leverage private capital to help public/private partnerships; by that I mean there are several major fuel providers out there, infrastructure providers, I should say, that in exchange for a long-term fuel purchase agreement, they will put the infrastructure in at no cost to the fleet owner.

To me, this is a great way to get the infrastructure out there, I think something like that would be a great way for an organization such as New Jersey Transit to look at this, just as an example.

Then involvement of the utilities. Obviously, the utilities right now are more interested in electric vehicles and natural gas than propane or hydrogen or anything else, but they have

a significant role to play in this both from a load response and demand response type situation but also potentially in helping to put in that infrastructure.

One of the questions that were asked of the Work Group is, what could the State do with its own fleet?

So our report states that the State should define specific goals of decreasing emissions of petroleum consumption of the State fleet, we should develop and implement a fleet management and alternative fuels implementation plan, and that plan would look at the specific uses of every vehicle in the fleet and optimize the fleet by reducing them to right sized vehicles, and what I mean by that is often vehicles are replaced with the same type of vehicle because that's how it has always been, but is that type of vehicle, is that class of vehicle really what is necessary to get the job done?

We need an objective view of that, and consider the life-cycle cost of those vehicles and the fuels that they use, not just the initial cost

Leverage the private sector for the infrastructure, reduce vehicle miles traveled.

The measures of accomplishment in meeting

these goals could be the number of gallons of gasoline or diesel that were displaced in that year.

Emissions, it could be based on emissions reduction and also total fuel and operational costs. There are several states that either by executive order or by legislation have initiated these efforts in of the past year or so.

Some of our other recommendations, one of the issues we came across in our Work Group is that New Jersey is only one of only two states that does not define biodiesel in accordance with the ASTM standard. What that could do is lead to biodiesel that does not meet that spec but still meets the definition I believe in the New Jersey Tax Code where it is defined. Bad biodiesel or biodiesel not meeting the spec could be dumped in New Jersey, and we need to be very careful about that.

And I believe there is a speaker from the National biodiesel Board who could expand on that a little bit later.

Another big issue involves something that probably is one of our more precious assets: school busses in New Jersey cannot use compressed natural gas right now even though there is a huge movement across the country and in other states for that to

happen. Apparently the configuration of the fleets in New Jersey is somewhat unique and a bus meeting the New Jersey spec has not been crash tested using CNG. That is something it seems to me that should be easy to address, but I have been trying for two years and haven't gotten very far and I know other people in this room have been dealing with this

issue for a lot longer.

This third bullet here is also significant in that the gas quality in much of the PSE&G territory while perfectly good for standard uses of natural gas, it's not sufficient for compressed natural gas. There are a lot of related issues associated with that, but if we are going to move forward with compressed natural gas in the transportation field, PSE&G has a big territory that this issue has to be dealt with.

There are also some zoning and permitting issues that need to be smoothed out if possible and addressed, there has been some effort on that on electric vehicle charging stations for residential usage, Ken Frank from the DEP has worked very closely with DPA on zoning and with the construction code people there, but we need to look at how we can facilitate and smooth out that process

for the other fuels as well.

We also need to make it easier on the State procurement contracts for municipalities and other public entities to be able to access alternative fuel vehicles and alternative fuels in a competitive and easier way than currently exists and to get those vehicles on the State contracts faster.

Again, look at total cost of ownership rather than low bids.

A couple of more. There are a lot of

regulatory issues that need to be discussed and addressed regarding electric vehicles and electric vehicle infrastructure and whether or not a reseller of electricity would be considered a utility or whether they are providing a service. That needs to be defined in the State of New Jersey and the regulations are needed to cover items like safety, inter-operability, reliability standards and other issues along those lines.

There are some tax issues that need to be discussed and addressed also, whether or not the motor fuel tax or how the motor fuel tax will apply to electric vehicles or to natural gas or propane vehicles needs to be addressed.

And there is also the sales tax exemption. Right now there is a provision in New Jersey that zero emission vehicles are exempt from sales tax. Our Work Group is suggesting that that exemption be expanded to include fossil zero emission vehicles and come up with a mechanism for maybe not zero sales tax but have some sort of sliding scale based on emissions or based on the amount of gasoline that will be used to provide an incentive on that.

That's essentially the recommendations of our Group.

I just want to talk a little bit about the grant that we are managing, it is a public/private partnership. We are putting in six compressed natural gas fueling stations across the State, close to three hundred vehicles, garbage trucks and

shuttle busses, and just this program alone just with the vehicles that are included under this program will displace about two million gallons of petroleum a year.

But we have already seen other fleets in the neighborhoods of these states express interest in converting to so it will significantly expand over time.

So it is a chicken and egg situation. I

would say we are putting in a couple of eggs around the State, now it is time for the chickens to come forward and participate.

This is a list of the entities that are part of the grant right now and here are some of the vehicles that we are talking about. The two in the middle you have probably seen, the Atlantic City Jitney Association, we have transitioned their entire fleet of one hundred and ninety vehicles to compressed natural gas; this is obviously a real showcase for any visitor to Atlantic City.

The one on the left operates out of Newark Airport, this is an entity called The Parking Spot Group, you might have seen some of the construction over there, they are Honor totally redoing all of the off--airport parking and it is now run by a company called The Parking Spot Group, they have several CPN shuttles now and then several of the garbage truck entity.

Here are some of the stations, the one in

the lower left is Waste Management in Camden, which is a public station, but also on the other side of the fence there are eighty-eight time-fill posts there to fill the waste management trucks.

You can't really see it in the picture,

but on the canopy there, the price is one dollar seventy five-nine on a gas gallon equivalent basis so there is some incentive right there.

The upper right is at the Atlantic County Utilities, the upper left is at the Essex County Resource Recovery facility, we will be breaking ground there within the next couple of weeks.

And at the bottom right is the Central Jersey Waste, they have a time-fill station in Trenton.

That's our presentation.

PRESIDENT SOMOMON: Do you want to take the questions?

Are there any questions?

No questions.

Okay, is Nancy Selman here?

Nancy, would you like to speak?

MS. SELMAN: Thank you, President Solomon and Commissioner, for having me here today.

I am Nancy Selman, I am Vice-President of Business Development for a company by the name of Avalence in Connecticut. Avalence is a manufacturer of hydrogen generated by electrolysis and currently we are putting in two hydrogen fueling stations for municipalities, municipal bus fleets

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in Connecticut. Early next year we will be installing a unit at Pearl Harbor in Hawaii.

So my comments are with regard to the hydrogen portion of the subcommittee's recommendations.

Avalence respectfully submits the following comments In response to the recommendations of the Alternatively Fueled Vehicles Subcommittee for the New Jersey Energy Master Plan. The comments include a further recommendation for the immediate development of a detailed plan for the build-out of hydrogen fueling station infrastructure in New Jersey in anticipation of the commercial introduction of fuel cell vehicles to the retail market in 2015.

The Subcommittee's comments open by stating that, " Hydrogen has the potential to revolutionize transportation." This is absolutely true. Hydrogen fuel cells have two time the energy conversion efficiency of the gasoline internal combustion engine (ICE). They use pure hydrogen as fuel, combining it with the oxygen in air to produce elecctricity with water as the only byproduct.

Hydrogen FCs emit no greenhouse gases. UInlike battery-only electric vehicles (BEVs),

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hydrogen fuel cell vehicles (FCVs) have similar refueling time and driving range to the gasoline

internal combustion engine vehicles we drive today. Unlike gasoline hybrids, which have a traditional mechanical drive train plus an electric motor, FCVs have a single electric drivfe train, providing a clear pathway to vehicle cost reduction and cost competitiveness.

Moreover, there are several ways to produce hydrogen fuel. Hyderogen is widely used now in industrial processes in large quantities. The vast majority of that hydrogen is produced from natural gas, which is currently in plentiful supply in the region. Another way to produe hyudrogen fuel is via the process of electrolysis, which uses electricity and water to form pure hydrogen and oxygen as the only byproduct. When solar, wind or other non-fossil power sources are used for electrolysis, a completely sustainable, local renewable and emissions-less hydrogen transportation fuel is produced.

The Subcommittee's comments go on to state that, "While there are currently demonstration vehicles available (at high production cost), hydrogen fuel cell vehicles (FCVs) remain a mid to

long-term alternative due to remaining technical barriers, high costs and fuel cell durability concerns."

While the cost of fuel cell demonstration vehicles is high due to limited production and the developmental cost of the fuel cells, Toyota recently placend the cost of its FCV at $129,000

and is targeting a $50,000 price tag in 2015. Moreover, as stated in a report written by McKinsey for the European Union, "With the demonstration of more than five hundred passenger cars covering fifteen million kilometers and undergoing ninety thousand refuelings, FCVs are now considered to have been comprehensively tested in a customer environment. The result: the focus has now shifted from demonstration to commercial deployment in 2015." (Daimler has recently moved this date up to 2014 in Germany). The only remaining challenge is to build a hydrogen station infrastructure to meet the 2015 date for commerical introduction of hydrogen FCVs.

Germany and Japan have committed to building hydrogen stations for commercial launch of FCVs in 2015. Germany plans a nationwide supply of hydrogen to be developed in time for the planned

roll-out to attrract FCVs to the region, and eventually to link its hydrogen highway with planned developments in neighboring Scandinavia. Japan is committed to building its hydrogen infrastructure and a group of oil and gas companies have announced their intention to build one hundred hydrogen refueling stations in Tokyo and three other cities by 2015.

In the U.S, Hawiii and Southern California also have plans in place for hydrogen infrastructure. The California Energy Commission

(CEC) committed twenty-two million dollars in funding for eleven new stations and station upgrades one year ago, and these stations are beginning to come on-line now. These are in addition to the six hydrogen fueling stations in the Los Angeles area already. The hydrogen communities in New York and Connecticut are each in varying states of drafting infrastructure plans and putting them before their respective Governors.

The Subcommittee's comments go on to note, "A recent study concluded that large-scale use of FCVs is unlikely in the short-term, stating it is highly unlikely that hydrogen FCVs will have significant impacts on LDV (light-duty vehicle)

energy use and CO2 emissions by 2030. However, a number of manufacturers, including Daimler and Honda, are targeting model year 2015 for the introduction of limited numbers of commercially available vehicles."

While it is true that FCVs may not have a significant impact on the market in the immediate future, in a Letter of Understanding issued by leading car manufacturers in Europe in September 2009, the goal was stated to commercialize FCVs by 2015, with hundreds of thousands of vehicles being rolled out world-wide shortly thereafter, assuming sufficient hydrogen refueling infrastructure is in place.

The Subcommittee's comments close by saying, "There are several major suppliers and

vehicle companies based in New Jersey involved with hdyrogen production, distribution and its use as a vehicle fuel. As such, the State has an interest in promoting the further development of hydrogen production pathways that minimize cost, energy use and lifestyle GHG emissions."

FCV manufacturers have demonstrated that they are ready, willing and able to produce vehicles for the retail market in less than three

years time. States who plan hydrogen fueling infrastructure now will enable resident suppliers of vehiclces and fueling to have the first mover advantage in this rapidly evolving industry.

It is respectfully suggested that in order to be ready for this revolution in mobility, New Jersey create a plan for hydrogen fueling infrastructure development. Such a plan should be made in coordination with an organization shch as the New Jersey Clean Energy Coalition, with the input of automotive manufacturers, industrial gas companies, onsite hydrogen production manufacturers, natural gas and electric utilities, universities, government, the renewable energy industry and tradtional fuel suppliers. Ideally this plan will outline and detail where the first stations will be needed, how much they will cost, and what incentives the State should provide for early adopters in this market to build upon Federal alternative fueling infrastructure and vehicle tax

credits..

PRESIDENT SOLOMON: Any questions?

Can you give him a copy of your comments, do you have a copy of your comments?

MS. SELMAN: Yes, ane I submitted them

on-line.

PRESIDENT SOMOMON: Is there any record of the financing methods and cost recovery period for these alternative fuel vehicles or the stations, the cost, the financing method and how long it takes to recover costs, is there anything like that available?

MS. SELMAN: No.

PRESIDENT SOLOMON: If there is could you submit something to us? You can do that on-line.

Ray Kenard?

I guess you are speaking for Mr. Sherman,if you would come up. Are you with Northeast Transportation Electrification Alliance?

MR. KENARD: Yes.

My name is Ray Kenard, I am the Executive Director of the Northeast Transportation Electrification Alliance, Jim Sherman is one of the Director of the Alliance.

Our business is to advocate for electric commercial fleet vehicles, we do not talk about passenger vehicles, our interest is in the large numbers of very large vehicles that you find on the highways every time you drive down the highways.

The Department of Motor Vehicles in New

Jersey actually issues licenses for eight hundred and twenty thousand vans, tractors, trucks, busses, everything other than passenger vehicles, and this is the market we pay attention to.

Rather than making any formal comments, I would just like to comment on a few points that Chuck Feinberg brought up which we think are very pertinent and appropriate.

One of the areas of major interest we view is energy efficiency for the State. CNG vehicles represent a major advancement, but electrically fueled vehicles actually do substantially better because they completely eliminate any carbon fuels at all. The tailpipe emissions are zero, there are actually no tailpipes on the vehicles installed.

The effectiveness of the use of the energy is the point I wanted to make. The Massachusetts Institute of Technology had a symposium about a year ago where they tried to evaluate all of the fuels and what the future of the transportation systems in the United States would be in terms of what the vehicle technology would be.

It identified them and in the case of CNG for one thousand standard cubic feet of compressed natural gas was fed to a vehicle, you would get

something like two hundred and twenty miles. The point about that is that that same quantity of

national gas if it is sent to a power plant and the electricity from the power plant was used for an electric vehicle, that would result in the vehicle traveling four hundred and fifty-seven miles.

The difference is because of the high efficiency of electric motors. An electric motor is eighty to ninety pcercent efficient in converting energy to motion, the internal combustion engine is considerably less, thirty percent efficient.

So when you balance the systems in terms of wheel-to-wheel type evaluations you will find there is a major advantage in using electricity derived from natural gas rather than using natural gas directly.

What we have looked at is the major concentration of vehicles in Northern New Jersey because of the presence of the Port Authority and the concentration of residents in that particular area. The concentration of residents in a forty mile radius from the City of New York is about twenty million people, which is one of the biggest concentrations of people in the United States.

When you look at what you actually have

with all of the people who have mail and food delivered, all of the cargo vans and so forth, you have a tremendous family of vehicles that are on the sort of vehicles Chuck was talking about.

The cargo vans and delivery vehicles represent about fifty percent of the very, very large number of vehicles in Northern New Jersey.

The other fifty percent are the big delivery vehicles that move freight, there are hundreds of millions of tons of freight moved out of the Port Authority every year and it travels no more than thirty miles, a radius of thirty miles from the Port Authority where these cargoes or containers are delivered into about four hundred million square feet of warehouse space.

These are the real big consumers of energy, these are vehicles that get four to five miles per gallon. The average truck travels sixty-three thousand miles a year, and you can calculate how much fuel that represents; we are talking about forty, fifty thousand dollars a year to pay for the vehicle's fuel.

This is the area we focused on. We addressed the Essex County (inaudible) and suggested that what we should be looking at is what we can do

about electrifying' the transportation systems, the commercial fleet transportation systems in the four Counties of Essex, Monmouth, Union and Hudson which are the four Counties that surround the Port Authority facility.

We ended up writing a proposal to the DOT, which is a five year Master Plan for the northern part of New Jersey. We did not get the award. The award went to New York State, which the Transportation and Climate Initiative of the State of New Jersey and New York State are now cooperating

on.

We had a very nice commentary out of the Department of Energy but we were talking about a very small area, and New York City is a much bigger area and more concentrated area than what we are talking about here in New Jersey.

However, out of this effort we marshalled the resources to deal with questions of the transportation grid, we marshalled the resources of Public Service for local distribution systems, Verizon for maintenance vans, United Parcel Service for delivery vehicles, and a number of others, we all cooperated in preparing this particular proposal, and that resulted in our identifying the

need to repower cargo vans, which is exactly what Chuck was speaking about a moment ago, and we presented it to the City of Newark, Essex County, the concept of doing a repowering facility for repowering cargo vans, Ford and General Motors cargo vans.

As a result of this effort, we have a tentative commitment from Verizon and Public Service, the two of them together will have five hundred of their vehicles, of their cargo vans, of their maintenance vans of their service vans, trucks retrofitted in this facility in Newark, and we are actually pursuing that.

The next step is to provide for Verizon and Public Service a test vehicle, a sample vehicle that they can drive for three, four, five, six

months and determine if it satisfies their needs, and if we can satisfy them as to the manufacturing cost we will have more than five hundred vehicles for this facility.

And a very important thing in this whole situation is that the cost of these vehicles is very high, and one of the reasons that they are very high is because they are hand built. We are focusing on the idea of getting commitments for fleets of

vehicles, hundreds of vehicles.

The other activity in the area, United Parcel Service has a distribution center in Secaucus which has three hundred medium duty trucks that they use for delivery purposes.

United Parcel Service last August, August of this year, purchased one hundred medium duty body electric trucks, and those trucks are used in California.

When we approached United Parcel Service about cooperating with us in Essex County, they were very interested in this because they said most of that work was in California but they really wanted to do some work on the East Coast but they didn't see much activity here.

United Parcel Service has agreed that they will convert all three hundred vehicles at the Secaucus Distribution Center if we are able to develop funding that is necessary for the incremental cost required to do this..

In addition to the three hundred medium duty trucks that you United Parcel Service has in Secaucus they have another three hundred and sixty-one in three different depots in New York City, and the New York State Research and

Development Authority has funding for the incremental cost of these vehicles, and we have submitted a proposal.

So I what I am trying to deliver to you is the fact that we believe and in fact the Massachusetts Institute of Technology symposium believes that the vehicle of the future is electric and that innovations will occur that will both cause the cost of the vehicles to go down and fuel efficiency to improve in many ways.

We are already beginning to see innovative changes occur. Ford has an E-250 cargo van that has been repowered with electricity, this vehicle can provide frequency regulation service and stabilize the grid. We will have that vehicle in Newark and Trenton sometime in December and it will be put on a demonstration of this vehicle's fine frequency regulation.

Much of the development work on this was done by the University of Delaware, they have been doing this since the year 2008 with a series of vehicles that are able to earn twenty five hundred dollars a year just by being plugged in. That's one of the innovative things that is happening and we believe that this technology applies to larger

capacity vehicles.

The latest thing that we are doing is we have had identified to us that it is available wireless charging technology. You can charge these vehicles without chargers, without wires and without cables, without having to plug them in. We are working with Siemens on this. There are five vehicles in Berlin operating with that technology at the present time.

We are in the process of preparing the technical data for submission to the City of New York where the application is for the City's fleet of twenty-six thousand vehicles, we also will be proposing, we haven't yet done it but we have a meeting scheduled with Port Authority personnel to talk about airport airport shuttle busses where a shuttle bus can be recharged by a sort of continuous loop, hotel shuttle buses.

One of the ancillary advantages of wireless technology is you can use it for something like the shuttle bus, you don't need a big battery that you recharge. Every time it stops to pick up a passenger it is recharged.

I think that covers pretty much of what I wanted to say. I think we have some very, very

exciting days in learning about this new technology. This is innovative, this will create jobs. If we

are successful in getting funding for the UPS three hundred vehicle medium duty truck project, we are tyring to pursue the funding for that with the Federal government, if we get that funding for three hundred vehicles in Newark it would justify Electric Vehicle International building a vehicle manufacturing facility in New Jersey.

So that is manufacturing technology that will evole, jobs will evolve out of this and a whole new industry, it requires maintenance people, service people, suppliers, and so it has potentially a very major impact.

PRESIDENT SOLOMON: Before you leave, I don't know if there are any questions, what is the idea of wireless chargers?

MR. KENARD: Wireless chargers, there is a technology called inductive magnetic resonance, you have two coils, one coil is in the pavement and one coil is in the truck. This coil generates a magnetic field, that magnetic flow, flux, goes to the other coil, the flow that then generates electricity and charges the vehicle.

PRESIDENT SOMOMON: So essentially at

every stopping point you will find a coil for like a bus, a public transit bus, and it would be charging as it goes?

MR. KINARD: That's right. And It has the other advantage, you can put in a system where you don't have to have a credit card, you would be identified electronically as your vehicle came up

and get charged for the power.

We think that the biggest operation for that at least in the near future would be in the fleet vehicles because public vehicles don't travel routes, they travel in random areas, but fleet vehicles start at the same place every night and end up in the same place every day.

Even without wireless, all the UPS trucks have on-board chargers, UPS drives their trucks up to the docks and as they are loading and unloading merchandise they plug their truck in and they charge their trucks.

So there are a lot of things happening and people are just beginning to recognize some of the things.

PRESIDENT SOLOMON: Thank you.

Laura Dooley, Alliance Automobile Manufacturers.

MS. DOOLEY: Good afternoon.

My name is Laura Dooley, I am the Director of State Affairs for the Alliance of Automobile Manufacturers.

The Alliance is a trade association of twelve of the world's leading passenger car and light truck manufacturers, we represent BMW, Chrysler, Ford, General Motors, Jaguar-Land Rover, Mazda, Mercedes, Porsche, Toyota, Volkswagen and Volvo, and four of these companies have their North Americdan headquarters New Jersey.

We thank you very much for the opportunity to be here today to comment on the Energy Master Plan. The Alliance is very supportive of the plan's goal as to maximizing criteria in greenhouse gas emissions reduction through promoting the use of alternative fuels and advanced technology vehicles.

We are also very supportive of the fuel neutral, technology neutral approach that is laid out in this plan.

Vehicle manufacturers spend a significant amount of money on research and development, on a whole host of technologies to achieve goals to make safer, cleaner and even efficient vehicles.

We strongly believe that public policy

that supports a diverse portfolio of advanced technologies are the best way to bring these technologies to the market and encourage consumer acceptance of the technology that works best for them.

Alternatively, the Alliance opposes a technology mandate that is a wrong public policy choice for the State, for businesses and for consumers.

New Jersey has a long-standing California policy on zero emission vehicle mandate, It is a battery, electric and fuel cell hydrogen fuel cell mandate, that regardless of demand or the necessary infrastructure to support the vehicle, manufacturers must deliver for sale specific quotas on electric vehicles and hydrogen fuel cell vehicles in New

Jersey and other similar states that follow the California plan. This policy was adopted in New Jersey several years ago as a concurrence of the California low emission vehicle program.

We strongly believe that any investigation of better alternative fueled vehicles or advanced technology vehicles in the State must include a throrough review of this mandate to determine if that type of policy to mandate certain technolgies

is consistent and complementary of the State's stated goal in this plan of moving forward in a technology neutral and a fuel neutral path.

That mandate is a moving target for vehicle manufacturers, it has been since the day it was conceived in California, it changed initially from an electric vehicle mandate to a fuel cell mandate to a combination of electric vehicle and fuel cell mandate.

And this change is very much at the whim of California. California deems it to be technologically feasible and desirable, but it is not relevant to what is desirable in the market, what manufacturers can put forward and what consumers are asking for or even what the State of New Jersey wants, yet New Jersey is following this.

We strongly encourage New Jersey to take the opportunity in conjunction with this plan to reevaluate this mandate in this report.

With respect to electric vehicles, we

heard some great things earlier from some of the speakers about the number of models of electric vehicles that are coming to market. Our industry is very excited about offering those for sale in the State of New Jersey.

However, we have to question whether or not it is appropriate to mandate these technologies when we are finding through processes like this that there are still significant hurdles to consumers accessing these technologies on a wide-spread basis.

According to the report that was put forward, there are still significant barriers that remain to wide-spread electric vehicle adoption, most of these barriers have to do with infrastructure and its development moving slowly in the State of New Jersey.

Currently we have thirteen electric vehicle charging stations in New Jersey. That's not nearly enough to support the mandate that manufacturers have for delivering these cars for sale.

With respect to hydrogen fuel cell vehicles, it becomes an even more difficult hurdle. There are various statements about putting the fuel cell vehicles in the market when they are commercially ready, but currently, as we heard, there are zero charging stations.

We have to ask ourselves because it is important if it makes sense to mandate a technology

that we can't actually support the infrastructure necessary for it.

Both of these technologies are critical components of our transportation, and the Alliance is very supportive of getting these cars onto the market; we just want to make sure that the State sets policies for building the infrastructure necessary to support them when they come onto the market.

Manufacturers continue to innovate and bring forward technological advances with respect to our products. Vehicles are ninety- nine percent cleaner than they were thirty years ago, and we continue to find ways to make them even cleaner.

With respect to carbon and greenhouse gas emissions, we want to make mention of the historic national program that exists between the US EPA, the National Highway Traffic Safety Administration, the Obama administration, the auto industry and environmentalists that will result in a forty percent nation-wide fuel economy average increase to thirty-five and-a-half miles per gallon by 2016, that will equate to about a thirty percent reduction in greenhouse gas emission nation-wide?

This program is being extended through the

year 2025 and we anticipate that we will be hitting a new fuel economy average of fifty four and-a-half

miles per gallon by that year. A lot of that will be due to advanced electric vehicles coming onto the market.

I am encouraged by New Jersey and their strong focus on infrastructure development and we hope the State continues down this path to support a diverse portfolio of technologies in alternative fuels, but we also ask the State to take this opportunity to review and potentially repeal any conflicting policies that are on the books that may stop the progress that's being made.

Thank you.

PRESIDENT SOLOMON: Thank you.

Any questions?

Ray Albrecht?

MR. ALBRECHT: My name is Ray Albrecht, technical representative for the National Biodiesel Board.

I am from Upstate New York, some of you may know me, I spent over thirty years at the New York State Energy Research and Development Authority as the project manager for alternative fueled research, partly for vehicles but mostly for heating

applications, which is related to transportation in terms of the types of fuels we have talked about. I appreciate the opportunity to speak for a few moments here.

The National Biodiesel Board is the national trade association for the biodiesel industry, which includes biodiesel producers, folks

from the agricultural community as well as including fleet vehicle operators, many of whom are also interested in other energy types that we are hearing about today.

I think overall the viewpoint of the National Biodiesel Board is that we hope that all of the alternative fuel technology succeeds in the marketplace, we are not here to say that biodiesel is better than natural gas or electric or hydrogen fuel cells or any other options, we really think it will take a broad array of technology to get to where we need to be in order to solve the climate change problem which is in all of our mutual intereste here.

We want to express appreciation to the State of New Jersey for giving consideration to biodiesel in your Energy Master Plan planning efforts here.

One of the major advantages of biodiesel is that up to about a B-20 concentration it is essentially a drop in fuel from the end user's perspective. You have very little in the way of capital cost that is required in a diesel powered truck or any other diesel powered application to use biodiesel, so that's one advantage.

The other thing is that in terms of comparison with energy usage, greenhouse gas emissions compared to traditional petroleum, biodiesel does achieve well over eighty percent of

CO2 or greenhouse gas emissions compared to petroleum, and that's where we need to be for the long-term, it is not just a bridge, it is really one of the end points of our collective efforts here.

Most typically, we speak of biodiesel achieving over eighty or it is now eighty five, eighty six percent greenhouse gas emission savings compared to traditional diesel fuel but we also need to remember that compared to natural gas it achieved over seventy percent greenhouse gas savings, and that is an important factor to be taken into account.

What are the issues that might be barriers

to biodiesel application here in the Northeast? And I will address these head-on.

The topic of sustainability, food versus fuel, has been very, very controversial over the last couple of years as we have seen commodity price volatility in the markplace. The essential point that I would make here is that we don't have to look at energy cost production as being a food versus fuel issue but, rather, with smart agriculture, with innovation, which is well underway now in all of the agricultural research organizations and universities across the nation, that we can have food and fuel.

By this I mean increasing yields of all crops with lower inputs of energy, with smarter farming and less fertilizing, smarter application of fertilizer, and also some new ways of using our

agricultural land such as double cropping, planting two crops side-y-side literally, and then also developing the huge potential that exists with winter cover-cropping even here in the Northeast where we have cold winters.

For example, camelina, which is a very good oil based seed, can be planted in the fall and harvested in the late spring, very early summer, prior to the traditional seeding dates for other

more traditional crops.

So the National Biodiesel Board is really undertaking a huge task in trying to educate the public, trying to make it an industry at-large about really what the potential is for the future with energy crops.

The other point is our production, and I speak here for myself; even prior to my time at NYSERDA I was a foreign aid worker in East Africa, northeast of Kenya near the Somalia Republic, I spent several years there and became intimately involved with Third World agriculture.

Some of the most exciting upcoming sources of feed stock bio-fuel production actually is occurring in the Third World areas where these types of plants such as sulphur oil and other plants are now coming on strongly mostly with support from the United Nations.

So there is a huge potential to not just reduce emissions into the environment and sending

more money to folks who are perhaps not so friendly to us but also to encourage international economic development, especially in the lower twenty percent of supply.

In terms of recommendations, the point

that Chuck made about financial assistance, we fully support efforts to provide assistance.

What really works best I think in this tough economic environment we are in would be low interest rate revolving type of loan funds, especially for smaller businesses where capital investment is either very tight or non-existent in today's banking environment.

We also believe that education is important, and I think a focus on commercial-industrial end-user customers as well as the industry partners such as the fuel terminals would be a valuable task for the State of New Jersey to undertake.

Back to the issue of feed stock for production. We would strongly encourage a collaborative, an energy industry and the agricultural industry collaboration here in New Jersey in order to learn more and to implement the technological innovations in agricultural production; I think that would be key to really make this a true industry and agricultural partnership.

Lastly, New Jersey is the last of the forty-eight Continental States to not have standard biodiesel fuel quality limits, the ASPM-6751

standard. This is really a living document that has a long list of physical and chemical property standards for biodiesel. The purpose of this is to really insure the equipment manufacturers and the end-users, the owners of the vehicles, that they will achieve the performance and the long-term service life of the equipment that they need in order to feel confident about using biodiesel.

It is really difficult to underestimate the importance of fuel quality standards, we don't want to be the only state in the nation that does not have a fuel quality standard and if we can offer you any help in implementing that fuel quality standard we can have some discussion.

Thank you.

PRESIDENT SOLOMON: Thank you.

Sal Risalvato, New Jersey-C-Store-Automotive Association; is that right?

MR. RISALVATO: Yes, it is, formerly the New Jersey Gasoline Retailers Association.

My organization represents the gasoline retailers in the State of New Jersey, and I would like to commend this Committee for their work, for this report, I would like to congratulate Chuck on

his efforts and his fine work.

And there is an awful lot here that has

merit, that needs to be moved forward on and a bit to be expanded on.

There are a few things here that I do take a little bit of issue with.

The one thing that has come up in this report and has come up repeatedly today is the word "infrastructure." My members are the infrastructure. In New Jersey we have about twenty five hundred gasoline retail diesel fuel outlets open to the public and also to fleets.

I agree, fleets are the way to go, and we have talked about fleets that have public dispensing facilities. However, my members provide extremely very public dispensing facilities that are also open to fleets.

I agree, we need to have some kind of a marriage here. What I think this Committee needs to do, the State of New Jersey needs to do, is to act as somewhat of a matchmaker and begin to marry those fleets with the retail locations that already exist in a strategic plan geographically around the State so that we can get the best corridor possible that will include both fleets and the average motorist.

We have a tag-line for our organization, that we serve the small businesses that serve the motorists that use gasoline, diesel, hopefully electric in a very large and oncoming way, propane, natural gas in several forms, ethanol and all kinds of gasoline blended with ethanol.

The one issue that I take with this

report, and I thank the lady from Connecticut, today, and that is hydrogen.

This report was very clear and very accurate when it talked about the large role that hydrogen should play and will play in our future. However, my disagreement comes in the timetable. I think we need to be extremely aggressive in moving hydrogen into the marketplace and be a player with natural gas and propane that will be the short-term solution because they are abundant.

We are all here today because we need a solution to an energy problem, we need a solution to an environment problem, but we also need a solution to an economic problem, and economics is what will dictate this whole thing.

I was in the service-station business back in 1978, I owned an Exxon Gas Station, I was part of the gas lines in 1979, I got involved with alcoholic

fuel back then.

Now, it has come a long long way since then, I had high hopes for it and I know we can debate where ethanol stands in terms of the environment and food supply and all those other things that are pro's and con's; this Committee is not here to debate that.

I believe that we need to look at every single one of these components, not just in an abundant fuel but in a renewable fuel. Ethanol is totally renewable. I think there is an

infrastructure in place right now, certainly through my membership, that can easily accommodate expanded use of ethanol, EH5 and especially with more flexed fuel vehicles coming onto the marketplace, so we need to put an emphasis on that; that infrastructure is just about automatic.

In terms of electric, yes, I was surprised, Mr. President, that you weren't aware of the wireless charging. I want to get my members involved in this because it is just a natural that their customers that fill up with gasoline and diesel should be charging with electricty.

I have been trying to drum into my members' heads for the last few years that they are

not in the gasoline and diesel business, they are not in the petroleum business, they are in the transportation energy business, and if electricity is going to be that transportation energy then they need to sell it.

Hydrogen, they will need to sell it. I have already started looking into how we can start to get some hydrogen facilities around the State.

Propane and natural gas is an easy match with my members, those that have the available properties can easily install facilities that dispense propane and natural gas to fleets and to customers.

Imagine when we marry fleets with the available facilities that exist now, the infrastructure that exists now, and customers are

sitting at the gas pump and they are watching an alternate fuel being dispensed, they are automatically going to be doing calculations in their heads: how does it save them money?

The economic leg is going to play a big role in what customers will do. We do need to start with the fleets, we need to marry those fleets with the existing infrastructure, use it to promote to the general public as these technologies become

available and are more prevalent as hydrogen, propane and natural gas, the motoring public is going to start to adapt; economics is going to dictate that.

Thirty years ago this discussion couldn't take place much. Today we are closer economically in all of these technologies and we compare it to gasoline, diesel in terms of the cost and the consumption. We need to be able to make it so it is available.

My members provide that infrastructure.

This body needs to work as the matchmaker to match those people up with the existing facilities. I pledge an active role in that capacity, to make that happen.

PRESIDENT SOMOMON: I really just have one question.

Do you have an inventory of sites or stations that have available facilities, for example, for natural gas, I assume they all have

electric charging capability, but do you have an inventory of those stations? Because if we know that they are dotted around the State and they have available natural gas, for example, CNG becomes the immediate less costly option.

MR. RISALVATO: An inventory where these facilities exist?

PRESIDENT SOLOMON: The stations that exist that have access to natural gas at their own sites?

MR. RISALVATO: I do not, but I don't think that will be difficult to obtain.

PRESIDENT SOLOMON: That would be very helpful, to know how many there are, where they are.

MR. RISALVATO: As was stated earlier, I do believe that those that sell propane and natural gas, that they would be willing to get all these things set up.

At one point I went into the propane business, I had a company that I loved, they came in and they set up a propane dispenser with which you could barbeque but it was not for use in vehicles.

PRESIDENT SOLOMON: It would be very helpful to have that list of existing facilities that have access to those resources.

MR. RISALVATO: I am beginning to get into all these things with my members, so that is something I will make note of and see what I can do to start accumulating that.

PRESIDENT SOLOMON: Thank you.

Any questions?
Mention your name, if you would.
MR. POMEROY: Ted Pomeroy.
In looking around the sites, particularly for compressed natural gas fueling sites, the level of complexity comes on two levels: One is the available pressure within the pipeline at the street and the other is the quality of the methane.
The quality of the methane comes up in the PSE&G service area, but I find in working with local distribution company executives that many times a question comes up, do we have the right kind of service, the right kind of pressure? Then a phone call has to be placed to a local engineer. There is no inventory of the pressure within their service territory.
PRESIDENT SOLOMON: We can certainly take a look at it. Let's figure out what we've got in place.
Thank you very much.
Jeff, Titttel?
MR. TITTEL: Thank you.
I just wanted to talk about a couple of different parts of the transportation alternative fuel report where we have concern.

We believe overall that the report should really be looking more toward the future and not

just reporting on what we have. We know where we have electric vehicle charging stations; the question is, where do we need them and how do we get there?

I think that's the important part because New Jersey is part of the California system and we will be needing to promote more electric vehicles. There are a lot of electric vehicles coming on-line every day, there are more than thirteen of them that will be out as pure plug-ins within the next year, everything from the Mitsubish I to an Edsal sedan, plug-in hybrids, the fastest car on the market is the (inaudible) sports car, and with the Governor's proposal for having a Grand Prix in the Palisades it would be kind of nice to see alternatively fueled vehicles racing some Formula I cars, It might be nice to have like a Green Derby or Green 500.

So New Jersey has always been in the forefront in the auto industry. My dad worked at GM in Linden for many years.

We have the ability here, we have companies in New Jersey that make fuel cells, BASF

has a facility up in Franklin Township. We have companies working on fuel cell cars here, we are the top innovator in the country and one of the best.

And we need to release some of this innovation, and unfortunately I don't think this plan does enough to do that.

We need to develop a plan to figure out

where and how we are going to grow our electric vehicle fleet, how we are going to encourage more residential or greater use of electric vehicles, and then how we put it together.

We have New Jersey companies that are out there already, NRG headquartered in Princeton is building a fleet of electric vehicles charging stations in Houston, of all places. 7/11, we have plenty of 7/11's in New Jersey.

There are other companies that are based here who are working on similar things.

Quite frankly, there is legislation that is currently stuck in the State House that could help, helping to fund or build charging stations along the Parkway and Turnpike rest areas, coming up with incentives for shopping centers and others to put in electric vehicle charging stations.

But there is also a free market that wants

to do it if they see there is money involved. We need to put in rules and regulations to encourage that because once people go to shop, they will be able to plug in their cars, and that wil encourage them to maybe stay a little longer and buy a few more products, and I think a lot of commercial entities are looking at that, so we have plenty of places to do this and I think that we ought to be embracing that.

I don't think this plan, I see more '72 Dodge Darts than brand new Priuses, and I think we

need to come up with a plan and figure out how to pay for it.

One of the things we could look at as we move away from some of our other programs that have worked on renewable energy, we could use some of that funding, SBC, to help build charging stations.

Another important part of that is to tie the charging stations to alternative energy.

If you go to Santa Monica, at their Civic Plaza they actually have solar panels that are the shape of the roofs of cars and plug-in stations below, and they have solar panels on their parking decks for people who go into the Civic Plaza.

We can tie those together because having

clean electric vehicles and getting in fuel from dirty coal doesn't make sense, but if we can tie it to renewable energy in New Jersey's Clean Power Program it will actually help these stations work better and with much more efficiency for the environment.

Another concern that we have, and I know that the BPU is not the DOT, and part of the problem is that we have a DOT, Department of Traffic, that really hasn't changed much under many different administrations, they are still kind of stuck in the Robert Moses school of transportation.

But one of the things we should be looking at is not only the expansion of mass transit, there are many good projects that are out there that are kind of stuck right now, like the MOM (phonetic)

Line, like the northern branch in Bergen County, like the expansion of the Bergen-Hudson Light Rail or South Jersey Light Rail or many other projects that need be to be considered as part of our transportation plan because, quite frankly, developing more mass transit is part of it, increasing bus service in certain areas and having clean busses that are either electric hybrid or compressed natural gas should be part of that.

An important part of all this which this State has fallen completely flat on is trip reduction. Many states have done a really good job on this, California has, one, to help save fuel, two, it helps on pollution, and, three, it enhances capacity on our roads and bridges.

I have a good friend of mine who lives in Pasadena in Southern California, and the company he works for is in Orange County. He has a CNG van that he picks up eight of his co-workers with and all nine of them drive down to work everyday, one, taking some traffic of 405, but more importantly he doesn't have to have a second car. He saves money, the company gets incentives to do it.

There are ways to help companies to pay for these kinds of projects and you get cleaner air and get more cars off the road.

They have a pool car for people who get struck late at work or have to leave for a family emergency, and part of it is paid for by something

called cash-out parking where the owners of property who help pay for these kind of systems can develop other things on their land.

In Orange County, they use part of the property to put in car-bus or a strip mall on a

piece of their property and the extra money they get helps pay for it.

Some companies in California and Massachusetts put a small fee on traditional parking, if you bring your car to work you help subsidize mass transit, so there are ways of doing it without being unduly burdensome and this naturally helps create new businesses of all kinds.

We also believe quite frankly and strongly that ethanol is not the way to go at all. We believe that ethanol increases pollution, especially ground level ozone because it evaporates at very low temperatures in the summertime, we also believe that you don't get the same amount of energy out of a gallon of ethanol than a gallon of gasoline.

The whole issue of food and fuel is a very serious one, It is actually bad for the environment overall because of the air quality impact, and for some bio products as well, there are some that come from waste oils and others that work well, there are others where it doesn't make sense.

There is other research going on, whether it's sedge grass or algae that we should be looking at instead of promoting taking our most productive farm fuels and turning them into that.

We also believe quite strongly in natural gas. We think that natural gas is a gas fuel but also in the longer term not only is CNG and propane very important for busses and trucks and fleets, especially in urban areas that have high levels of air pollution already, but there is actually technology out there where you could run a fuel cell and get the hydrogen from CNG or propane to run a fuel cell in an electric motor.

We think that there is a lot of research that needs to be done but it is also important, I have seen In California quite a few charging stations that are very well used by a lot of cars, you see everything from Volkswagens and Toyotas using them to UPS vehicles, so it has a lot of potential.

We also think that there are a couple of things missing that we should be looking at like low carbon fuel standards to help lower carbon in our fuels, and I know New Jersey intends to work with other states on that, but it really will take a Federal initiative.

And simple things, like there is also tire standards that actually have tires will help lower the amount of fuel use by about five percent, help

to make sure that people's cars are properly tuned up and oil changed regularly is also a way of

lowering pollution and saving fuel.

There are a lot of big steps we can do and a lot of small steps. I think this plan has some positives in it, I think it identifies some areas that are very important for our future, but I think that areas need to be expanded: how do we come up and pay for that expanded electrical charging network that we need and how do we do the same with CNG?

I think that there are tools out there and methods out there to get it done. Together we can move this State forward where we won't have to be stuck in traffic and breathing in fumes like we currently do, that we can actually have a greener highway system and getting around the State that will produce a lot less pollution, create a whole new area for jobs and economic activity while making the planet a lot more safer and secure.

PRESIDENT SOLOMON: Thank you, and I will be calling the Governor in about a minute because I am going to tell how the Sierra Club is going to sponsor the Green Grand Prix.

You will all forgive me if I step out to

do a conference call,Commissioner Asselta will take care of this for me and I will come back and close up, and I ill have a chance to read the transcript, unless you want to waive, Mr. Kydd.

MR. KYDD: My name is Paul Kydd, the company is Partnership 1, which converts pick-up trucks to plug-in hybrids, and I would like to

second the Sierra Club in urging the working Group to take a more forward-looking view, not of the situation we have now but of the situation we might have in the future, and not too far in the future.

We have thirty different kinds of electric vehicles commercially being offered in the next couple years and the projections are that a lot of them are going to be sold, and it doesn't take very many to make an electric storage capacity that is big in electric utility terms, a million vehicles at 20 kilowatts each is 2000 megawatts.

So there is a big opporunity here for integration of the transportation energy supply and the electric utility industry, and it is going to be a revolutionary change. The 21st Century is going to be different and there are some big opportunities for revenue generation for somebody.

It was mentioned by the gentleman from the

Northeast here that electric vehicles can can supply regulation services to the electric utility industry by virtue of having a big battery storing a whole lot of electric energy available very quickly, and it can either absorb energy from the system or deliver it under wireless control.

So the wireless technology is here now, the storage capacity will be here very soon, and there is a big incentive to put the two together and make a new electric utility system that can absorb a whole bunch of renewables which need storage because

the wind doesn't always blow and the sun doesn't always shine.

And so my recommendation is that the Working Group try to study what is going to be possible in the future and how do we get from here to there.

For example, it may be that the easiest way to connect the vehicle to the utilities to provide these services is by a Level 3 charger, a direct DC link with high current to the utilities, and if that is true then there is a major incentive to encourage people who are buying all these electric vehicles to buy them with a Level 3 option, which costs them some money and it may be an

advantage.

So the bottom line here is, I am encouraging Chuck to take a more forward-looking view of what might be possible in the future, not so much what is available now but what it could lead to and the incentives that are available to finance it, to see how we can get from here to where we could be, which would be much more favorable.

COMMISSIONER FOX: You were saying storage is going to be here soon?

MR. KYDD: Yes.

COMMISSIONER FOX: Where do you get that from?

MR. KYDD: The electric vehicles, if you have thousands, hundreds of thousands--

COMMISSIONER FOX: That's not going to be

here by tomorrow.

MR. KYDD: You have got big storage.

COMMISSIONER ASSELTA: Anyone else that maybe did not sign up that wishes to express an opinion?

COMISSIONER FOX: May I ask some questions?

COMMISSIONER ASSELTA: Sure.

COMMISSIONER FOX: I have some questions

but I didn't want to ask them then because I wanted to hear everyone else.

Did you guys get into at all the issue of electric vehicle charging costs, the peak usage versus the nighttime, who pays, and all that?

MR. FEINBERG: Yes, we talked about the full range of things. I just whispered to Marybeth if she could set the record straight about what the Task Force was asked to do.

MS. BRENNER: We were very specific as to what we were asked to do, so we just want to make it clear that we are not in a position to have the Work Group go back to the drawing board and revise their report. We want the benefit of your comments as we do the final edits to the Energy Master Plan, I wanted to make that clear, so it is not expected that Chuck and his Work Group are going to reconvene to consider these comments, these comments will in fact be considered as to revisions of the Energy Master Plan as a supplement to what we got from the

Work Group.

MR. FEINBERG: As to the comments about the need to look at the future, everybody has to consider where we are and where we have come from. This is the first mention of alternative

transportation fuel in the New Jersey Energy Master Plan ever, and while I congratulate the Board for including this, it is mentioned several times in the beginning and the most detailed mention of alternative transportation fuels in the Energy Master Plan is on something like page 126 of a 128 page document, so I thought it was very important to set the base of where we are at and leave it to further group discussion or further Board action to come up with a more detailed feature of how we can get there, where we want to go and how we can get there.

Commissioner Fox, I forget your question.

COMISSIONER FOX: Electric vehicle charging peaking.

MR. FEINBERG: Can I call upon some of the utility interests that were part of the Group to address that?

MR. WHITMAN: Wayne Whitman from PSE&G, and I was part of the Work Group.

Repeat your question, please?

COMISSIONER FOX: Electric vehicles, how do you get paid for the electricity that they use? Obviously there are peak days, so it's a huge topic of discussion, there are all these different

opportunities and options to do it.

MR. WHITMAN: If you look throughout the whole United States there are a whole number of different ways that utilities in the respective states are looking at pricing their electricity and or charging it.

Whether or not it is a third-party involved, PECO, they have a public charging station and you go in and you swipe a card and you go through a subscription service to charge your car.

It would be one rate for electricity that you pay and it could be based on a whole number of different circumstances. In California they have real-time pricing.

We in New Jersey, we basically don't have a per se electric vehicle rate, we have different rates that we may be able to apply but we don't have a specific electric vehicle rate.

Yes, it would be desirable to charge off-peak at nighttime. But, again, and the rest of the uitilities, too, we don't have a specific electric vehicle rate. That may be something in the future.

COMISSIONER FOX: That's a huge topic, we are talking about electric vehicles now, we need

to decide soon how are they going to be paying for the electricity before we get a whole bunch of them.

MR. WHITMAN: We could control that, if there was a peak emergency situation utilities could cut off that charging, but you are right, there is really nothing in place that says we can charge six times as much for the electricity.

COMMISSIONER FOX: Even if we have fleet EVs they should be charging at least real-time pricing if not more, otherwise you have a fleet, say Public Service's fleet, and you are not being charged real-time price, that means you are contributing to the problem, and before we really move very much ahead even on fleet, we need to know how we are protecting the rest of the load.

MR. WHITMAN: Right now with the amount of vehicles we see coming on-line in the load projections, we are not--

COMISSIONER FOX: I hope you are right.

MR. WHITMAN: We are working with the Electric Power Research Group and there is a whole national group of other utilities involved. We are looking at loads and infrastructure issues, and the only thing we have identified, there could be very localized neighborhood type of issues in some of the

more older residential neighborhoods, but we are able to handle that, too, if we have that situation.

A lot of times, we don't have the ability to really know who is buying electric vehicles right now so if we don't know, that may be an issue in the future, that may be something we might want to have more of an idea of, who is buying those type of

vehicles.

MR. STERN: Alex Stern, PSE&G.

There are charts in the report that sort of touch on all of the issues you are raising and we are short of ideas as to possible conclusions, obviously you are raising huge and complex issues which they try in the report to hit on a lot of the problems you are are raising.

COMISSIONER FOX: It is a major issue because it is so congested to begin with.

A GENTLEMAN: In our work with electric vehicles, we, too, are looking for PSE&G and other utilities in New Jersey to specify what the tariff rate is for large commercial fleets charging.

That's something that the Board of Public Utilities can do now through this process, through the Energy Master Plan, work with PSE&G and Jersey Central so that people with fleets know exactly what

that price should be, because right now there is no transparency with that, and several utilities on the West Coast have established time of use prices.

COMMISSIONER FOX: Real-time pricing for electric vehicles in a state like New Jersey with a heavy congestion issue, there might be another way of doing it.

A GENTLEMAN: I want to add on the pricing issue, what has to be considered is a hot charge and a not so hot charge. Let's say you go into a Parkway restaurant and you need a charge, you will

pay a premium to get a hotter charge or a quicker charge than if you are at the mall and you want to plug in and you are going to be in there for two or three hours; that's a whole pricing issue, how much will that cost for that hot charge as opposed to a normal charge The pricing issue has many complexities to it and we are only at the beginning stages of that.

MR.FEINBERG: Which is appropriate because the technology to allow that five minute charge at a rest stop is also in the early stages, it's not quite there yet.

MR. PRINGLE: I am Dave Pringle, I am Campaign Director for the New Jersey Environmental

Federation, we have over a hundred thousand individual members.

I am glad that the Board is having these hearings, I was pessimistic about the draft Energy Master Plan, how open the process would be, so these hearings is a step in the right direction.

I think that the report is a good inventory of where we are today but I share other commenters' thoughts that in addition to that it should have been much more aggressive as to where do we go from here and how do we get there. Recognizing that the Committee's work is done, I hope the BPU will look at that as they revise the Energy Master Plan.

A lot of the people's comments here may or may not have been directly germaine to the Work

Group, but certainly are in the same ballpark, and I think they could have been a little more expansive in what they were looking at, and certainly the BPU can be.

We would like to see much more aggressive work toward hydrogen and electric powered vehicles. Ethanol, while it is renewable is not sustainable, it messes up food prices, it creates costs, you use more energy to produce ethanol than you gain in the

vehicle, and it creates air pollution problems that other options don't, which is why the Federation and the Sierra Club opposed efforts in the past as to the MBGB (phonetic).

Another area, really I think the Committee thought this was beyond their charge but the BPU should certainly deal with it, and that is that the best way to deal with this issue is not to need fuel in the first place, whether it be through better mass transit or where we put our houses, where we put our jobs, that will have a greater impact on this issue than any energy options we choose to fuel those vehicles, and I think the Board could be more expansive in looking at that.

And I think it is even more important for the Board to do that, while the DOT should, it isn't, and hopefully this new strategic growth plan unveiled last week will look at that and change that. There is some good material, good potential in that plan the Governor laid out, but there are a

lot of vagaries and if first and foremost what we want is transparency, we don't see that in this plan yet, and if there isn't a solid plan we don't know where we are going to grow, and there will be too much discretion left and that will be going in the

wrong direction.

In terms of there is a Catch-22, the infrastructure isn't there, the infrastructure is not going to be there and mthe demand is there and vice versa, we have got to break through that. Just because it isn't there isn't an examine not to have it.

Henry Ford didn't know where all of the gasoline was going to come from in 1905; we don't know where the electricity is going to come from to power all of our laptops and everything we use today, so we have to be pushing both ends at the same time.

PRESIDENT SOLOMON: Any questions for Mr. Pringle?

Anyone else?

I'm sorry that I missed the end of that. We will review the transcript individually and as a group. Written comments may be submitted on or before November 15th, two weeks from today.

As I mentioned previously, we have a couple of more hearings, November 7th at nine-thirty and November 10th at nine-thirty, November 7th is the Innovative Technology Work Group and November

10th is the Biomass Work Group.

As in all these cases we have provided to each of the groups a series of questions which you can tell they are responding to answer. Make sure you get your written comments in by the 15th. We will review all of them and we have received about three hundred just to date, don't be shy about it. We will review all of the comments received and all of the transcripts of these hearings and the Energy Master Plan hearings before a final plan is put out by the Governor.

With that, thank you very much for coming. We appreciate your input.

Are there any other questions?

(Adjourned.)

C E R T I F I C A T E

I, William Sokol, Certified Shorthand Reporter of the State of New Jersey, License No. 30X100030700, and Notary Public of the State of New Jersey, do hereby certify that the foregoing is a verbatim record of the testimony provided under oath before any Court, Referee, Commission or other body created by statute of the State of New Jersey.

I am not related to any parties involved in this action; I have no financial interest nor am I related to an agent of or employed by anyone with a financial interest in the outcome in which this transcript was taken; and furthermore, that I am not a relative or employee of any attorney or counsel employed by the parties hereto or financially interested in the action.

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WILLIAM SOKOL

Certified Shorthand Reporter

and Notary Public

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