READYING MICHIGAN TO MAKE GOOD ENERGY DECISIONS

Michigan Energy Public Forum

University Center (Tri-Cities area)

Monday, March 4, 2013
1:00 p.m. - 5:38 p.m.

DELTA COLLEGE
Lecture Theater
1961 Delta Road
University Center, Michigan 48710

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Introduction: Steve Bakkal, Director, Michigan Energy Office
John Quackenbush, Chairman, Michigan Public Service Commission

Presentations: Energy Michigan - Teresa Ringenbach, Senior Manager, Government & Regulatory Affairs, Direct Energy

Coalition to Keep Michigan Warm - Whitney Skeans, Co-Chair

Michigan Saves - Todd O'Grady, Public Sector Consultants

Hemlock Semiconductor - Aaron Howald, CFO

Clean Water Action presenting jointly with the Sierra Club - Susan Harley, Michigan Policy Director, Clean Water Action
Tiffany Hartung, Chapter Conservation Program Manager, Sierra Club

America's Natural Gas Alliance - Monica Martinez, Energy Consultant

Consumers Energy - Ronn Rasmussen, Vice President of Rates and Regulation

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REPORTED BY: Lori Anne Penn, CSR-1315

PUBLIC STATEMENTS: PAGE

University Center, Michigan

Monday, March 4, 2013

At 1:02 p.m.

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STEVE BAKKAL: Good afternoon, everyone, and welcome. My name is Steve Bakkal from the Michigan Energy Office, part of the Michigan Economic Development Corporation. On behalf of the Chairman of the Michigan Public Service Commission and myself, we'd like to welcome you to the third Michigan Energy Public Forum as we continue our process to ready Michigan to make good energy decisions.

As many of you here are aware, the Governor this past November gave his energy and environment address where he discussed the three pillars of a sound energy policy; that of reliability, affordability, and a protected environment, all built on a foundation of adaptability. And as part of that address, the Governor also discussed that 2013 will be a year that we meet with our policymakers, legislators and the public to gather facts and information that are needed in three specific areas that guide much of our energy policy today; that of energy efficiency, renewable energy, Electric Choice, or other additional areas that should be considered as well. Which brings us to the

reason why we're here today.

This past January we announced the input phase of this process that the Governor talked about. We'll be gathering this input through two primary methods, one of which is through these public forums, this is our third one, we will be having four more through the end of April, as well as a website we set up at michigan.gov/energy, where we posed a number of questions that we're seeking input and information on, and that website will be open for submissions until the end of April.

Now, when you go that website, you'll notice a number of questions for each specific topic area, over 80 questions in total, asking for very detailed information, but in general all the questions can probably be summarized by these two: First, what information do policymakers need to consider in order to make good energy decisions? Second, what existing data or studies are out there that policymakers can use to evaluate policy after 2015, energy policy after 2015? Thus, what we're not asking are for specific policy recommendations with these questions and with these forums, we're not asking what our targets should be or if we should even have targets, what we're asking for are the underlying facts that are needed by our policymakers

to make good, informed decisions. And so when you go on the website, and we've already had a number of submissions since we've made it go live in January, you're able to see all submissions that are made there, and if you have some information that you think is more relevant than what is being posed, we welcome you to do, you know, encourage you to actually go in and put those reports in there.

Again, the other part of the info process, we're going to be gathering this information through these public forums. The format on the forums will be similar to what we've had today and the other two previous ones; we'll set kind of the stage with four or five presentations from some of the major stakeholders that will attempt to address the questions that we've posed from their perspective, then we'll dedicate a large portion of the time for public input as well.

Today's proceeding, we do have a court reporter here today, so today's proceeding will be made available on the website, along with all the presentations from today's forum, as well as all the previous forums are available on the website.

After the input phase is closed at the end of April, the Chairman and myself will gather the information, we'll start outlining our reports, we'll

look at what other information that we still need to get that we didn't collect through this process. In the July-September timeframe we'll start to compile the reports. We'll issue a draft report in the October-November timeframe, also for public input. And in the November-December timeframe, we'll release the report for our legislators and the Governor. It's anticipated the Governor will utilize the report to develop his own policy recommendations that he will announce at the end of the year.

Now I'd like to introduce the Chairman of the Michigan Public Service Commission, Mr. John Quackenbush, and he will give us a little background information on those three major topic areas, as the PSC on the regular basis delivers some reports in these areas, so he's going to quickly give you an overview of those. Please join me in welcoming John to this podium. Thank you.

JOHN QUACKENBUSH: Well, good afternoon. While we're on this information-gathering process, I thought we'd begin by sharing with you some information that we already have. The Commission, as part of its duties, provides dozens of reports to the legislature and Governor during the course of a particular year, and there's three reports in particular that these half dozen

slides I'm going to show you come from. We have an energy efficiency report, which is due November 30 every year, there's a renewable energy report, which is due in February, and as well as an Electric Choice report, which is due in February.

So let's start by looking at energy efficiency. These first couple of slides show you what data we already have. As you can see on this, if you look at left-hand side, there's a -- the bars represent energy efficiency targets and energy efficiency achievements compared year-by-year; and as you can see, the target has been ratcheting upward each year since this was defined in the 2008 legislation, so you can see '09, 2010, 2011 and the target for '12, and you can see we've been achieving the energy efficiency targets. This is for electricity each year. And the target has been ramping up, as shown on the right side of this chart.

The next chart is very similar, except it deals with gas energy efficiency. Again, the targets have been ramping up year-by-year, and we've exceeded the target in each year. So this sets us up to address the question, we've met our targets, we've ratcheted up the target, and we're looking for your data to, you know, reach conclusions or to develop thoughts about, you know, do we want to continue increasing the target, have we

picked off the low-hanging fruit, what's left ahead, what opportunities are there still in energy efficiency.

Next is renewable energy. We are on track to head towards the 10-percent standard by 2015. You can see the progression as you head from left to right, upward progression in the amount of renewable energy we have in the state. On the very top line that's kind of a light gray line, it shows the bankable RECs, the renewable energy credits. So as you can see, there are a number of RECs that can be used towards future renewables commitments. And so the question is, once we get to 2015, where do we go from here?

The last few graphs have to do with Electric Choice, the third primary area that the Governor identified for us to address. This shows for the two largest utilities in the state, how many people or how many customers are waiting in the queue to get served by alternative energy suppliers. The first half, the top half deals with Consumers Energy, and as you can see from the bottom line in the top half, the participation percent without a cap, that's if we did not have a 10-percent cap on Choice participation, where would the levels go. And over the last three years, the number has been steadily increasing from 14 to 19 to 24 percent, and this would be the percent of the retail sales that would

come through alternative energy suppliers if there were no cap. The bottom half of the page is the same information for Detroit Edison, you can see the same trend; in this case, the numbers are a little different, they've gone from 11 to 15 to 21 percent.

This chart also comes from our Electric Choice report of February 1. And I should mention that all these reports are on the Commission website, as well as on the, you know, michigan.gov/energy website as well where we're seeking your comments to be posted. This is a comparison of residential rates comparing Michigan to surrounding states. As you can see, if you can follow the Michigan, Michigan has generally been in the top half of the range, and in the last couple of years has become the highest number on this chart, and we're seeking comments related to that. As well as on this next page, this shows industrial rates, and it's a similar kind of a historical pattern.

So this represents some data we're starting with. If you have different ways to present historical data or like some supplemental data, we're more than happy to consider that. Please submit it on the website, or we're happy to have you talk about it here today.

So with that, let me pass it back to

Steve, and we can get started. Thanks.

STEVE BAKKAL: Thank you, Mr. Chairman.

Now I'd just like to quickly go through the agenda for the rest of the afternoon. Again, we will start off with some presentations from some of our major stakeholders. You should have received an agenda when you walked in. Then we'll be taking a short break, 10-15 minute break, and we'll come back for the public comments. If you would like to speak, there are speaker request cards that are at the welcome desk, please complete those and give those back and we'll take those and after the break we'll begin with our public speakers. Also, again, I want to remind everybody on michigan.gov/energy, that's also an opportunity to provide your input as well. Also on the website is the Governor's energy address, as well as the whole timeline that I described to you earlier if you're interested in reading some more information.

Before I introduce our first speaker, I did want to acknowledge a few people that we have in the audience with us today. We have Ms. JoAnn Crary, President of Saginaw Future, who's our local economic development partner here with us today. I'm not sure if there's any members of the legislature here today. If you are here, please raise your hand, you're more than

welcome to come up and say a few words at this time. Nope. O.K.

With that, we can get started. Our first speaker is Teresa Ringenbach, Senior Manager of Government and Regulatory Affairs for Direct Energy. Please join me in welcoming Teresa to the stage.

TERESA RINGENBACH: All right. Thank you for offering Energy Michigan the opportunity to speak today. Energy Michigan is actually a trade association that's made up of both suppliers of retail electricity and customers who are taking retail electric supply from someone other than the utility throughout the state.

So today I'm just going to go through a little bit of history of how competitive markets developed. I mean when we talk about competitive markets, we actually call it restructuring, and the idea was the utilities are in the best position to actually be a wires-only company. So when we talk about competition, the utilities still play a critical role. The utilities are still the entity that at the end of the day delivers the power to your house and makes sure that the lights stay on; and suppliers in competition are who you would choose to actually determine the price of those actual electrons that flow through the wires.

So between 1999 and 2007, 23 states went

to retail competitive structures for electricity, and they did it in different ways. And one of the key things that happened throughout that time was when they all switched over to competition, they told residential customers for a limited period a time to allow the market to develop, we're actually going to -- in some states they just froze the residential customers' rates, in some states they actually froze the rate and then lowered it; so Ohio offered a five-percent discount for a period of time, Illinois I believe it was about a seven-percent discount, and Pennsylvania froze their rates, too. And what happened was, as we get to the point where those rate freezes or rate caps fell off, it also coincided with a period in the market where there was a lot of uncertainty in the electricity market, so coal prices and natural gas prices were really, really high in 2007, and they created this perfect storm that led to a lot of states questioning whether or not competition was really working.

So you flash forward to 2007-2008 and there became a, and I would call it almost national debate on whether or not we should go back the good old days of regulation; and at that time there were a lot of studies that came out that reminded everyone that the good old days of regulation weren't always the good old

days. The reality was when we were building power plants or trying to regulate those prices, fundamentally energy markets can be uncertain, and at the end of the day, do you put that uncertainty and the cost of that uncertainty on all of the people who are paying the rates, or do you let people go out and pick their own rate, and if a company messes up, put it on their shareholders to eat that risk.

So there's, the North Ridge Study was probably the best study because it's actually an entity who in many ways has traditionally been on the other side of competition, but they came out on behalf of commercial/industrial customers and said, before we just put the genie back in the bottle, let's be very careful and really think about what it meant in the good old days and why we actually went to competition in the first place.

2008, between 2008 and 2010 Michigan and a lot of other states had legislation that was pending, and Michigan went with the we don't think competition is necessarily the worst thing, but it hasn't fully developed in our state so we're going to cap it, and only 10 percent of the load in the state is able to switch, and anything beyond that, you pretty much have to stay with the utility and the Commission will determine your

rates for you.

In Ohio, they went with Senate Bill 221, which actually said we believe competition is the best route for our state, and we're going to stick with a competitive market structure, but we're going to do it through these plans that get filed before the Commission to ensure that we do take a slow and steady pace and don't just jump straight into the market and throw customers out there, we're going to do it in a methodical manner.

Illinois went as far as they actually took the utility completely out of the role of procuring the power, and they created a state agency called the Illinois Power Authority that exists today, and that Power Authority is in charge of going out and going into the open market. So in Michigan and parts of Illinois, it's MISO, the Midwest ISO, and they actually go out and they do these bids with people who own power plants, and it's the state agency who does that, not the actual utilities and not the Commission.

Maryland, also the governor in Maryland was up in arms and said, you know, we're about to go through these huge price spikes and we think the best way to do it is to cap electric prices, and if there's a cost to that, then we'll just defer it out to later years and

we'll pay it out later. The legislature in Maryland actually went against their own governor and said, no, we're not going to do that, so he got voted down. Actually, Governor O'Malley recently has taken a completely opposite view and is very pro competition and said, you know, I'm glad we didn't do that, we think competition is really working and we're happy that we sort of stayed the course.

In California, which was the state that I think everyone, you know, it's infamous for what happened with electricity there and Enron, California actually during that period of time, they had shut down their whole competition in their state, they actually passed a law that gradually would reopen the market. So they took sort of a Michiganesque type of approach where they said we're going to allow little bits of load to switch, so we're inviting competition back into our state in an incremental manner, and it goes up every -- every year there's a little bit more that's available. They did this in a way where the first year that they did it, the amount of load that was available to switch, you had to hit a button and the first one in got to switch. It filled up in like five seconds.

So what's happening today? So you go beyond 2008 when all these laws passed and everybody

decided to either cap it or slowly open it or take a methodical approach, and today it's a very different market. So Connecticut actually in their budget bill today has said we think competition is so successful, we're going to take that energy procurement away from all the utilities, we're going to auction off all the customers to the highest supplier, and everyone is going to be in a competitive market.

In Texas, the utilities are literally a wires-only company. It is their job to make sure that the wires and the poles and everything are in place and safe and that power is getting to your house. But unlike Michigan where you call up the utility and you get all of your service, in Texas when you call up to get service, you have to pick what supplier you want, and you have to pick the product that you want. So it's not a one size fits all, you can actually choose 100-percent green or 100-percent wind, there's a whole, there's hundreds of these products that you can pick from.

Pennsylvania, the utilities actually bid out their default service every year to make sure that they're getting the lowest price on the market. So in Pennsylvania, the utility, actually DTE Energy is one of the bidders, so in Pennsylvania there's these wholesale providers that bid into the market and they actually

serve the customers there.

Ohio again has taken this sort of methodical approach, but right now their commission has opened a case that said, O.K., we've been slow and steady for so long, how do we improve competition here, what's preventing it from really growing as an industry.

So one of the questions that was put out was: Why have some states gone with a cap and others haven't, and what's the difference between all these states? So I would say that Michigan and California are probably the only states that have a true cap on the amount of customers who can actually switch to a supplier; most states have taken the opposite approach, which is there is no limit, anybody can switch, residential, commercial, industrial, it doesn't matter, you have the right to shop for your electricity.

Illinois has taken it probably a step further by saying when you hit a certain level, when so many customers have actually left the utility, you're actually declared competitive, and if you are declared competitive, you get what's called an hourly price, so electricity is priced hourly, or you can actually go out and buy big blocks where you can hedge your price and lock it in. In Illinois, if your rate class is declared competitive, the only thing you can get from the utility

is an hourly price; if you want something else, you have to pick a supplier.

So I wanted to give you a little example, because one of the things that I think gets lost in all of this is where was the switch rates, where were customers actually going during this time. And in 2008, it's true, hardly anyone was moving away. There were several suppliers out there, but very little consumer education, so customers were leary to switch. And if you look at these numbers, if you look at Pennsylvania, Ohio, Illinois, and then Michigan actually is on there, but it's very, very tiny; Ohio is the only one that actually had residential switching mixed in there, and I'll get to that on the next slide. Pennsylvania and Illinois, those switch numbers were literally just commercial and industrial customers, who do tend to be sort of the first movers when it comes to this kind of thing, they tend to be a little bit more energy savvy.

If you flash to today, these are the residential switch rates. So if you looked at that other slide, everyone was below 10 percent, right. If you look at Ohio and certain utility territories today, there almost 80 percent of the residential customers had moved to another supplier, they have actually made a choice and switched. Illinois, you're over 60 percent, and that's

Ameren right here -- which I think there's no pointer on here -- but Ameren is similar to Michigan, it's within the Midwest ISO, so it's within the Midwest market that Michigan's utilities also belong to.

Commercial and industrial customers, you're almost up to 100 percent in Pennsylvania. And if you looked at Pennsylvania before, you were well below 10 percent.

So the market has caught up with customer education, customers now are much more savvy in these states because we've spent years trying to educate them on our own dime, not by putting, you know, riders on people's bills, but by actually private companies investing and sending notices and explaining to customers what's going on.

What does this mean in terms of actual products out there? I made a comparison between Ameren and the Michigan utilities, and I did that because, again, they're within the same Midwest ISO, the same market regions. So if you look at offers that are available to customers in Illinois behind the Ameren utility, the lowest offer out there is 44 percent less than DTE and Consumers, and you get a $25 Visa card if you switch. That's the lowest one. Even the renewable offers that are available behind Ameren, Illinois are

lower than Michigan rates right now.

So price statistics 2008 versus today, and the Chairman said we can present it in different ways, so this is your numbers, but they're actually for all sectors, where the Chairman had broken these out by different rate classes. So the national average between 2008 and 2012 has remained much closer and steadier for those states who are competitive than for Michigan, who actually went with the sort of semi-regulated approach where they tapped it. So if you look at these other states, you'll see that it's been a much steadier pricing regime than when you went back to regulation, and that goes back to what I said at the beginning, which is when you try to regulate a market that is very uncertain, there comes a cost with that because you have to bake in that risk.

This is actually a sheet that was put out by Compete, which is a coalition of industrial customers. So you have Wal-Mart, Sears, Macy's, they all belong to this coalition, it's a national coalition, and this is their chart that they put out. And what it shows is that for residential, commercial, industrial, that when it comes to regulated versus -- when I say regulated, states where you can't choose versus states where you can choose an alternative supplier, the rates have either been lower

or steadier than the national average or non-competitive states.

One of the other questions and one of the things that's come up in Michigan is concerns about, and rightly so, concerns about because of environmental regulations and other things that are happening, there are power plants that are going to be shut down. There are a lot of coal plants that, frankly, are too expensive to be retrofitted to meet the environmental regulations that are likely to be shut down, and it's not just in Michigan, it's happening across all regions, this debate is happening everywhere. And it takes on different forms, and one of those forms is you could literally just reregulate everything, build a power plant at whatever cost and ignore the market, whether or not it's needed, or you can do what these states have done. So you have the Midwest, New England, New York, Texas, California, they've all had power plants built in their states, and it was all done by private investors. It was not put on a ratepayer's bill at any cost.

The other thing is all states require a licensing of alternative suppliers, and that happens through the state commissions. Michigan is no exception. In order to sell in this state, we have to meet specific criteria that's set. We have very specific consumer

protection rules that we have to follow, and if we don't, the Commission will come after you, and that's not just in Michigan, that's everywhere. So that standard is already in place here to open the market.

And all states have low-income and uncollectible protections for customers, they do it in different ways. Some of them, for instance, Texas, we actually have to provide those. And then others --

My time is up, so but I can, just to wrap everything up, I just want to point out that we are all part of the same market when it comes to the wholesale market, it's just a matter at the state level of whether or not residents have a choice in suppliers or they only have one choice, which is whatever the utility serves to them. So thank you for your time.

STEVE BAKKAL: Thank you, Teresa.

Our next speaker is Whitney Skeans, co-chair representing the Coalition to Keep Michigan Warm. Please join me in welcoming Whitney to the stage.

WHITNEY SKEANS: Good afternoon, ladies and gentlemen. Chairman Quackenbush, Director Bakkal, thank you for having me here today.

My name is Whitney Skeans, and I am currently working as a customer assistance coordinator for Consumers Energy. I am also co-chair of the

Coalition to Keep Michigan Warm, and I present this statement on behalf of the Coalition. The other Coalition chairperson is Sharon Theroux of the Michigan Community Action Agency, who some of you heard in Lansing a couple weeks ago.

Coalition to Keep Michigan Warm is a group of organizations, including energy services providers, state governmental organizations, nonprofit energy assistance providers, and individual supporters with direct and indirect involvement in low-income household energy issues. Together our members seek to improve the availability of financial and human resources to meet the energy assistance needs of Michigan's most vulnerable households. The members perform this mission through exchange of information, developing new ideas, public education, and advocacy. Detailed information about our membership is found on our website at www.coalitiontokeepmichiganwarm.com. This postcard, which is represented in this slide, should also be available in the lobby at the resource table for the Public Service Commission, so please pick one up on your way out.

These are some of our members, just a few. Note that we have a very wide group of stakeholder interests represented.

Some of our goals and objectives. We participate in public advocacy supporting a continued high level of federal funding through the Low Income Home Energy Assistance Program, LIHEAP, that comes to Michigan through the Department of Human Services. The Coalition, we work also at the state level, we appreciate the recognition of Governor Snyder and the legislature, as well as key state agencies, such as DHS, the Department of Human Services, and the Public Service Commission to pursue common goals. We believe that providing effective and adequate levels of energy assistance for our income-qualified households is a matter of essential common interest and deserves continued public attention, particularly in these times of economic stress.

In my brief comments that follow, I will attempt to summarize our position on issues of energy and security in Michigan, and the key challenges to our safety net, including sufficient funding and effective delivery of energy assistance services that leverage the recipient's personal engagement and sustain improvements toward the common goal of energy self-sufficiency.

A few words about need in general, which will come as no surprise. Over the past decade, and especially in the recent years, Michigan has been no stranger to unemployment and poverty. In fact, according

to 2010 census data and recent studies published by the Michigan League for Public Policy, by comparison nationally, Michigan has experienced the largest drop in median income, as well as the fastest growth in poverty. Today more than 400,000 people are still unemployed in our state.

And my focus today of energy insecurity, some key indicators that I'd like to note. From 2-1-1, the United Way's emergency line, housing and utilities is by far the largest call volume category among emergency calls; 150,000 calls per year for housing and utilities, and that number is growing. Secondly, in terms of service provision, our federal- and state-funded programs serve over 650,000 Michigan households a year with energy assistance. By census projections, many more are eligible, but do not apply. So that 650,000 represents about half of the eligible population.

Our traditional utility responses of budget and protection programs aren't effectively improving payment patterns, noting that on average about 30,000 customers each month default off of income-qualified budget plans, and more than 400,000 disconnect orders for non-pay are issued each month.

Also, understand that shut-off protection is not universal, and I'm speaking particularly about our

deliverable fuel customers in mid and rural northern Michigan, they're particularly impacted. When a tank becomes low, that household must find another place to live.

Finally, we note some very real human impacts. Some of our seniors in particular, they're struggling to afford energy, it may compromise health and safety to keep the heat on. As well, disconnection can often be a precursor to family separation; if there are children in the home and the energy is lost, the children must leave, or homelessness at worst.

A few words about energy affordability. In terms of affordability, we need to think about the percent of pocket cost. For 2011, a combined gas/ electric utility bill, we note that Michigan's percent of pocket cost is about 6.4 percent of gross income, which is higher than the national average of 5.9 percent in most neighboring states.

Also, a few words with pricing. Let me talk a little bit about our energy affordability. In an effort to quantify the gap between affordable and actual home energy bills, economists Fischer, Sheehan, and Colton have developed a model that estimates the "home energy affordability gap", and you'll note here the national affordable burden for a total home energy cost

is set at six percent of gross household income for this model. According to the model, which utilizes EIA fuel-specific price reports, Michigan's average of affordability gap per household is $1,761 per year. This is the average dollar amount by which actual home energy costs exceeds affordable home energy costs for households below 185 percent of poverty.

Finally, you'll note that for 2011, Michigan ranked 29th in the U.S. in its home affordability/energy affordability. In other words, we are fairly middle of the road in affordability rankings by comparison with other states.

In terms of pricing, while natural gas prices have fallen dramatically over the past two years, about 9.4 percent, both heat and cooling season electric, as well as deliverable fuel prices, have risen. As you can see, Michigan's prices are significantly lower than its peers for natural gas, but slightly higher for electric. Although not represented here in our written comments, we, as the Coalition, will include deliverable fuel pricing patterns as well.

We recognize that the tough Michigan economy has had an impact on our citizens and communities, therefore, as a Coalition, we want to ensure that we have appropriate programs in place to provide a

safety net for Michigan's most vulnerable. Historically, Michigan has had four general program umbrellas, represented on this slide: State emergency relief through the Department of Human Services; home heating credits issued through the treasury; state-funded grants to assistance agencies, like Salvation Army, the Heat and Warmth Fund, THAW, and Community Action, to name just a few; and then fourthly, utility programs. Although they vary by utility, most utilities offer senior and low-income credits, shut-off protection, winter protection plans, and utility-specific customer programs, pilots and partnerships with agencies.

In terms of the funding flow, our energy assistance programs are funded through a combination of federal and state taxpayer dollars. As you can see from this chart, this system can be rather complex for those seeking assistance due to different criteria and funding levels, for different programs at different times of the year. The majority of dollars are typically paid out through June, so there's less funding available during the summer. In the Department of Human Services, per-household caps will vary year to year, and even within each heating season based upon federal funding levels, which have changed dramatically in the past few years.

And let me show you a little bit of the

history here. I mentioned earlier LIHEAP, the Low Income Home Energy Assistance Program. Nearly -- it peaked, you can see, in 2010 at $270 million to Michigan. For 2013, it's forecasted to be 168 million, so a $100 million loss in the past three years to our state. And what happens with this, the impacts of this loss? With the same or a larger population of those in need, the benefit per household shrinks, so we're having less funding per household.

So from experience, we understand that assistance dollars and protection plans are bandages. So at critical times, our bill assistance programs, although they keep the heat and lights on, it's really energy efficiency programs that address the root cause and offer long-term sustainable solutions, especially as they are done in conjunction with energy education.

For energy efficiency, we have three general program umbrellas for income-qualified customer base. The federally-funded weatherization assistance program is offered through the Community Action Agencies; we have energy optimization programs through the utilities that are funded by utility customers that provide free installation of energy-saving measures; and thirdly, energy education classes and materials that are offered primarily through the nonprofit agency network

which provide practical ways to reduce energy usage in the home.

In summary, we all have a role to play; the public, the state, private utilities and the nonprofit network of agencies. This is a very complex issue, as you've seen, and collaboration is key. There's no one-size-fits-all type of need, and no one-size-fits-all solution.

On the path to helping our vulnerable customers and citizens to energy self-sufficiency, Coalition to Keep Michigan Warm suggests the following strategic requirements and role assignments:

Firstly, to improve the connectivity to resources. 2-1-1 does a fantastic job in that role.

Shrinking the time between use and pay, a role for the utilities; potentially utilizing customizable billing options in the future and technology to better manage consumption.

Thirdly, deliver healthy interventions that prevent repeat occurrences. We find that the agencies fill that role very well by delivering bill assistance and weatherization programs. Case management is very effective, longer-term tracking with households in need to help them make better decisions in terms of household budget and behavior.

Finally, developing strategic operational partnerships with the State of Michigan's agencies to maximize solutions, like Department of Human Services. MISHDA, Office of Services to the Aging where it concerns our seniors, and Department of Military and Veterans Affairs where it concerns our veterans.

Again, I just want to reiterate the need for strategic collaboration by calling attention to some of the fine examples of existing collaboration and initiatives that we can all be proud of: Customer assistance events that are shared by utilities and resource providers; senior and veteran specific initiatives; legislator-initiated forums; the statewide Walks for Warmth you've seen in your communities throughout the month of February; the Heat and Warmth Fund with their Week of Warmth and radiothon; PeopleCare, with the Salvation Army; and the Coalition to Keep Michigan Warm has had its own events as well.

The Coalition recognizes and appreciates additional collaborative efforts on the political and regulatory fronts here in Michigan, particularly in the past two years. Number one, the Michigan legislature acted to preserve state funds for energy assistance in 2011 when they were threatened, as well as the Governor's focus on affordability, naming February Keep Michigan

Warm Month at the request of the Coalition, and also his 2014 budget recommendation for continued energy assistance funding at the $60 million level. We also recognize the legislature's passage of important energy assistance legislation, Senate Bill 1135 at year-end 2012, which designated DHS as the sole responsible for the state's low-income energy programs, to improve the administration and efficiency by redefining crisis at the point of a past-due notice versus a shut-off notice, backing it up so we can all be a little bit more proactive in getting the dollars to the needy; and also to reduce the cycle of dependency through requiring that there be self-sufficiency metrics represented in the future spending of these dollars.

Again, we all have roles to play, and that's why the Coalition exists; to collaborate, educate, and see that our resources are efficiently and effectively delivered to our most vulnerable neighbors.

Collaboration for a Michigan solution must continue in order to achieve our shared long-term goal of energy self-sufficiency. And what I mean by that is the ability of every Michigan household to afford the energy they need to heat and light their homes.

In conclusion, we offer three key considerations to the policymakers of the state:

Firstly, the Coalition urges Michigan policymakers to remain focused on income affordability for residential customers. In any future policy, consider the possible disproportionate impact on new measures. Due to percent of income energy represents for our low-income households that can be upwards of 20 percent of their income for energy costs, they can often be adversely impacted if policies result in rising costs where there is little corresponding benefit.

Secondly, we urge policymakers to continue to include energy optimization in the portfolio of programs where possible. This is part of sustainability, as well as the greater need to establish a stable funding stream for the state that supplements and fills critical gaps given the high variability in the federal LIHEAP funding.

And then finally, recall the tandem efforts of Michigan's safety net to leverage energy self-sufficiency. Many of us are currently piloting programs that will help us better understand the types of need and then craft appropriate solutions sets for each type.

Coalition to Keep Michigan Warm appreciates this opportunity to provide input, and we look forward to continuing collaborations on the journey

toward a balanced and thoughtful energy future for all of Michigan's citizens. Thank you.

STEVE BAKKAL: Thank you, Whitney.

Our next speaker is Todd O'Grady, Program Coordinator for Public Sector Consultants and Michigan Saves, who's filling in for Sally Talberg today. Please join me in welcoming Todd to the stage.

TODD O'GRADY: Hello, everyone. Sally apologizes for not being able to make it today. Those of you who know Sally, she lives and breathes Michigan Saves and would have done everything she could to get here today, but instead, she asked me to fill in. I'm Todd O'Grady, I'm the Program Coordinator for the Business Energy Financing Program.

I'm going to have to use notes, because has anyone ever tried to do a presentation on somebody else's slides? It's so -- as long as Sister Kathleen is not in the audience from Holy Redeemer, I'll be all right, because if I took my eyes off the public for two fingers, she'd make me start all over, but I got 12 slides here so I should be all right.

So thank you, Commissioner Quackenbush and Director Bakkal, for having us here today, and I'd also like to thank the staff of the Michigan Energy Office and the Public Service Commission. This is my

third event now, and this has really been great. The venues keep getting better, the organization of the events has been terrific, and the way they're posting the information on the website the day after, the presentations are up there, I spent all weekend reading about the Grand Rapids transcript, so it's really helpful, and I really think I learned something new, many new things at each event. So I thank the staffs of the Michigan Public Service Commission and the Michigan Energy Office for doing such a fine job.

Efficiency, this is a statement from Governor Snyder's environment and energy policy speech in November. I'm going to discuss a little bit about efficiency potential.

Back in 2010 I believe, 2011 was the Public Service Commission and the utilities commissioned a report that really was covering behaviors and the equipment and the things that are in people's homes and what needs to be done. As you can see on here, attic insulation, this is based on an existing home and code, code is in purple; existing homes have about an R27, where the code is up around R48. And the wall insulation, the insulation was about, the R factor was at about an R12, R13, and the code is at about an R21, so you see the gap differences between those homes, and just

on insulation is quite large.

In that same report, they also looked at the insulation in the rim joists. The rim joists is if you're in your basement and you look up, it's that gap between the foundation and your flooring. That space needs to be insulated to get maximum energy efficiency. 28 percent of the homes that they surveyed had no rim joist insulation. 70 percent of the homes that have crawl spaces had no insulation at all in the crawl space. About half of the furnaces were at least 10 years old, and about 20 percent were 20 years or older.

In that same report they also questioned the attitudes of folks about energy efficiency. 63 percent said energy savings was very important; but customers are apathetic, 68 percent don't feel responsible for conserving energy because contributions are so small. Of that top one, the 63 percent, 64 percent of those said that their sole motivation was to save energy -- save money on their utility bills, not energy; 14 percent said environmental; 13 percent said energy independence; and 8 percent said social responsibility.

So to tell you a little bit about Michigan Saves, we have three programs: We have the home energy loan program, which is a residential program; we

have the business energy financing program, which is near and dear to my heart; and then we have the public sector, what we call public sector program, municipal program coming up hopefully in this month we're going to launch, and that's going to gear toward the public schools, public hospitals, things of that nature.

Michigan Saves was started with seed money from the Michigan Public Service Commission, and from that we've formed a public partner -- public/private partnership with many organizations, and the key mission is to make energy efficiency and renewable energy affordable, offer financing for it. And the real thing is to eliminate the first barrier, which is the customer not being able to afford to do these measures at this time.

With the home energy loan program, it's a contractor-driven program; we have over 350 contractors involved in that program, we work with 7 local credit unions that are based everywhere from Monroe up to Marquette; we offer financing from $1,000 to $20,000. We just last month crossed $18 million in home financing, and those loans, it's a pretty impressive number, because most of those loans are around the $6,000 to $8,000 level. So we've really got to commend our contractors.

When I say it's a contractor-driven

program, that means the contractors are primarily responsible for the marketing of the program. It's a tool for them when the homeowner says, yeah, I love those rebates, they're great, but I don't have the money to do the program right now to get those rebates, then the contractor brings out, well, we have financing available. So it's been a pretty nice ramp-up. As I said, we just crossed $18 million with that program. It's a quick and easy approval process, we call it a tabletop approval where when the contractor's at the table, they hand the phone over to the customer, and in 15 minutes they know if they're approved or denied.

The Business Energy Financing program, the BEF program, is another contractor-driven program; we have over 100 contractors in the program. Again, it's a statewide program for financing energy efficiency improvements in any business in the State of Michigan. It's been in existence for over two years. We have over 100 contractors in that program as authorized contractors. We offer financing from $2,000 to $150,000. We also have a quick approval process, it's a one-day approval process for loans $75,000 and under, two business days for loans $75,000 to $150,000. And that quick one-day approval is mainly to facilitate emergency equipment replacement for these restaurants and grocery

stores or any other business whose equipment breaks down, they're in panic mode, so lot of times they just buy whatever's available; this way we're allowing them to buy something energy efficient.

And it is a fast and easy process. We have partnered with Ervin Leasing, which is owned by the Bank of Ann Arbor, and they have a terrific team in Ann Arbor, and we've been able to make it a seamless process for the contractors as well. With this program, the contractors are paid within 48 hours after the job is complete. And I see a few of the contractors in the audience today. They really appreciate that, because a lot of times they're waiting 30 to 60 days for payment, so that's been one of the real success stories of this program. Last week we had -- this program was launched November 29 of last year, so we're in our third month now. I had 22 applications last week alone just for financing. So it's ramping up pretty quick, and we're really proud of that program.

As I mentioned a little bit ago, we are going to be offering a public sector program which is going to be eligible to municipalities around the state. The financing will be a higher, a larger amount, basically be driven by the same contractors in the Business Energy Financing program. We're still looking

for contractors, so if you are a contractor or know of one, please get them enrolled in our program. That program will be hopefully, as I said, launched this month, and it will go after public schools, hospitals, lighting, things of that nature, with probably around a $10 million cap on that program.

The Better Buildings for Michigan program is a program through the Department of Energy, and the Michigan Energy Office partnered, and the program goes around to different neighborhoods, and we call them neighborhood sweeps. Residential areas with 450 homes, they go through and they offer special incentives to the homeowners to get them, drive them to do energy efficiency improvements. And it's really been a nice kind of like an experiment lab for energy efficiency because we've been able to learn a lot of things. We've been in over 9,000 homes, over 13 million square feet of commercial area, and it's been able to help us to determine what makes people move for energy efficiency.

Now, the first test to learn what was driving demand, we used marketing, duration, sweep size, co-pay, location, trying different things with different programs, and these are programs located everywhere from down in, by Kalamazoo all the way up to Marquette, so we've got a good sampling of the whole state.

So with that program, the first thing we found was on the driving demand side, 67 percent that we approached didn't respond, 15 percent said they weren't interested, and 18 percent participated. Of those that participated, 36 percent went on to do additional or deeper retrofit, like foaming that rim joist I talked about earlier, or even deeper things, air sealing for their home. So it was a pretty nice percentage, and we learned a lot from that, but as can you see, there's a lot more homes that we need to touch in the State of Michigan.

The other thing we did was interest rates, and this basically says, on the left side there is a percentage of upsale packages on the left, and then you have low interest rates, we've got about an average of 44 percent that upsold; with the medium interest rate, the 1.99 interest rate, about 40 percent; and then with 3.99 or higher, this is on the residential side, we had been 10 percent average that upsold, went and did deeper retrofit. So basically told us obviously lower interest rates drive more energy efficiency retrofits.

So final thoughts, and these are Sally's thoughts, of course. Energy efficiency is a win/win. Michigan has good framework and tools, but persistent barriers remain. And going forward, we'd like to see a

better understanding of potential, increased awareness and innovative programs to transform the market.

So with that, again, the bad news was Sally wasn't able to make it, but her contact information is here. And I thank you for your time and attention.

STEVE BAKKAL: Thank you, Todd.

Before I introduce our next speaker, I'd like to recognize a member of the legislature who recently joined us. Representative Charles Brunner is here. If you want to raise your hand, Charles. Representative Charles Brunner, there he is.

Our next speaker is Aaron Howald, CFO of Hemlock Semiconductor. Please join me in welcoming Aaron to the stage. Thank you.

AARON HOWALD: Good afternoon. My name is Aaron Howald, and I am the chief financial officer for the Hemlock Semiconductor Group of companies, so you guys get to hear from an accountant today sprinkled in with all the experts.

By way of introduction, Hemlock Semiconductor Group is owned by three firms: Dow Corning Corporation, most of you know them, they're a prominent silicon-based chemical manufacturer that has headquarters in the region; but we also have two Japanese companies that are shareholders in Hemlock Semiconductor, Shin-Etsu

Handotai and Mitsubishi Materials Corporation; however, Dow Corning is our majority shareholder, and actually founded Hemlock over 50 years ago back in 1961.

Today, our headquarters in Thomas Township is home to one of the largest manufacturing sites of its kind in the world. We currently have approximately 900 employees, as well as a similar number of contract positions at the site today.

Hemlock Semiconductor is one of the world's leading providers of hyper-pure polycrystalline silicon for the semiconductor and solar energy industries. Polycrystalline silicon, also called polysilicon for short, is widely known as the purest manmade substance on earth. It is the material that is made from quartz, and then through a number of highly specialized chemical reactions, is purified, refined and delivered to our customers around the world.

Our customers use polysilicon in electronic semiconducting devices, hence the reason why silicon is in the moniker Silicon Valley, and polysilicon is also used a key raw material in the manufacture of solar cells as well.

Hemlock Semiconductor has called Michigan home since 1961, and in the last decade, we have vastly expanded our Michigan presence. In total, Hemlock

Semiconductor has announced investments of $4.5 billion since 2005 to increase our capacity to serve the needs of the growing solar industry. Over $2.5 billion of this investment has occurred at the Hemlock Michigan facility.

Given that we are an exporter of polysilicon, our ability to maintain our global competitiveness has always been key to our success. Today we are positioned as a leading low-cost, high-purity, high-quality producer in the global industry. Barring market access disruptions caused by global trade conflicts confronting the solar industry today, over the long term we expect to continue to be able to strongly compete in both the semiconductor and solar industries from our U.S. base of operations; that is, assuming the conditions for competitiveness, including competitive energy rates, remain.

This slide shows the two supply chains that we sell into. In both the electronics and the solar space, we find ourselves at the beginning of a truly global value change that partners the most innovative and efficient manufacturers throughout the globe, resulting in lower costs for consumers and increased productivity and efficiency of everything from solar panels to smart phones. Our two Japanese shareholders are the No. 1 and No. 2 largest semiconductor ingot/wafer producers in the

world, that No. 2 step in the electronic supply chain. With this share position, one out of every three electronic devices in the world, cell phones, tablets, basically anything with a chip, has our polysilicon inside, and that's polysilicon manufactured and exported right down the road from here in Hemlock, Michigan.

Energy costs are indeed critical to our competitiveness on the global stage. The process of manufacturing polysilicon is both complex and extremely energy intensive. To meet the purity demands of our customers and the technologies they produce to consumers around the world, we refine our polysilicon to be as much as much as 99 and nine 9s after the decimal point percent pure. We measure impurities in parts per trillion, which strains the detection abilities of all but the most sensitive advanced instruments.

This purification process requires tremendous amounts of energy. At full production, Hemlock Semiconductor uses as much as 420 megawatts of power, making it the largest single-site user of electricity in the entire State of Michigan. Just for reference, 420 megawatts is about 70 percent of the output of an average-sized coal-fired power plant. So with this load, Hemlock Semiconductor spends more on electricity than on any other single operating cost.

So we compete in a global industry, and polysilicon producers spend a lot of money on electricity, more than they spend on raw materials, labor, any other expense category. Because of this, regional variations in energy costs, regulatory regimes, and whether a polysilicon manufacturer has access to competitive rates, or even a competitive marketplace for energy, can ultimately decide which company can most competitively supply polysilicon to the marketplace.

We believe that to have an energy policy that supports advanced manufacturing, the state should pursue two objectives:

First, effective regulatory oversight that emulates market competition to ensure prudent business decisions and drive continuous improvement in efficiency, productivity and cost-controls measures on the parts of the utilities.

And second, increased market competition, in other words, Electricity Choice, in which utilities and electricity generation suppliers must compete for customers.

But the reality, Michigan has both capped market competition to 10 percent of a utility's customer base, and neglected to provide the level of regulatory oversight necessary to ensure that we have these

competitively priced electricity rates for manufacturing.

As this slide shows, the cap on Electricity Choice has limited the ability of manufacturers and other consumers in Michigan to seek lower-cost energy and generation supply, which is about 3/5 of the total delivered cost of electricity in the United States.

Moreover, the 2008 energy legislation has made it easier for utilities to increase their rates through the regulatory process. As this report from Standard & Poor's shows, the post-2008 regulatory environment is deemed favorable to the utilities. And as we will see on the coming slide, the data tell us that this favorable environment for utilities has come at a cost to Michigan's industrial base.

The history of Michigan's electricity rates tell the whole story. With the introduction of Electricity Choice during the early 2000s, Michigan's energy rates were significantly lower than the U.S. average; but the cap on Choice and the utility-favorable regulatory created by the 2008 energy legislation has led to electricity rates that are higher than the national average. Furthermore, if you look at 2012 at the end, Michigan's rates have climbed above the national average to an average rate difference not seen in over 22 years.

To keep energy-intensive, trade-exposed manufacturers like Hemlock Semiconductor globally competitive, this trend must change.

So in closing, I am thankful for the opportunity to present this information as part of the Governor's policy development process. We at Hemlock Semiconductor are eager to see Michigan's policymakers take the necessary next steps to once again make Michigan's energy policy a competitive advantage for all advanced manufacturers. Thank you so much for your time and attention today.

STEVE BAKKAL: Thank you. Our next presenters are Susan Harley, Michigan Policy Director for Clean Water Action, who will be jointly presenting with Tiffany Hartung, Chapter Conservation Manager for the Sierra Club. Please join me now in welcoming them to the stage.

TIFFANY HARTUNG: While we're waiting, I'll start. My name is Tiffany Hartung, I'm with the Michigan Chapter of the Sierra Club. The Sierra Club works to protect Michigan's environment and communities, and we have about 18,000 members around the state.

SUSAN HARLEY: And I'm Susan Harley, I'm the Michigan Policy Director with Clean Water Action, and we have around 250,000 members here in Michigan.

TIFFANY HARTUNG: And both of us will be jointly presenting on the environment and natural resources and public health aspects of the Michigan energy discussion today, and we're going to be talking about how we can transition Michigan towards a clean energy future.

So the six goals of the Michigan energy plan, just we're going to go through each of these briefly through our slides, and they are again: Controlling costs; minimizing risk; fair rates to customers; promoting economic development; protecting public health and natural resources; and preserving excellent reliability. So to ensure that Michigan has a good energy future and that includes all of these things, these six goals should be adopted into as an official part of the Michigan energy plan and used to develop and guide Michigan's energy decisions in the future.

Utility investments should be tied to achieving these goals, and a utility's return on investment should be connected with achieving those goals. If a utility, if one of our Michigan utilities is unwilling or has been unable to control these costs, then the rate of return should be reduced in order to protect ratepayers.

Long-term community energy planning is

needed for Michigan; many of our local municipal power agencies are going through this process right now. But also, you know, some of our larger utilities are making decisions about retrofitting old power plants, and those decisions are escaping the community energy planning process.

So just some words on energy efficiency. Todd covered a lot about it. But energy efficiency is the cheapest form of new energy that we can create; it's the cheapest and quickest to implement. The recent Michigan Public Service Commission report on the implementation of PA 295, which is our 2008 energy law, found that for every dollar spent on energy optimization, ratepayers see a return of over $3.55 in avoided energy costs. One of those avoided costs comes from avoiding the need for big, new energy generation to be built. The report also found that energy efficiency costs were about, were $20 per megawatt hour versus $133 per megawatt hour for a new coal-fired power plant in Michigan. That's a pretty big gap. Because of this, many other states have requirements for utilities to maximize efficiency first before looking at building new generation.

And while we have the cost of energy efficiency is the lowest, we also have the price of clean

renewable energy, like wind, becoming very competitive. The recent MPSC report also found that the cost of wind to be about $52 per megawatt hour; keep in mind that $133 figure for a new coal-fired power plant. This is about 10 percent less than the cheapest contract prices that utilities were getting over a year and a half ago.

The energy sector in Michigan is changing, and our state program needs to change with it. We fully support the Governor's desire to formulate a no-regrets plan, but Michigan needs to recognize the changes that are taking place and we need to keep up. Michigan sends $1.7 billion a year out of state into other states to bring coal in as we don't produce any of our own coal here. That's a lot of jobs and a lot of energy dollars leaving the state every year. And the cost of coal, to bring coal into Michigan is on the rise. We're a peninsula state and have additional logistical transportation needs when it comes to getting coal here; that plays a factor in that.

The cost of renewables has dropped to a point now that it is, it's half the price of building a new coal-fired power plant, and the cost of producing non-renewable resources from existing sources is renewables are less than that. And renewable energy then is approximately equal to the price of a new natural gas

plant.

And there are also, just to note, there are additional costs to fossil fuels and to our public health and environment that Susan is going to touch on here in a couple minutes that we also need to be considering.

While we've seen an increase in natural gas use for electric generation in Michigan and nationally, something that Michigan needs to keep in mind and our utilities need to keep in mind as we're planning on expanding our reliance on natural gas is that gas prices are very volatile. When our utilities build a new coal plant, or rather a new gas plant, or a coal or a nuclear plant for that matter, they're locking us as ratepayers into that plant for 20 to 30 years, it takes decades to pay that plant off, and then we still, they still have to pay for the fuel cost. If we don't build any more new fossil fuel-reliant plants like this, we can begin to transition to clean energy economy now. Renewable energy costs are very stable, very low risk, as the fuel sources are free. And then just to note that there are a lot of concerns around fracking and new extraction processes for natural gas, and there are new safeguards on the way.

In this chart, this slide is from the

EIA, the Energy Information Administration, and it's just a snapshot of natural gas prices over a 10-year period. You can see the fluctuations in cost here. Again, comparing that, if you compare that to wind or solar where there's no fuel risk to worry about, wind and solar come out definitely as a winner.

Now I'm going to turn it over to Susan to talk about the rest of the goals.

SUSAN HARLEY: Thank you so much, Tiffany.

So one of the things we wanted to talk about today as well is about energy affordability in rates. And what we currently have under our 2008 energy law is an unfair distribution of the rates based on per-meter charges. So we've showed that Detroit Edison customers are paying $3.00 per month for their energy surcharge, however, if those prices were calculated based on their percentage of the overall energy use that they are actually taking up, you'll see that they're only using 36 percent of the power. If you calculated the surcharge based on that, they'd only be paying $1.60 per month. And all of that should be compared to Consumers Energy, which has found this rule, this law to be so cost-effective that their customers are only paying a 52 cent per month surcharge.

Another thing that we should be doing as we look at energy rates is basing these on how much energy is being used in a way to reward conservation efforts. So some of the things that you can put in place would be time-of-use rates, so off-peak use would be less expensive than peak power. Many utilities already have those in place, but there's no across-the-board requirement for that. Additionally, again, that volumetric charge should be what's in place versus per meter.

We also heard a lot about shut-offs. Many other states have rates that are tied to income, so that that's really an equity assessment, you know, what can people pay per month and that's how their utility rates are decided.

We've heard a lot about economic development through these forums, and I think, you know, the numbers go to show for themselves how beneficial these laws have been for Michigan. We heard from Hemlock Semiconductor, and obviously, you know, many billions of dollars coming to the state through that one company. Here at Delta College, they have a program focused on alternative energy and wind turbine technology, you know, these students definitely want to see jobs, and so a policy that promotes investment in renewable energy will

obviously create those jobs. Right now we already have over 20,500 jobs in this sector, bringing around $5 billion per year. So again, any increases in the sector will, you know, bring additional dollars to the state.

Getting into goal No. 5 of Michigan's energy plan, there really needs to be a desire to protect public health and our natural resources. A lot of times people talk about utilities in terms of market-based policies, and one of the real failures of our market-based system are what are called externalities or those external costs, like pollution, that society is paying for and are not necessarily being looked at as costs are being set or rates are being set. Those externalities from burning coal add up to be $1.5 billion in health costs, and that is just from pollution coming from the nine most dirty coal plants in the state.

Some of the other externalities we've seen are carbon dioxide is causing extreme climates, climate change. We saw just last year over 90 percent of our apple and cherry crops lost because of extreme weather.

We also were seeing people die in Michigan because of pollution from coal plants. Estimates say over 678 Michigan residents are dying per year just from the soot or particulate matter from coal

plants.

If you are looking at toxic chemical releases, I pulled the data just for the Karn/Weadock site up the street, and this is just for surface water pollution, right now over 7,245 pounds of contaminants going into our surface waters every year.

Because of these clear health impacts, the Environmental Protection Agency is moving forward with new rules to protect our public health. Some of those rules are falling under the Clean Water Act. Effluent standards or what type of pollution can come out of the pipes into surface waters, these standards are for the first time in 30 years being examined right now. You know, a lot of pollution, like lead, mercury, et cetera, is coming unchecked out of power plants, and so new pollution control requirements will be in place. There's also cooling water requirements under the Clean Water Act that plants will soon be putting in place.

We've heard a lot about the Clean Air Act standards that are now going to being affecting utilities. One of the most important is the Mercury Air Toxic Standards or Mercury MATS standard. We also are expecting carbon rules to be finalized very shortly. There's also stronger standards for soot or particulate matter.

Another important rule that applies to energy generation is the coal ash disposal rule that is being finalized by the EPA.

Again, also there are suits to enforce the existing Clean Air Act requirements that have not been met by our major utilities over the past several decades.

I just wanted to highlight specifically coal ash pollution here in the area. The Karn/Weadock sites have already been cited by the state for leaking arsenic, boron, lithium, mercury, and phosphorus into the Saginaw Bay.

So we heard earlier and we will continue to hear the theme of utility decision making right now is retrofit or retire. We saw some testimony last year from Consumers Energy and DTE that estimated the cost of meeting the new EPA regulations will be between $4 billion and $5.5 billion, and that means decisions need to be made. Consumers Energy has already said that they plan to mothball seven units; Detroit Edison has retirement of one plant and more discussions are happening. Municipal utilities of Holland and Lansing have also announced the need to retire plants because of these new rules.

Another one of the major goals of

Michigan's energy plan needs to be preserving reliability: Renewable energy is the way to do that. One of the major ways is through distributed renewables; having solar panels, wind right at people's home is really the best way to get energy. It will create energy independence, it can also grow jobs in our advanced battery manufacturing as people put storage in their homes for the power that they're making. It's really going to solve our reliability issues. Additionally, right now we are connected to the MISO grid, so that itself provides reliability.

Just putting it all together, integrated resource planning should be required for all utility investments, including the decision of whether or not to retrofit. We do already have these requirements under our Public Act 286, that was part of the clean energy law in 2008; but again, that does not apply to decisions of whether or not to retrofit a plant. So we believe that that process should also apply in this instance, and under the existing integrated resource planning process, the standard is whether or not an investment is the most reasonable and prudent, and it also allows intervenors to bring other costs, those externalities, health costs, environmental costs, into the equations so those are part of the analysis as well.

Again, these conversations will be happening and we want to make sure that they're happening in the public sphere so that communities are able to offer their comments, so that we can look at specific needs of individual areas regarding replacing tax base, creating a good transition with worker training, and other things that we need to take into consideration, like remediation of contaminated sites.

Lastly, just our information if you do want more conversation about this retrofit and retirement discussion that's happening in the community near you. So thank you so much.

STEVE BAKKAL: Thank you, Susan, and thank you, Tiffany. Our next speaker is Monica Martinez, Energy Consultant, who is representing America's Natural Gas Alliance. Please join me in welcoming Monica to the stage.

MONICA MARTINEZ: Good afternoon, I'm Monica Martinez, and I serve as an energy consultant for America's Natural Gas Alliance, or ANGA. I'd like take this moment to commend Governor Snyder, and to thank Chairman Quackenbush and Director Bakkal for bringing the energy discussion to the people. I would also like to commend and thank MPSC and MEDC staff for helping to pull these forums together and to arrange and provide the

online access for public input. And lastly, I would like to apologize in advance to the court reporter who has told me numerous times that I need to slow down when I speak since she's very familiar with me and my quickly speaking, so I will try to do so as well.

As you know from my work having helped craft provisions within the 2000 Energy Customer Choice law and then major sections regarding renewable energy efficiency and regulatory enhancement contained in the 2008 laws, I recognize the importance of the study and the process that is ongoing today. It's a pleasure to speak with each of you and all members of the public today about the outlook for natural gas supply in the U.S. and Michigan.

My comments will address multiple questions posted on the website, but specifically ones regarding the economics of new generation, reliability of generation, availability of home-grown resources, and environmental stewardship.

ANGA is a relatively new organization, having formed roughly four years ago. We are dedicated to increasing the understanding of the environmental, economic and national security benefits of clean, abundant, reliable natural gas. In Michigan, especially on a cold day like today, we understand the importance of

natural gas and home heating. Ensuring the affordability and availability of natural gas can be a matter of safety or tragedy to a household.

We also recognize the economic and environmental benefits of the increased use of natural gas for electric power generation, emitting less than half as much carbon dioxide than coal-producing generation and essentially no mercury, places natural gas as the cleanest reliable energy source available today.

To give you a picture, we represent 27 of North America's largest independent natural gas exploration and production companies. These companies are the leading developers of the shale plays that are transforming the clean energy landscape. And I'd like to acknowledge here in Michigan the Michigan Oil & Gas Association Education Fund, who does an excellent job sharing some of the same messages that I'm going to speak about today.

We are here today because we understand the importance of talking to policymakers, stakeholders, and the general public about natural gas, and more importantly, about energy policy in general.

Just a few years ago, it seemed that any expansion of natural gas would be tied to increased imports of liquefied natural gas. It was stacking up to

be yet another case of U.S. dependence on foreign sources of energy. What a difference those few years have made.

On this slide here, you can see the massive shale plays throughout the country. Natural gas is now produced in 32 out of 50 states in the United States, and it creates jobs in every state, more than 2.8 million jobs total.

So let's just take a look at this natural gas landscape. The Energy Information Administration estimates that there is 542 TCF of recoverable shale gas. Other types of recoverable gas includes 1,661 TCF, that's your traditional tight and coalbed methane. We have a total natural gas reserve resource base of 2,203 TCF; compared to four years ago, that's a 38-percent increase. That's pretty significant.

And if we look at the shale gas revolution in Michigan, it provides us access to everything. In Michigan, natural gas producers supply about 21.8 percent of the supply we use today, and these jobs that they're using are very significant.

If you look in Michigan, we're fortunate enough to have three main shale plays. The Antrim Shale has been in production the longest, producing nearly 3 trillion cubic feet since 1987. We also have the Utica and Collingwood Shales, which are relatively new in

comparison. And Michigan is really unique in this regard. Because of our heavy manufacturing base, like others have already spoken about, we really stand in a position to take care of meeting our energy resource needs, and while at the same time booting our economic prowess.

This is just a picture of horizontal drilling, because I know these issues come up quite frequently. So the story behind the vast increase in natural gas is the development of several technologies that we use in the natural gas production, and modifications in some of these practices that really we have been improving since the last half century. So if you look at the traditional wells, they go straight down. If we look at the other side where the horizontal drilling, we're able to drill down and then go essentially horizontal, make horizontal cuts once the correct depth is achieved. This is an important advancement because it reduces the overall environmental impact of drilling activities. We use less surface activity and less surface disturbance, and allows us to use water more efficiently.

If we look at hydraulic fracturing, it's really a technology that helps us unlock these vast resources. Kind of think of it as ingredients, just like

when you do cooking, when you use the yeast as part of the process, it allows you to bring something forward. Well, the hydraulic fracturing allows water with additives mixed in to go down and really unlock the capabilities and allow the natural gas to come up through the deep rock. I mean when we look at this, it's well beyond the ground water aquifers where the actual shale fractures are being made. And this process really, we believe, is minimally invasive, and we are doing everything we can to ensure that safety is continuing to be our number one priority.

We're especially proud of our ANGA members because they are leading the way continually through all these processes, utilizing innovative methods to really continue to unlock the natural resources that are available. Some of these methods that are continually being conducted include finding alternatives for the chemistry of fluids and hydraulic fracturing additives, and new technologies for water management and recycling. This is all key to our success.

Just to reiterate, when we talk really about the abundance at any, you know, by any estimate, and this just describes several estimates that have been made that are out there, these are estimates from the Department of Energy, the Energy Information

Administration, the Potential Gas Committee, MIT, all of them really reiterate the availability and really reemphasize that natural gas is a really potential resource and existing resource here in the United States.

I know some folks have mentioned some issues with price and long-term price stability, but cost is always a consideration, so I'm glad that they bring these issues up. And as some commenters have expressed before, natural gas does have some historical price spikes. As you might recall back to a few slides earlier where we are looking at the shale plays throughout the country, that allows us to insulate ourselves geographically, where previously we have not been able to do that. You can remember when Hurricanes Katrina and Rita slammed the gulf coast, gas prices jumped substantially; however, a few years later when Hurricane Ike hit, we didn't have the same spike in prices, and a lot of that is due to the new geographic diversity that we have with these shale plays. So that really is shifting. And I understand, as a former Commissioner of the PSC, both the importance of physical and financial instruments, and I'm not suggesting in any way that we do without them. However, based on the outlook, the state and companies are in prime position to find the best solution for energy needs, while at the same time

bringing great cost benefits to customers.

When we continue to look at the resources around the natural gas sector, we can see the U.S. storage capacity and how much that plays with our ability to choosing natural gas as an energy source of the future. With over 4,500 of Bcf working storage, Michigan ranks number one in the country with over 645 Bcf. I always like to brag that because in comparison to Texas, always thinking that they're the big dog in the play, they are behind us at a distant second with only 438 Bcf of working gas. So this is significant, and this places Michigan, when we think about our resources, in a unique position.

And yes, when we look at information that is out there, including that from the Energy Information Administration, there is a clean energy future on the way. Renewable energy and natural gas are the only fuel sources that are expected to grow over the next 25 years; looking at natural gas moving from 25 to 30 percent, renewables from 13 to 16 percent. There are losses being taken on the nuclear and coal sector.

This information is from the Energy Information Administration as well. Looking at 2017 expected cost, these are levelized costs for the various generating technologies. As you can see, natural gas,

the combined-cycle unit, really does bring down and is really the hands-down winner with the lower total system levelized cost per kilowatt hour. And this information is simply taken from the federal government.

When we think about reliability, reliability is always key. We certainly need to make sure that we're doing everything we can to have a reliable grid. Many of us remember not too long ago the great North American blackout where many of us suffered some outages, others in Michigan didn't, but, you know, that really needs to be a key in our mind. We need to have a system that's going to be reliable and help power those manufacturing needs that we do have in our state.

If we look at this, these are both for spinning and quick-start ramp-up rates for different types of energy resources. And as you can see, once again, natural gas really does help lead that way. When we talk about spinning, that means they're already synchronized with the grid and they're sort of online with the grid already. Quick start isn't, so it takes usually a little bit longer to ramp up. And those are just the pictures of that.

On this slide, unfortunately the renewable energy resources of solar and wind are not included, mostly because their ability to ramp up with

demand is not able to be there as a reliable resource according to the grid operators like MISO. But they certainly do play an important role in our economy and our energy diversification.

This next slide is really about shale gas and our economy. As I mentioned before, nationally we really do have a great outlook for the various values and ability for natural gas in our economy, and this goes well with Michigan as well. Standing at about 28,000 jobs today, by 2035 we expect it to reach about 63,000 jobs. And really that really does bring an economic value add, and we think that's an important thing when we talk about the prosperity for our state.

And I hope I stayed within the time lines. So thank you very much for allowing me to be here on behalf of ANGA. And once again, I apologize if I was speaking to quickly; I tried to go a little bit slower. So thank you. And ANGA will be also submitting written questions and written responses to some of the questions that are there. And thank you so much for your time today.

STEVE BAKKAL: Thank you, Monica.

Our next speaker is Ronn Rasmussen, Vice President of Rates and Regulation for Consumers Energy. Please join me in welcoming Ronn to the stage.

RONN RASMUSSEN: Good afternoon. I also would like to thank Chairman Quackenbush and Director Bakkal for the time and effort today, and maybe as importantly, the ongoing time and effort that will be dedicated to this process. As I listened to the diversity of opinion in this room and recognize that we're doing it six other times, and written comments from those who will not speak, it amazes me when I think of what's going to come into your offices. So to you and your teams, thank you.

I would also observe that it's highly likely that parties with differing opinions will submit the exact same data and reach different conclusions with it, because some of the things that I've seen earlier today, I will use that data to tell a different story. That would tell me that I've got serious disagreement with earlier presenters on certain facts, and I'm not here to have a debate with them. What I'll do is try to take a little different tact in how I'm talking about this discussion today, especially today; we will follow up with written responses, as you would imagine. I will tell you Consumers Energy has prepared responses to all 84 questions, so what I thought we would do today is I will read those responses into the record. Thank you. I obviously won't do that.

So before we get started, if you don't know who Consumers Energy is, we are obviously a Michigan company. We're focused in Michigan, we're investing in Michigan, we have been for 125 years, and we intend to be for 125 more. You can see the numbers on this slide, $6 1/2 billion over the next five years in safe, reliable, and affordable energy.

We'll talk about affordable. We have focused intently on directing that investment to Michigan, both the ongoing investment and our ongoing spend; so an investment dollar is a long-term investment. We also spend in Michigan a lot of money to bring service to our customers, we are intently focusing money on Michigan suppliers. We're a charter member of the Governor's Pure Michigan Business Connect program, and we're very proud of that. We are here in Michigan investing, and here to stay.

O.K. The electric industry, it's a little bit unique. Moves at speed of light, can't store the product, customers want it instantaneously. It is the most volatile commodity in the world today. The price swings on electric energy, and you can see why, just from the operating characteristics of it. You might find it interesting to note that historically, natural gas has been the second most volatile commodity. So if

you think of any item that you buy and the price swings that you see in it, I'm telling you that our industry has two of the most, or the two most volatile commodities in play. That makes it critical to be able to have long-term planning and certain regulatory environment in place as we make decisions on how to deliver these products to our customers.

O.K. Let's talk about Michigan's deregulation experiment. And let's not fight about whether it worked or not from a price perspective, a customer-savings perspective, or even if it's the right or wrong thing to do. I'd like to make an observation of what occurred during our full deregulation approach, or full Choice approach, I should say, because we never really deregulated; the utility was always the backstop supplier at regulated rates, which would obviously create a lower of cost or the market discussion. But the item I wanted to point out to you is that during that period of time which created huge uncertainty for the utilities in Michigan, investment in Michigan dried up. Investors were not interested in Michigan's utilities, and the utilities had a very unsure economic environment, and investment in Michigan dried up.

O.K. That comes into play as you look at rate curves. And again, I'm not here to debate whether

the rate curves are accurate or not, but when you go for years with maybe rate freezes and no investment, and then when you come out that environment, there is a pent-up demand and there is a huge reliability issue that has to be addressed, also. Long-term planning, stable long-term planning is a far more desirable place to be.

O.K. So we have the 2008 energy law. I might look at the four main components that were noted up here, and I might tell you there are things in each one of those that as a utility I just don't like very much. But one of the words that's very important in our industry is balance. I don't think you would expect a utility to like the fact that 10 percent of its customers can choose to buy its product somewhere else. O.K. It's a fact, it's a part of a balanced energy law, we understand that.

Some don't like renewable energy -- I can see the representation here -- and some do. Another balanced piece of the law.

Energy optimization, good cost-effective energy optimization, we've heard it discussed today. That's a great place to be. But how many businesses really actively contact their customers and ask them not to buy their product. That's a pretty unique place to be, yet that's where we are.

Underneath all of that, a streamlined regulatory process is critical; it's critical because there are things in each of the components of the law that maybe aren't perfect for any one particular company or person, but they hold together fairly well. So obviously we believe that 2008 energy law has balance.

O.K. Let's talk price a little bit. It is a very important item; price, reliability, stability and investment.

Choice or not Choice? I'll stay away from the debate maybe on the top half of the slide here. What I'd like to point out, there is no doubt that in the early 2000s a significant number of Consumers and DTE customers exercised Choice. The marketplace had a better price than the utilities did at that point in time. We talked about the volatility of the commodity; natural gas prices, I heard hurricanes mentioned, there was a lot of things going on that caused customers to be able to save money at certain points in time, and then the prices changed. Customers returned to the utilities, as you can see in the green arrow there, and then more recently gas prices and capacity excess have put us in a position where the market price is lower than utility rates. And I say the market price, and I emphasize it, because there are couple comparisons that we need to make as we look at

what's going on in the electric industry today. The market price, which is primarily a variable cost market right now and does not recognize fixed-cost assets, is lower. That's because utilities have significant fixed-cost assets in their cost portfolio. The market's lower, Choice works. We get that. O.K. How long that will happen is what we have to look at very carefully.

Short term. How many years is short term? How many years is long term? Utilities build 40- to 50-year assets to provide consistent service over that long planning horizon. I might argue that a short-term anomaly is five to six to seven years. Those are the types of changes in price that we see up there. Five years in the beginning, another four to five in the middle, and now it's been three to four, going on four years on the right side of the chart. It is definitely cyclical, and we at the utilities believe that more long-term stability is optimal versus cyclical pricing with customers going from Choice and back, Choice and back, but always at a lower of cost per market. We don't think that makes a lot of sense.

So that was one price comparison, the market versus utility rates. But there's another one, it's utility rates versus utility rates, it's across the country, it's how are utilities doing and why. We would

submit that states with deregulation started with higher prices and saw price increases, and states with regulation generally started with lower prices and saw the same price increases. So what did I just say? No matter where you started, utility rates are increasing. That's displayed by the chart on the right. And I saw data earlier today, let's be fair, right, different periods of time, different data, different states, different averages, residential, industrial, it's a complex world that we live in. Others can reach different conclusions, but we would maintain that deregulation does not solve a price issue if your state starts with a price issue.

As a matter of fact, I think I recall the President in San Francisco at an energy conference saying something to the effect of the price of electric energy will necessarily skyrocket. That was a recognition that price increases were coming. For some the environmental discussion that we've had today, for changes in commodity prices, it was evident that electric prices were going up, and we have seen that happen in all states.

Let's talk about reliability just for a second. I talk about a period of time when utilities had a difficult time investing because the environment was so uncertain. So in 2006 Consumers Energy hit a peak day,

and we had significant outages on our system on that peak day, it's an electric peak day, because our system couldn't handle the load that we had mid summer. Fast forward to a period of time where we have been able to make more investment in a more certain environment, and last summer we exceeded that 2006 peak, and we had 60-percent fewer weather-related outages on our system. That's for two reasons. Number one, we've been able to invest in a distribution system to make sure it can handle the load; and number two the same for the generation system, our generation fleet was up and running full power when we needed it on the hottest day of the year; and quite frankly, that's when most of you need it and want it the most. Stable environment.

O.K. I can't go on without talking about natural gas a little bit; Monica just hit on it as well. Natural gas prices are down, they're viewed to stay down for quite a while. Michigan has a huge natural gas infrastructure. I won't repeat Monica's data. It's big, and we're part of it. We view it in two ways: Number one, it's a great infrastructure to serve our gas customers. Gas customers are regulated, too, part of the ongoing debate as to what regulation should look like. Big infrastructure investment to serve our gas customers. Incrementally, many people believe that the next fuel for

generation on the electric side of business will be natural gas. To the extent Michigan continues to invest in natural gas, infrastructure will be able to attract electric investment to Michigan. Electric generators have options as to where to locate, we would want them in Michigan, and our gas infrastructure positions us well to do that in the state. As a matter of fact, Consumers has announced that we intend to build a gas-fired unit in Genesee County, $750 million investment, to make sure that we have stable energy supplies as we move forward. That's pretty big deal in our mind, we hope it is in yours, as we are here to serve well into the future.

So let me conclude with an investment story, or investment summary. Long-term, reasonable, effective investments are what utilities have done for years on behalf of customers, not on behalf of the utilities, on behalf of our customers; that's why we're here, that's what we intend to keep doing as we move into the future is investing for you, the customers of the State of Michigan.

Chairman Quackenbush, Director Bakkal, we will submit a lot of data to you, and I apologize in advance for that, except maybe I'll say, you asked for it. Thank you very much.

STEVE BAKKAL: Thank you, Ronn. We look

forward to getting that.

That concludes our formal agenda presentations. Now we'll be taking a short break. Why don't we reconvene at ten after 3:00, and we'll come back with public comments. Again, if you'd like to speak, please complete a comment card at the welcome desk. Thank you.

(At 2:56 p.m., there was a 20-minute recess.)

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STEVE BAKKAL: O.K. Why don't we begin, we've got a number of requests to speak. Actually, we have about 38 requests. Just to put that in perspective, in Lansing we had about 30 requests to speak, and we ended about this time -- or started about this time, and we were able to complete by about 5:00 p.m. And in Grand Rapids, we had over 80 requests to speak, we went until 6:00 o'clock, and still had a number of requests that we couldn't get to. So today we're going to plan to go through all of them, I think it's manageable to do. But I do ask that, please, everyone, adhere to the time allotted. We can give everyone three minutes, approximately three minutes to speak, that will get us through all the speakers today, and it will get us out of here a little bit past 5:00. So again, I please ask that you respect everybody's desire to speak and stick to your

allotted time.

The way we're going to do this, I'm going call up four speakers at a time, and when I call up your name, if you can just make yourself -- if you can come up to and sit up in the front part of the auditorium, and the first speaker can just make their way up to the stage, and I will call your name up again. Just remember the order that I'm calling your names up, and just come up after the speakers are finished.

So with that, we can begin. Also, before I forget, if you have written prepared comments, please leave those with us, it will greatly help the court reporter in gathering her notes.

So we'll introduce our first four speakers today. First one is Pat Race, Michael Langenburg, Mike Shaltz, or Mike Schulte -- I'm sorry -- and Paul Beck, if you guys can please come up to the front, and Pat, come up to the stage. Thank you.

PAT RACE: Hello. My name is Pat Race, I am the president of a small software company, but for three years, I worked for a company that helped engineers and scientists have creative ideas, and so my take on this whole discussion is what do we do about the innovation that's needed to bring us to clean energy.

Next slide. And if you're wondering what

these three young women are doing and what they have to do with this, I'll mention that in a little while.

So replacing the burning of fossil fuels needs innovation. What is that? Everybody talks about what does it really mean. It used to be I would address hotel rooms full of scientists and engineers with about half as many people here, and the idea was to sell them the software that helped them get better ideas, and one of the ways we illustrated this to them is we would talk about drying as a process; drying is really separating a substance and moving it away. And we would ask these scientists and engineers how many ways did they know of to move things, and they would commonly get seven or eight or nine as they were trying to recall the things outside of their discipline that they learned when they were in college, and we would show them really there were 42 ways to move liquids, and they would say, amazing, but they could see how bringing information from these other domains helped them work on their own problems.

So what do these young women have to do with that process? They are paddling a concrete canoe. Why would they be paddling a concrete canoe, a concrete canoe they designed and built themselves? Because they were part of a race. This is something that happens in engineering schools, where they focus on a project in

order to get the whole sense of development into the students. We're familiar with that because the University of Michigan solar car team wins very often in these competitions. I have showed you approximately 40 schools right there where there are very talented groups of engineers working on the kind of problems that need to be solved.

Now, what are two possible ways to look at a clean energy future? One is having liquid solar cells. Another is bringing the heat of the earth up from four miles down. You may not know it, but all the heat we need right now to replace fossil fuels is right below us. So those are two ideas where creativity could bring us the green future without the pollution of CO2. Why doesn't it happen? $350 billion of research have been spent in the last ten years, most of it on oil and natural gas. Geothermal, the one that I discussed, almost nothing on the edge.

So we have tremendous locations in Michigan where technological progress can be made and is being made. If you marry that together with our private resources of engineering talent, scientific inquiry, we can meet the challenge that's required. But what the State of Michigan needs to do is basically support the partnership between the universities and business, and

they need to do it in a way that protects our welfare and our environment. Thank you.

MICHAEL LANGENBURG: How you doing today. My name is Mike Langenburg with Midland Solar Applications, and the reason for my purpose here today is for a solar community, I guess, for Michigan.

The renewable energy for Michigan, or for the -- the money for renewable projects in Michigan comes from donations, it's not even donations actually, it's on your electric bill, that you contribute every month to the utility companies, and they in turn use the money to do renewable projects.

The concern I have is that the solar -- how should I say it -- projects are not getting a fair shake at this because of they're saying the cost of solar and what it contributes to the industry. Currently, between DTE and Consumers, they have collected over $480 million in this on their billing, O.K., and in doing that, if they were to allow customers such as yourself to install solar or small wind at the point of use, which has a huge benefit to it, there's no transmission loss, by doing that we could have installed and paid for 240 megawatts of power, and it all be at point of use. And distributed power is the key to this, O.K., because it's not being transmitted over long transmission lines, there

is no infrastructure needed to do this, these smaller projects.

Is there a winner or loser in the renewable energy field? Is solar better than wind, wind better than solar, or is natural gas the way to go? I can't say either one, any of the above are the best way to go. I believe that all three should be done and used, and then over time a winner would possibly come.

There are good solar programs offered in other states, and other states wish, with more cloud cover and actually worse solar conditions than what we have, and they are very successful there.

And I actually have an excellent slide show to do, and I was not aware that I could bring it, so I apologize for this.

Michigan did have a couple excellent solar programs that were in use by the utilities; and currently, they are still oversubscribed. People do want solar in Michigan, it does work very well. I have it on my business; I potentially will not see a utility bill for the next 30 years, which is not so much beneficial to the utility companies, but it is huge benefit to Michigan and its customers. And if there were another program -- sorry, I'm almost done. If there was another program offered, I'm pretty certain it would be oversubscribed,

too, as the previous ones have been.

So all's I'm asking for is from our senators and our policymakers to look at just putting a sustainable solar program in place is what we'd like to see, something that would actually carry jobs, because it would create many jobs for the State of Michigan. I thank you all. Thank you very much.

MIKE SCHULTE: My name is Mike Schulte, and I am a staff rep for Communication Workers of America. We are a union that represents about 12,000 employees in the State of Michigan, from telecommunications to public sector to manufacturing to airlines, so we're pretty diverse.

As someone who cares about the better future our for our state's economy and environment, for not only our members, my family, for generations in the future, a forward-thinking approach to Michigan's energy future must include renewable electricity goals and maintaining and expanding clean energy investments that have already opened the door to make Michigan a powerhouse in renewable energy. Here in Michigan, both wind energy and solar energy are growing sectors that we can no longer afford to let other states dominate.

Today the wind industry in Michigan shows tremendous potential for growth. According to the

American Wind Energy Association, wind energy powers approximately 130,000 homes in Michigan, and directly or indirectly supports 4,000 to 5,000 jobs in our state currently.

We have far from utilized all of our wind energy capacity, though. According to a research -- excuse me -- resource assessment from the Natural Renewable Energy Lab, Michigan wind resources could provide up to 160 percent of the state's current electricity needs. Putting wind energy to work can help meet our renewable energy goals, as well as our economic goals of creating good, strong jobs for our families.

According to the Natural Resource Council, at one wind farm, 1,079 direct jobs are created by dozens of companies throughout the multi-year development; manufacturing, construction, and maintenance phases of a wind farm. These jobs aren't just created at the actual wind farm themselves, they are created throughout the sizeable wind farm ecostructure, the chain of activities that over time comprise the many steps of building a wind farm.

Wind industry-related manufacturing has continued to expand its presence in this state. According to the American Wind Energy Association, many Michigan companies have already began supplying to the

wind industry. There are currently at least 31 facilities in Michigan manufacturing components for the wind energy industry. And according to the American Wind Energy Association, the wind industry across the country has the potential growth from its current 75,000 jobs to over 100,000 jobs in four years, and up to a possible half million jobs by 2030. Michigan stands in line to grow with these jobs and gain these jobs. Just seven years ago, there were only 25 percent of wind turbines installed in the United States were built here in the United States. Now 60 percent of every wind turbine installed in America is made in America with American workers.

We can do the same thing with solar and other renewable energy types. Also, according to the National Resource Defense Council, between 2003 and 2010, the solar industry was one of the fastest growing segments of Michigan's economy, increasing on a rate of 15.8 percent each year. 121 companies in Michigan manufacture components for the solar market, and that is adding 6,300 jobs to our economy.

We can grow wind and solar even faster if we lead the charge in innovation and keep good 21st century jobs for American workers and Michigan workers. We need to double down on the industry of the 21st

century that will build a cleaner, more efficient energy and more competitive American economy. Clean energy industries are creating more good jobs and represent a second chance for the millions of Americans who are still searching for these good jobs that can support their families.

Apart from federal policies such as the Recovery Act that helped level the global playing field, state incentives and policies must help to support these industries. Initiatives that continue to promote the development of clean energy, renewable energy, should continue to be our priority. Raising support and awareness about the importance of renewable energy sources such as wind and solar will be a lifeline to the budding renewable energy industry and the jobs that they have created and will continue to create for us in the future. Thank you.

STEVE BAKKAL: I had called Paul Beck. I'm not sure if he's still here or not. No. O.K.

We'll move on to our next four public speakers. Just a reminder, please state your name and where you're from when you speak, and also we have a staff member from the PSC here, please keep an eye on her, she's going to tell you when your time is getting close to finishing.

Our next four speakers are Lori Franson, Yvonne Bushey, Mark Polega, and Tarot Denger, please come up to the front. And Lori, please come up to the stage.

LORI FRANSON: Hi. My name is Lori Franson. I'm a registered nurse, and I'm from Midland.

I want to thank Governor Snyder for seeking public input and data on Michigan's energy policy and where Michigan needs to be positioned to ensure reliable, affordable energy that is protective of Michigan's environmental health and the public health of residents. A proactive, progressive energy policy in Michigan for the years ahead will position this state to reap the benefits of increased manufacturing, increased jobs for our residents, higher technology being utilized to retain our college-educated youth, and less money leaving our state that is spent on electric generation that harms our natural resources and public health.

Increasing Michigan's renewable energy portfolio and energy efficiency investments is of paramount importance. Only 3.9 percent of Michigan's electricity is from renewable resources. 29 states have renewable energy portfolios that exceed Michigan's. Illinois adopted a 25 percent by 2025 goal, and cost savings to Illinois businesses and families are reported to be $176 billion, according to the Illinois Power

Agency. Reliability has been demonstrated in those states utilizing a larger percentage of renewable energy sources.

States with higher renewable energy portfolios have implemented a variety of cost-control measures designed to promote affordability. Cost-control measures currently being implemented are: Alternative compliance payments that allow electric suppliers to make incremental payments to meet renewable standards instead of purchasing credits or contracting with renewable energy projects. The alternative compliance rate is set by a regulator. Rate impact caps that limit increased electricity rates associated with renewable energy policy; per-customer cost caps that limit the dollar amount a customer's bill can increase; contract price caps that limit the price a renewable energy generator can charge utilities for the power and the funding limits.

Additional cost control measures to explore should center on increasing cost-effective energy efficiency investments. Energy efficiency investments reduce the need for energy during peak usage periods, and are cost-effective to meet future energy needs.

Michigan's clean energy sector currently is supporting 20,500 jobs and $5 billion in economic

activity. Imagine how that would be increased if this state's 54,000 megawatts of high-quality, land-based wind potential existing, identified by the National Renewable Energy Laboratory, was utilized.

We simply can not continue to remain in the dark ages in this state and expect our educated youth to stay in a state that has a regressive, costly energy policy that also degrades the environment, adversely affects public health, and doesn't increase jobs. Increasing Michigan's renewable energy portfolio and increasing energy efficiency investments will produce benefits far exceeding the cost. Thank you.

YVONNE BUSHEY: Good afternoon. My name is Yvonne Bushey. I am a Huron County resident, and a member of an organization called Citizens for Wind Energy. I'd like to thank the committee organizing this opportunity to speak today. This is a very important issue.

A number of my neighbors and other Huron County citizens banded together in 2010 as a development of wind farms in our county was just beginning. We came together as a counterweight to others in the county who were opposed to wind energy development of any kind. We joined together to support the well-considered, responsible development of wind energy resources in our

county because we believe that harnessing our wind had the potential to produce a number of important benefits for our community. Those benefits, some of those benefits are:

Greater local tax revenues that would benefit our local schools, libraries, veterans' programs, senior citizens, public transportation, and other essential services.

Also, it was the possibility to attract manufacturers of wind turbine components as related supplies.

And an increase in local employment associated with building the wind farms and the related infrastructures.

Yes, these benefits are now realized as wind farms have been developed and are operating in Huron County, and more are in the planning and developing stage here.

I am aware that many alternative energy supporters have attended the first two energy forums, urging you to adopt policies to significantly increase Michigan's renewable portfolio standard. I am aware that some persons do not support the development of wind energy. The majority of our residents do support and encourage wind energy development.

Wind turbines are technological marvels.

They are making Michigan's electric generation mix cleaner. They also change the look, feel and character of a community, the communities that host them, as has all of progress in our environment. We look around, we have new industries, changes the looks of your community; electric lines when they came in and their poles; communication towers came in; corn dryers in the farm area; expressways; big malls, they all change our environment, and the look of our environment. That's part of progress.

We are fortunate in Huron County to work with a number of very responsible, considerate wind developers, including DTE Energy and Consumers Power.

I encourage you to recommend a policy that encourages the thoughtful expansion of Michigan's wind portfolio. We would like to see a policy that encourages wind development at a pace that balances the cost of development, the benefits to the electric generation mix and our local concerns.

On a personal note, my husband and I are fourth generation farmers, we have grandchildren now wishing to also be farmers in a healthy environment. Please let us have that. Thank you, Chairman Quackenbush and Director Bakkal, for this opportunity.

MARK POLEGA: Good afternoon. My name is

Mark Polega, and I'm the Grants and Communications Director with Mid Michigan Community Action Agency. We serve low- and moderate-low-income individuals and families across six counties; Bay, Midland, Gladwin, Clare, Mecosta and Osceola.

I want to thank both the Governor and the committee for the opportunity to present our perspectives about our state's energy policy. We applaud this initiative because it is vitally important for policymakers to consider this topic from the perspective of the men, women and families that we serve.

Our agency was founded in 1966 to serve families in need of emergency assistance, financial literacy and budget management; securing safe, affordable housing, early childhood development and senior programs, and energy efficiency services.

We are one of 30 agencies in Michigan covering all 83 counties. Our common goal is to enable our clients to become self-sufficient, to provide a hand-up versus a handout. We do this by assessing a customer's complete situation, identify barriers to their self-sufficiency, and then provide applicable services or connect them with other community resources.

While we have many programs, weatherization assistance, which you heard about earlier,

is an important highlight as it helps save energy in the home, makes homes healthier and more affordable, allowing low-income families to pay for their energy bills more easily.

Weatherization assistance workers across the state are experienced, well-trained in providing high-quality service that follow both Department of Energy and State of Michigan standards.

Over the past three years, our agency alone has weatherized over 1,700 households. At present, we have 224 families on a wait list, and hundreds more that are on a wait list just to receive an application. The need for assistance for low-income households remains great. Despite the impact and success of the weatherization assistance program, funding allocations are unstable.

The energy optimization, or EO, funding has been an excellent funding resource to help leverage weatherization dollars and extend the number of households that can be served; however, without other funding sources, the numbers of homes that can be assisted are reduced even with EO money available since it is only a leveraging fund. Since the institution of the EO program, it has received favorable reviews from the Michigan Public Service Commission.

And to wrap it up, we believe that any energy policy adopted by policymakers needs to build on the success of both the EO and the weatherization programs.

I'd like to thank you once again, Chairman Quackenbush and Director Bakkal, for the opportunity to speak today.

TAROT DENGER: Hello. My name is Tarot Denger, I'm from Montrose in Genesee County.

And I have conceived an idea to make the dams in Flint, Michigan, be able to generate electric power. I originally submitted this to the emergency manager of Flint when he was first appointed, but nothing has come of it, and I'm hoping that by taking this project statewide, the project retrofitting old hydroelectric dams and flood control dams to be able to generate electricity would create much more and much cheaper power across the entire state. This should reduce the cost for manufacturers, as some of us have pointed out is the electrical cost for the manufacturers is nearly driving them away, and it is also causing severe problems being able to keep homes heated through the winter.

So, I think especially good points as far as these dams is the Holloway Reservoir dam, the Western

Road dam that makes Mott Lake, the Hamilton Street dam in Flint, which is not a hydroelectric dam but is falling apart as it is, and so it needs to be refitted, so when we refit it, why don't we just make it generate electricity. Other perfect examples are the Sanford and Secord Lake dams and the Tittabawassee River, the Bond Falls flowage in Ontonagon County in the Upper Peninsula, as well as the Dead River near Marquette.

And another thing about many of these dams, especially the ones such as those on the Flint River and Tittabawassee, is that they were in either moderately or heavily industrialized areas, so the power would be generated very, very near where it would be used by the heavy industrial customers. Thank you.

STEVE BAKKAL: Our next four speakers are Rich Benson, Eric Martis, Andreas Toich, and Monica Essenmacher, please come up to the front.

RICH BENSON: Good afternoon. My name is Rich Benson, I represent Atwell.

I believe the issue of safeguarding Michigan's energy future is a key to ensuring that our state remains attractive to families and businesses, and offers the best opportunities for sustained economic growth.

But before I begin, I would like to thank

Governor Rick Snyder, MPSC Chairman John Quackenbush, Michigan Energy Office Director Steve Bakkal, and their staffs for putting together this forum. We believe it is the best approach to tackle such an important issue and support it wholeheartedly.

I represent Atwell, we are a group of about 450 employees that are concerned about and have a stake in what Michigan's electricity framework looks like over the next several decades. Our company does construction management, we do surveying, we do environmental, we do real estate acquisitions.

But my view of the current environment for energy in Michigan and the role electric power plays in the success of my members suggests that the state's current law is working as it was designed to. The current system makes sure that the lights come on and that the energy is readily available to grow that economy. Taken a step further, raising the ten-percent cap and moving to a deregulated market risks the hundred-year history local utilities have providing power when we need it.

Michigan's 2008 energy laws, passed by the legislature in a bipartisan manner, have passed the way for the state's largest investments in renewable energy. It has also led to programs that have encouraged

the use of energy efficiency, as well as programs designed to assist homes and businesses better manage their energy usage. For example, my local utility is DTE Energy. It is investing more than $2 billion in renewable energy, wind, solar, and hydroelectric, as a result of the 2008 energy package. They are also planning more than 600 million in environmental upgrades to their facilities because of the state's comprehensive energy plan currently on the books.

We also believe Michigan's current model offers businesses the opportunity to better support the state's economic recovery through greater investments in programs like the Pure Michigan Business Connect initiative. Michigan-based companies are providing goods and services and creating jobs because of the favorable business environment. Last year, DTE Energy spent more than $800 million with Michigan suppliers. It's that kind of investment that allows companies like mine to create some of the near 7,000 full-time jobs in Michigan in 2012.

Of course, all processes can be improved, and the current regulatory model in Michigan is no exception. We believe there can be constructive criticism, discussion around how to better ensure that our customers get consistent quality services at a

reasonable price. That is why these deliberative fact-finding forums work. We thank you. In order to make these he discussions fruitful, we need to understand where the current system has been successful. We will be happy to provide any additional information to the Chairman that helps this process.

Again, we'd like to thank Governor Snyder, Chairman Quackenbush, Commissioner Bakkal, and the committee for this opportunity to share our perspectives on the issue of Michigan's energy future. Thank you.

ERIC MARTIS: Hello. My name is Eric Martis, and I am a member of the Interstate Informed Citizens Coalition. Before I begin my comments, I would like to thank Governor Snyder for hosting the energy roundtable, and I would also like to thank Mr. Bakkal and Mr. Quackenbush for being here today.

The documents that I am turning in today are from all over the world. These documents contain something that many of you, many here have never heard of: The truth about the United States wind industry. And the information that I am about to provide you will make clear Michigan and the United States need to develop their own energy policy. Following the lead of European countries like Germany is just plain wrong.

Now, although the paid operatives from Michigan Energy, Michigan Jobs, Michigan Land Use Institute, Sierra Club, and Michigan League of Conservation Voters, et cetera, have repeatedly said we should follow Germany's lead in the area of wind energy, that certainly doesn't seem to be the right path for me.

Here are some facts about energy policy in Germany.

1. Germany is one of the biggest proponents of wind energy.

2. Germany is such a large proponent of wind energy that they are shutting down their nuclear plants and replacing them with coal plants.

Germany's environmental and economic ministers are now proposing cuts to their subsidies to renewable energy because of the cost. They have proposed a cut of 20 percent in on-shore wind feed-in tariffs. Also, on-shore and off-shore wind will be excluded from using the guaranteed feed-in tariffs after July 2013.

Subsidies for energy producers in Germany are causing electricity prices for ordinary consumers and industry to rise. Germany's biggest industrial power consumers have seen electricity increase nearly 40 percent in the last five years.

And to put icing on the cake, for the first time in

25 years, despite all the wind energy, Germany's CO2 emissions actually increased. That is because their move towards intermittent renewables, while shutting down nuclear plants, forced Germany towards coal to fulfill their base load energy needs. This is the reality in Germany.

I will now move on to some inconvenient truths about wind energy in the United States.

Industrial wind has not replaced one coal plant in the U.S. despite the overly subsidized wind rush that has taken place in the nation.

In Falmouth, Massachusetts, they are shutting down industrial wind turbines because of adverse health effects on local residents.

In light of clear acknowledgment of the issues in Falmouth, as well as recent studies at Shirley Wind in Wisconsin, it is evident that industrial wind is adding to the negative effects rather than solving those created by fossil fuel generation.

Industrial wind turbines kill millions of birds and bats each year.

Many of those birds that are killed by industrial wind turbines are endangered or protected species, not your common sparrow.

The lobbyist group American Wind Energy Association

board is filled with companies that are among the largest fossil fuel generators in the country, and are frequently the targets of environmental groups. For example, NextEra is the fourth largest fossil fuel generation in the U.S.; BP, the famous gulf oil spill company, is also on the AWEA board; not to mention the multinational E.On, amongst others.

And so in conclusion, if this is truly a race in Michigan for the most environmentally friendly and cost-effective ways to produce energy, then we should run away from the failing German model as fast as we can. And we must also run away from industrial wind salesmen who seek to tie us to fossil fuels forever. It is time to concentrate on science-based energy policy, energy efficiency, and less intrusive, more efficient items look rooftop solar. Thank you.

ANDREAS TOICH: Hi, I'm Andreas Toich. I'm the pastor of Messiah Lutheran Church in Bay City, and also a member of the Michigan Interfaith Power and Light Association.

I almost feel like speaking on behalf of coal, which is not getting a lot of press today.

So I want to talk about what our congregation has been doing for the past about 15 years in terms of trying to be energy efficient. Congregations

are stewards of resources. Of our own congregational members, they provide us with resources that we have to spend correctly. So we have on a regular basis looked for ways to find the most energy efficient ways to continue to carry out our work. We have been fortunate that we have used all the technologies that are available for a local congregation, for an individual home to make that happen. And so last year, for example, we had three months in which we didn't have to pay Consumers because our bills didn't cover what we had paid ahead. So we were very delighted. And that's really our plan, is to become the most efficient that we can.

I think any policy that is passed by the State of Michigan should help to incentivize local individuals to make a difference in their own place so that they use energy more efficient, more effectively, and in a better way so that all of us might have enough.

MONICA ESSENMACHER: I'm Monica Essenmacher from Midland, although my heart belongs to Huron County.

As head of the Port Crescent Hawk Watch in Huron County, I have been collecting spring hawk migration data since 1992, recording an average of 10,000 migrant raptors each season of 15 plus species. I am here today to advocate for wildlife. In particular, for

the countless thousands of migrant hawks and bats poised for death by way of green wind.

Proponents of the green wind, I am dumbfounded to note, include the Michigan League of Conservation Voters, the Michigan Environmental Council, Union of Concerned Scientists, Michigan Land Use Institute, Michigan Energy, Michigan Jobs, and unimaginable to me, the Sierra Club. Let me assure you, they do not speak for me. They do not speak for me, and they do not speak for any other conservationists that I know.

Turbines kill. Period. They kill eagles, hawks, falcons, and more. They kill geese, swans, ducks, and more. They kill migratory bat species in Michigan; this includes the federally endangered Indiana bat. Google it. Birds die, bats die, in vast numbers across the globe. The actual numbers, no one knows. It's really too bad that there's no technology like video or infrared monitoring to help us reach those numbers. Oh, wait a minute, why there is such technology. But who in the pro-wind fraternity wants to know the actual mortality rates?

Friends, bird- and bat-safe industrial turbines have been designed and are available for purchase today. Why have I heard no green group state,

we support wind energy, but first it has to be safe for wildlife and humans alike? Did silent spring teach us nothing?

I have to tell you that I can not stand it that so many self-proclaimed conservationists are so certain that the end justifies the means. They are, after all, building their legacy for a cleaner tomorrow. I see it as an irresponsible, dangerous and bloody legacy. They do not speak for me. Thank you.

STEVE BAKKAL: Our next four speakers are Brian Jakubczyk, Terry Miller, Greg Janoch, and Paul Martel, please come up to the front.

BRIAN JAKUBCZYK: Good afternoon, folks. My name is Brian Jakubczyk, I live in Grand Blanc, Michigan. I am here to recognize Energy Choice for Michigan.

Just a few things I'd like to bring to your attention. Number one, here in the Grand Blanc -- Great Lakes basin, the average cost for a kilowatt hour is a penny and a half cent more than the rim states that we have around us. I wish the Consumers Energy rep was still here, because it's a little difficult to recognize Choice since Choice has only been in place since 1998 and he wants to talk about this 50- to 60-year reciprocal cycle and we're only in about the 15th year of Choice

here in Michigan.

Something that we all know about, here in Frankenmuth area we have two restaurants across from each other, Zender's and the Bavarian Inn. On one side is a Michigan Choice, the other side, they're with Consumers Energy. The one that is with Choice is saving $100,000. Now, with Michigan's economy, people are looking for ways of saving money. Choice is the way to go. Thank you.

TERRY MILLER: Good afternoon. My name is Terry Miller. I'm on the Michigan Education -- I'm sorry -- Michigan Environmental Council's Board of Directors, and I'm also with the local environmental group, and I'm also a trustee for Monitor Township in Bay City. Thank you for this opportunity.

I believe Michigan is in trouble. Climate data accumulated over the past 43 years shows that Michigan is the second fastest warming state in the country. Arizona is the first. Our winters are getting milder and our springs are getting warmer, and last year we became only too aware of the results.

The early warming fooled our fruits and vegetables into budding early, then the frost that followed wreaked havoc; 80 percent of our sweet cherry crop and 90 percent of our tart cherries were destroyed. Michigan State University Extension warned that

Michigan's blueberry crop was endangered. The Michigan Apple Committee reported that Michigan's apple crop would be about 90 percent smaller last year because of the spring weather damage. Apples alone represented an estimated $900 million loss to Michigan's economy. This is data that needs to be accumulated, also.

Lake Michigan and Lake Huron have dropped to their lowest levels on record, threatening their shipping and fishing industries. A new report by the U.S. Army Corps of Engineers found that the two lakes are 29 inches below their long-term average, lower than they've been since recordkeeping began in 1918, and more than half of that drop occurred since January 2012.

You may be asking yourself, what does this have to do with energy policy? And I think it's everything. We have to wean ourselves from fossil fuels, particularly coal, fuels that are taking our waters, making our citizens sick, and sending our jobs and money out of the state. We have to move from the 19th century economy to the 21st century economy.

What seemed so obvious by the research is that such a step for the great majority of our residents will not mean a sacrifice in either service or costs, because safer, cleaner alternatives to fossil fuels exist. I would urge you to develop state policies that

continue the conversion of Michigan to more efficient use of our energy; expanded use of renewable solar and wind; creation of sophisticated energy storage; and support of non-burning, non-carbon dioxide-producing innovative technologies.

Michigan, as you know, currently gets only 3.9 percent electricity from renewable resources. We need a far greater percentage of our heating, appliance and industrial strength based on renewable electricity. Michigan, as you know, currently gets nearly 60 percent of its electricity from coal, all of which is imported from other states. When I see the 500 acres of toxic ash that lie on the Lake Huron coast, the result of past practice, it is intolerable to imagine another decade of coal-dependent electricity. When I see that Minnesota with a 25 percent by 2025 renewable energy standard and with an active House and Senate bill calling for 40 percent by 2030, I ask why not Michigan? Study after study point to ratepayer savings with renewable energy, job creation, and healthier citizens. We must set clean energy goals commensurate with our status as the Great Lakes state.

When an alternative is better for the ratepayers, better for the environment, better for the workers and business, and better for people's health,

better policies should follow. Thank you.

GREG JANOCH: Good afternoon. My name is Greg Janoch, I'm a resident of Midland, Michigan. And I want to make a few comments related to the report that's been mentioned earlier today about the renewable energy standard.

This is from the Michigan Public Service Commission, third report just came out in February, and they are charged with evaluating the renewable energy standard and what its effects in Midland are. So I have a few just comments about some of the highlights I pulled out of that report, and that's my source for these data.

According to that report, we're now at about 4.7 percent renewable energy in Michigan, and on track to reach the required 10 percent by 2015. About 85 percent of that renewable energy is wind.

The weighted average price of renewable energy is $82.54 per megawatt hour. This is less than what was forecasted, and it's substantially lower than the cost of new coal-fired plants.

I should mention that I remember 2008 when this law was passed, and that some of the concerns, and I heard it over and over again, were that it was just going to be too expensive for us to implement that, so this pretty much addresses that.

The cost of new coal-fired power plants, the cost of power from them, in this report the numbers seem to be between about $107 and $133 per megawatt hour, depending on what assumptions we make about the cost of complying with regulation and the future coal prices.

While the weighted average price of renewable energy contracts is now $82.54 per megawatt hour, that cost has been falling. The most recent contracts approved by the Commission for new wind capacity have levelized costs in the $52 per megawatt range. That's about half of what the first contracts were that were signed back in 2009 and 2010.

The energy optimization part of the standard has also been very effective. The Commission's 2012 report found that for every dollar spent on energy optimization, ratepayers see a return of over $3.55 in avoided energy costs.

And the renewable energy and the energy optimization work together to give us even better results. This is a quote from the report. "...combined, at a cost of less than $45.98 per megawatt hour, the two PA 295 standards cost less than any newly built generation, including new natural gas combined-cycle plants."

My conclusion from this is that PA 295 is

working to provide us with clean energy and lower costs for Michigan businesses and residents. Costs are better than projected and they're getting better each year. We should build on this and increase the required percent of renewable energy and improving energy optimization as we go forward. Most states have already higher requirements than we do. It can be done, and we should do it. Let us build more clean energy in Michigan. Thank you.

PAUL MARTEL: Good afternoon. My name is Paul Martel. I'm a registered professional engineer in the State of Michigan, I'm facilities manager for CFI Medical Solutions in Fenton, Michigan. CFI Medical Solutions is a medical device manufacturer employing about 135 people. We operate out of four facilities in the Fenton area, and sell products in over 32 countries around the globe.

Electric energy is one of the major expenses for our business, as is probably typical for many small and medium-size manufacturers in the State of Michigan. As illustrated earlier in today's forum, electric rates have increased substantially since 2008. In our case, we've been looking at a 30- to 40-percent increase.

We believe this results from two factors. The first is the monopoly status enjoyed by the major

public utilities in the state. The second is the cost of expensive alternative electric energy generation. I've heard several speakers mention the apparent savings with renewable energy. CFI certainly hasn't seen any of these savings.

To compete globally in the medical device market, we need competitive electric energy rates and costing.

I advocate the state foster competitive electric energy through a Customer Choice electric program for residential, commercial, and industrial consumers. Thank you.

STEVE BAKKAL: Our next four speakers are Victor Leabu, Ryan Johnston, Kathryn Light, and Thomas Haley, please come up to the front.

VICTOR LEABU: Hi. My name is Victor Leabu. I want to thank everybody that helped make these things possible. I'm a member of GLREA, but I'm here today on a more personal note.

I own and operate a small hydroelectric dam on the Flat River in Ionia County, it's about 25 miles northeast of Grand Rapids. We've been running the plant since 1984, and we've generated about 3 million kilowatt hours a year, or enough for about 300 houses. When you own a hydroelectric dam and you have young

daughters, dam is an O.K. swear word in your house.

We have one of the early PURPA contracts, some of you know what the PURPA is, that was the Public Utility Regulatory Policy Act that the federal government passed in 1978. Those contracts were based on avoided costs. Part of our contract was capacity, which was basically figured at the cost of the construction at the time of a coal plant amortized over 32 years. The second part is called an energy payment rate, that's based on the operation, maintenance and fuel cost of eight, in our case, Consumers' base plants. That rate actually has changed monthly.

The Avoided Cost Contract, or in our case, a 32-year contract, was the only way we could have obtained financing for our project. So a known rate for power generation, be it renewable or whatever, is essential, especially for small private companies or individuals to obtain financing. We've been doing this for such a long time that many of our original PURPA contracts, I like to call it the ten old hippies, in the early '80s that got into hydro before bigger companies decided it was a good thing, so I believe it's -- this is kind of personal -- it's essential for any energy policy that the state promotes for the future takes into account us legacy guys so that we will be able to continue at a

sustainable rate.

If the State of Michigan wishes to encourage a broad base of renewable energy generation, a policy that provides a known rate for power sales is essential. Individuals, small companies, subdivisions, schools, municipalities, can not compete with big wind. I'm not saying big wind is bad, but you can't compete. So it would seem that some kind of new avoided cost approach, balancing our current base load, perhaps more natural gas, with wind would be a fair way to set a rate for smaller generators, because just increasing the renewable energy portfolio does not provide small power providers, you can't compete with some of the big companies.

So thank you for the opportunity. Thank you.

RYAN JOHNSTON: Hello, everybody. Before I begin today, I'd just like to thank everybody who made this forum possible for me to be here to speak today. My name is Ryan Johnston, and I'm with Barton Malow Company. For those of you who unaware of who Barton Malow is or what Barton Malow does, we're a commercial construction company based out of Southfield, Michigan. Typically our markets are healthcare, education, stadium projects, and industrial projects, largely in the Michigan area.

Since the 2008 legislation, Barton Malow has been involved with the construction of wind farms across Michigan, from the Cadillac area up into the U.P., and more recently in the Thumb area. At this time, Barton Malow's one of the largest beneficiaries of DTE Energy for renewable projects; but what exactly does this equate to?

Barton Malow recently finished a 69-turbine wind project in the Thumb area that has the potential of producing 110 megawatts of power. I think the significance of this project lies in the spending that was brought upon because of it. Throughout the life of this project, roughly $60 million were pumped into the local Michigan economy. Roughly 14 million of this was spent on the employment of approximately 200 trade and salary employees that were from Michigan. Approximately 46 million of this was spent using Michigan materials, and about 100 different vendors.

We have another one on the way that will again be in the Thumb area for Detroit Edison. That's going to be another 70-turbine development. With this farm, it will produce roughly 112 megawatts of power, and it's going to start this spring. Following the Eckel [sp} project, we anticipate that the money invested into Michigan on this project combined with the Thumb will

exceed over $100 million.

With that said, I believe that these wind farms have not only supported our local Michigan economy financially, but also helped to support other native businesses while employing a large workforce as well. Thank you, everybody.

THOMAS HALEY: I am Thomas Haley, I reside in Mt. Morris. I am the secretary for the 611 members of the NePSing Group, which is a group of the Michigan Sierra Club, it has roughly 18,000 members in Michigan. There will be no Sierra Club talking points here.

I studied engineering at Michigan Tech and in Ann Arbor. I took a degree, mathematics, from Lake Superior State University. I graduated early in 1970. There was a turndown in the automobile industry, so I went to Chicago to find work. I found employment at Chicago Bridge and Iron in their special structures department. I helped design nuclear containment vessels and reactors. I did my best work in pinstocks. CBI fabricated pinstocks for the Ludington pump storage project.

When I studied engineering, I studied the great scientific thinkers of Europe, such as Hoyt [sp], Carnet [sp], Moore [sp], Cautious [sp]. I am not

short-changing the American engineering, I am more concerned that we have strayed from our national philosophy of pragmatism. Engineers (inaudible) offering solutions to problems, now our solutions are driven by ideology.

Growing up in Sault Sainte Marie gave me a sense of history. When I look at Michigan's energy future, I look at my engineering roots in Europe, especially in Germany. Doing some research, I found in 2004 Germany was the market leader in 21 of the 23 -- 21 of the 31 branches of world's engineering. Keep your eye on Europe when it comes to renewable energy, and let the renewable energy engineers do their work. Thank you.

STEVE BAKKAL: The next four speakers are Carl Duda, Louis Colletta, Peter Sinclair, and Nancy Janoch, please come up to the front.

CARL DUDA: Good afternoon, ladies and gentlemen. I want to thank the people for coming, and the board here for putting this on this afternoon.

I come from a farming background up in Huron County where there's approximately 220 turbines right now. My family's farmed here for over 130 years, started out in the Ferrisville area. They cleared the land, picked the stones, tiled out the land.

What's happening now, the turbines are

coming in. With this transmission loop, they're going to go through around eight, nine, ten counties, all the way here, the other side of Saginaw, Gratiot County to Port Huron/Detroit area, and they're going to take out a lot of land, cut a lot of land that will never be farmed again.

We voted on 25-25, they, we -- it got turned down by over a million votes. At the same time in Huron County, they took and had the vote on 25-25, and there was 11,780 no votes to 3,420 yes votes. What's our Governor doing? Doesn't our vote count anymore? Voting numbers are down, they've been down; I've voted since I was 18, 18 years old, I'm almost 70 years old.

The cost of these turbines are from $4 million to $5 1/2 million, they only run 38 percent of the time. Would you buy a vehicle that only runs 38 percent of the time and use your main vehicle all the time? They're only going to last 15 years, that's the lifetime of them. What are we going to do in 15 years? Maybe I won't be here, but a lot of us, a lot of you will be.

Once this land is covered with all these turbines, if we go with the 25-25 the way the Governor is pushing and the rest of the people in Lansing, it's going to take 31,000 turbines on this loop to produce 25

percent of the electricity. That's going to cover, at one acre per turbine with the building site and the driveway, 31,000 acres. That's going to take out one and a half counties out of these eight to ten counties that will never be farmed again. That's only one acre. People are telling me it's more than one acre per turbine and driveway. That's a lot of land that's going to be covered. It's a complete waste.

The wind does not turn. We came in through the Reese area, not one turbine was turning. Now, if we don't have coal or nuclear, what are you going to do for electricity? 6:00 o'clock at night, they die down in the Thumb area, our wives, our mothers are cooking dinner, getting ready for dinner, an hour or two hours later, want to take a bath or shower, go to bed, hey, the turbines aren't turning, you're not going to have the electricity to heat the water or cook the food or warm the food up, whatever.

As far as creating jobs, the first ones of 32 in Elkton, one job permanent as long as the turbines are there. The Ubly area, I believe there's 42 or 45 turbines, one permanent job. You can ask any commissioner in Huron County. Thank you.

STEVE BAKKAL: Next speaker was Louise Colletta.

LOUIS COLLETTA: That's Louis. I want to thank everybody that's putting this event on, and I appreciate the opportunity to speaking here.

And I noticed the general input of this meeting was the pro wind and the environmental impact that's created by this I call so-called wind energy, but I would like to go on the people's point of view. Just for an example, Saturday's Huron County Press, they lauded that the renewable energy paid off for the state. It said: Michigan Public Service Commission issued a report this week stating that Michigan's renewable energy standards is boosting the state's economy and utilities on a tract to meet their 10 percent by 2015.

To go on, the other highlights were that the Detroit Edison, or DTE Energy, three wind parks in the Thumb area are expected to contribute $150 million in economic benefits to the state.

There's a contradiction here. As I see it, the Detroit -- DTE Energy is taking a $3.00 a month Renewable Energy Plan surcharge, we, the consumers, are paying the so-called, or what they're calling their contribution, we're paying for it. Think about the dinners that they have put on and the promotional contributions that DTE has made. I'm referring to DTE because I'm not familiar with what Consumers is doing, so

I'm leaving it at this. They're not taking any money from their profits. The companies usually use their profits for these ventures. It was mentioned before that the free enterprise system, apparently that it doesn't count anymore, apparently it's got to come out of the consumers' pockets before anybody can construct anything.

The gentleman here with the hydroelectric plant, he did it on his own money, I'm sure it was his money and his alone to start it. Yes, he borrowed money, but I'm sure it didn't come from subsidies or the federal government or out of our pockets.

Why are we paying this $3.00 that they're using and saying they're contributing it? Here are the figures. A three-month bill, 250 million customers approximately, DTE consumers, that's $7.5 million per month just in your utility bills that doesn't have a thing to do with your utilities, but your so-called contributions. That comes out to -- 42 months that they've been collecting it, that comes to a grand total of $315 million that they've collected. A chairman on an average is costing around $3 million a turbine. Huron County's got close to 100. You figure it out; we paid for them, not the energy companies.

Also, under the Public Act 295 that was signed into law, the act known as the Clean and Renewable

Energy Act, established a renewable energy standard for the State of Michigan, the renewable energy standard requires Michigan electric providers to achieve retail supply portfolio that includes at least 10 percent. It does not say the consumers, it says the providers. Yes, a lot of people argue, well, we're going to pay for it one way or the other, but by God, they're taking it out of my pocket and they're taking it out of your pocket.

Yes, and as the speakers have showed you, our electric bills have gone up. We have not seen any appreciable lessening of our utilities. Bay City, for instance, which is close proximity to this area, they increased their rates of electrical usage; Huron County has not seen any appreciable decreases in their electrical bills. I'm just wondering, is this just a big farce? I mean all their money is coming from federal, which is ours again. I said we're going to pay for it one way or another, but by golly, I came up here, figure $4.00 per gallon of gas to come up here to argue a point that that's out of my pocket, to argue with these utility companies that are putting -- or these developers that are putting in, they're using my money to gain their profits. I thank you very much.

STEVE BAKKAL: Peter.

PETER SINCLAIR: I have a PowerPoint.

O.K. Thank you very much. I'm Peter Sinclair, I'm a videographer based in Midland.

There are four preeminent manufacturing and exporting nations on the planet; Germany, Japan, the U.S. and China. Three out of those have had aggressive, well-funded, long-term national programs to promote renewable energy and one does not. We should ponder that.

But just to look at the one, one of those that does, Germany is making staggering progress in deploying renewables; in fact, on one sunny day last May Germany produced almost half of its electricity from solar photovoltaic alone. Not long ago a chirpy Fox News commentator informed us that the reason Germany has so much solar energy is because, in Fox News world, that dreary, cloudy, northern country in the same latitude as Newfoundland is way sunnier than the United States. Now, that may sound funny, but if you go into the office of our local congressman, you'll find a big, flatscreen TV that's playing that every minute, every hour of every day all week long, and you wonder why they say and do such funny things in Washington. And you're hearing some of that misinformation here already today. So just remember where it comes from.

Germany's success just didn't happen by

accident. They have a feed-in tariff. It's a simple policy; you offer an attractive, stable price to businesses, individuals and communities to produce renewable energy, and it's proven to be the most powerful option for expanding renewable energy around the world.

Wind energy is also exploding around the United States, even with our spotty policies, and here in Michigan, the cost of wind energy have dropped by half since just 2009 and 2010, and they're going to continue to go down.

I recently spent an afternoon with this man, Jeff Metts, he's a manufacturer of wind components down in Eaton Rapids. Those big objects behind him are hubs for wind turbines. He has used the advanced manufacturing techniques which we pioneered here in Michigan to cut the time that it takes machining those hubs from 36 hours down to 6 hours and dropping, and he's employing people at good jobs, at good pay right here in Michigan in spite of all the attempts to undercut him.

And of course, we know we've already talked about the advantages of energy conservation. But here's the revolution that's coming: This is the cost of solar photovoltaics as it has been dropping over the last 30 years. You can see here the cost of grid electricity is basically flat or slightly rising; the cost of solar

voltaics is coming down. At some point definitely in the next decade, it's already happened around various places around the world, those lines are going to cross, and when they do, we will be having a revolution. When you have a technological revolution, you better be ready for it, or things are going to have a very, very rough transition. If you're caught making typewriters when the world switches to word processors, the world will tell you to just go away. So responsible leaders will look forward and begin to prepare for the changes that we know are coming. Failure to prepare will not stop the changes, but it will mean a very rough transition that will probably sweep away some of our most important corporate citizens.

So thank you for this opportunity. And I hope that the Governor and the Public Service Commission will look at the technology that's coming and prepare this state for those changes. Thank you.

NANCY JANOCH: Hello. I'm Nancy Janoch, also from Midland, Michigan.

Michigan has been very successful in growing our renewable energy industry. Renewable portfolio standards have driven the creation of a third of non-hydro renewable electricity in the U.S. In our area, Canada produces 25 percent of electricity from

non-hydro renewable energy, so we know this is attainable. What new RPS will Michigan set to ensure future investment, both public and private, in our growing renewable energy industry and economic success?

For decades we have relied upon the coal plants to provide most of our energy; but these aging and outdated plants are near retirement and it makes no economic sense to keep them. The heat trapping natures of CO2 gases released by these plants have changed our Michigan climate, the coastline and water levels of our state. They threaten our economic success in the quality of living, our agriculture, and our waterways. Their continued use seriously endangers the health of our citizens and our environment. How are we planning for the retirement of polluting coal plants that cause asthma, lung disease, strokes, heart attacks and death?

As renewable energy production increases nationwide, states will build the most economic renewable generating plants, depending on their natural capabilities. Will Michigan develop our long-term plans and take action now? According to the Ramping Up Renewables study by the U.S. Partnership for Renewable Energy Finance, which includes such members as Bank of America, Merrill Lynch, Citi, Deutsche Bank and Goldman Sachs, a well-designed policy can drive down costs for

supplying energy and can provide developers with transparency, longevity and certainty in a timely, cost-effective manner. The study suggests many ways to secure a solid financial result.

Michigan has been doing well in wind generation on land, but we are behind in many other areas of renewable energy for our state. Across the U.S., states are ramping up their renewable energy capacity, some more than others. As we go forward as a nation, these states will have more power, and will, as now, begin to sell and exchange their power. Will Michigan be the one that has to pay others, or will we set the industry standard and prices for selling our excess capacity of available power?

Our own Michigan Economic Development Corporation indicates that we are the international hub of clean energy economy. This state, famous for huge industrial automotive work, ranks among the top four states in industrial capacity to develop and manufacture wind and energy systems. We also have the capacity for the research and design, the engineering, the technology, and the scientific business and creative expertise to be the top state in renewable energy production.

In the future, will we move forward and be the leaders of success in this country, or will we

cling to a past that we perceive as more obvious and secure? The Michigan workforce is ready and waiting for increased employment. This expanding industry will build our economy, increasing jobs at every level, growing businesses, schools, retail, commercial, and private opportunities, strengthening all communities around the state. This increasing economic impact will push Michigan to a powerful future. Thank you.

STEVE BAKKAL: Thank you. Our next four speakers are Richard Morley Barron, John Barker, William Schumacher, and Kenneth Pethers.

RICHARD MORLEY BARRON: Good afternoon. I'm Richard Morley Barron, I'm a citizen from Flushing, Michigan. I want to also thank the Governor and the Public Service Commission for putting on these forums, which are helpful.

I'm not an expert, but I am concerned about our state and I'm concerned about our energy policies. I'm here to join with other people who are advocating a dramatic move towards renewable energy and energy efficiency.

I would say that to sum it up, there are three reasons for this. The reason number one I'm not going to tell you is jobs; I think the number one reason to go this way, as has been suggested by Peter Sinclair

and others, is that we have a very critical global warming problem, it's causing climate change, it's causing coastal flooding, it's causing draught, it's causing more severe storms -- excuse me -- forest fires, ocean acidification, the list goes on and on. It's not going to happen in the next fiscal year, but it's happening, and we need to address it, and as slowly as we're moving, we need to start right now.

Energy business as usual, burning fossil fuels, is basically destroying our planet, and we don't have a spare in the garage. So the only way we can take responsibility for this is through renewable energy sources and through wise use of the energy that we have.

Also, using fossil fuel is creating an air pollution problem, which has been talked about before. In addition to greenhouse gas emissions, there's also problems with particulate matter, sulfur dioxide, arsenic and those type of things. If you want to see the business as usual future in terms of air quality, go home tonight, turn on your television news, watch the coverage from Beijing for from Delhi or from any third-world country who's burning coal.

I do think jobs is an important factor, and as other speakers has mentioned, coal is a dying industry, but we are spending about over a billion and a

half dollars a year to bring it in from out west and from the West Virginia. We can save that money, spend it here in Michigan. Wind energy has been pointed out as now cheaper than new coal, and we're falling behind the other states also mentioned.

So in conclusion, I would like to say that I appreciate these forums, I think it's helpful to get a public discussion going on our energy alternatives, and that if we use renewable energy and energy efficiency, it will help us address climate change in a real way, and it will help us in competing for good jobs in the future. Thank you.

JOHN BARKER: Thank you for this opportunity to offer my humble input on Michigan's energy public policy. My name is John Barker, and I am from Union Township in Isabella County, the home of Central Michigan University and the Saginaw Chippewa Indian Tribe. Unlike many of the other presenters, I am not an expert, but a very concerned citizen.

My mother often accused me of being a bit of a dreamer, and there is no doubt I have been inspired by many dreamers, and when it comes to Michigan's public policy about energy, I guess I am a dreamer here as well.

First I dream that in the not too distant future a vast majority of our public officials will

realize that global climate change is something that all of us must do something about now, whether we are at the local level, state level or the national level.

I also dream that our public policy will truly reflect the seriousness of the situation and without delay move our state and national officials to understand the importance of clean renewable energy and how it is the only logical long-term solution to ending our dependence on dirty energy that could destroy our planet.

I hope I am not just dreaming that more and more communities like Ann Arbor and Union Township, where I live, will be joined by every community in Michigan seeking to lower their carbon footprint with vigorous efforts to reduce energy consumption and use more renewable energy. And I hope I am not dreaming when I see our state government encouraging every community with public policies that reward those efforts.

And I dream that our state government will deploy renewable energy at every public facility both to reduce costs, but more importantly, to reduce our state government's carbon footprint.

I have a dream also that someday Michigan will become a leader in setting ambitious goals to transform our state into one of the greenest states in

America, just as I work to transform Union Township into becoming one of the greenest townships in Michigan.

You see, sometimes dreams come true. Perhaps not always to the degree we'd like to see them, but all too often I see public leaders who go through the motions, they listen to great ideas, as you are today, but fail to follow through. Their dreams are not big enough.

So my new dream is that Michigan's public policies on energy will help our planet heal and not make things worse. I dream this for my children and for my grandchildren and their grandchildren.

And as my friends on the Saginaw Chippewa Indian Tribe might say, I dream this out to the seventh generation that they might say about us, we thought about our future and our legacy. And I dream that legacy is one that will make us proud to be citizens of Michigan. Thank you.

WILLIAM SCHUMACHER: Hi. I'm William Schumacher from Unger, and I too am not an expert on energy in the state, but I'm thankful that you let me put my two cents in.

When the Consumers man, Energy, or guy was here, he was talking about everybody having a different opinion on data that you read, and I have also

read the status of electric competition in Michigan. And I have to ask, does anyone on this Public Service Commission really care about the ratepayers in this state? In 2012, Michigan's average residential retail rates ranked 8th highest among the 16 jurisdictions with restructured markets. In 2000, Michigan ranked fifth lowest. Of the five surrounding states to Michigan, we have the highest price of electric. Of the ten largest states by population, our rates were third highest. Michigan rates have been above the national average since 2009. The same is true with commercial retail rates. In 2012, Michigan ranked highest among the five surrounding states. And for the ten largest states by population, our rates were third highest. The story for industrial rates is the same. In 2012, Michigan ranked 8th highest among the 16 jurisdictions with respect to markets. In 2000, Michigan was eighth lowest. And again, in comparison to our five surrounding states, we ranked highest in industrial rates.

As evidenced by the number of customers in queue to get into the alternative electric supplier program, it is clear to say that our rates in Michigan are too high. One of the reasons for this is the quest for green energy, because they do not work 24/7, 365 days a year. Every turbine, every solar panel has to be

backed up by a constant source of dependable, conventional energy kept fired up and ready to kick in when needed.

I have to wonder, when Consumers Energy states on their bills that for the average Michigan resident, renewable energy is estimated to avoid an additional $3.90 per month cost versus a new coal-fired plant, do they consider the added cost of providing backup when the wind doesn't blow or the sun doesn't shine? Until you can solve this problem, you're just wasting our money.

We can not afford another ten percent of green energy. Have some patience. Stop looking in the rear-view mirror, thinking only wind and solar will be the future, because when you turn your eyes and look straight ahead, I don't think you'll see any there.

As for the creating job aspect of the green energy program, the decade-long burden of higher rates far exceed short-term gains of the construction jobs that they provide. Thank you.

KENNETH PETHERS: My name is Kenneth Pethers, my company is Sunsiaray, we manufacture heating equipment for buildings, residential, commercial, utilizing the sun.

This has been pretty much an electrical

energy forum, but I would like to take this opportunity to push in a different direction just because it is an energy forum. And to set the preface, I would like to read this article, excerpt from Renewable Energy World International Magazine, an article in January/February 2010. It is called: The Last Word: A new beginning, and it states, and I quote.

"For decades, power utilities all around Europe and the world had been lobbying for specific power business issues and politicians have been naively following their arguments and policies. This is even though 50 percent of the European energy demand is for heating and cooling, a sector which has been kept out of the energy policy discussion so far. The consequence is that energy policies revolve around power issues, which account for just 20 percent of European energy consumption and CO2 emissions. It is, however, obvious we are not going to solve energy problems by only addressing a relatively small fraction of the energy pie chart."

Here in the United States and in North America, our energy consumption is roughly 52 to 55 percent of some form of heat energy. So in that sense, I would like this state to consider the possibility of following other states in issuing rebates from this money that is being extorted from us in the form of thermal

rebates. There are states now that give you 14.50 per term that you save using renewable energy. Now, it reduces as it goes over the years, and it's a way for us to save money. And I thank you for your time.

STEVE BAKKAL: I want to commend the speakers for all staying, adhering to their time. We've got about 12 more speakers left, so probably another half hour.

Next four speakers are Robert McLean, Pamela Schumacher, Larry Weiderski, and Joe Brauschj, can you come up to the front, please.

ROBERT McLEAN: Good afternoon, everyone. I'm here from Huron County, I have 30 years of technical service experience, I've worked with some of the best people in the nation on wind issues, which is primarily what I'm going to speak on.

I've worked with Dr. Alec Salt, Rob Rand, Dr. Malcolm Swinbanks and Rick James. I've learned very huge amounts with these people, I've studied this phenomenon since it came to my neighborhood in what I called the green energy sacrifice zone, or the blinking pinwheel forest, which is now Huron County. I'm surrounded by these things.

I'm going to tell you some of the cold, hard truths on these. And before that, I want you to

know and I want Governor Snyder to know that I'm adamantly opposed to any renewable mandates. We need to eliminate all subsidies and quit allowing politicians to set power policy. We need scientists to bring in their intelligence and set intelligent goals and objectives.

One of the first and primary objectives in power must be it has to be affordable, reliable and dispatchable. Dispatchable means it needs to be there when you reach over there and turn on the switch. Unlike today as I traveled over here this morning, there was no wind power production that I saw all the way across Huron County coming here. So anybody that needed heat or electricity that has all these pipe dreams that want to tie everything to wind turbines, it can't physically happen. I'm sorry to burst your bubble; it's just not going to happen, folks.

To be able to compete in the world marketplaces, we need cost-effective, reliable energy sources. Governor Snyder wants to make this a good state for manufacturing, that's the way to do it; get the cost down, make it affordable and reliable.

For example, the pipe dream on wind. To take the coal plant situated in Monroe, which is 3,000 megawatts, and replace that with wind, at a very, a very not realistic I guess the best way to put it, not

realistic factor of 30 percent would take a land mass of 3.37 times Huron County carpeted with two Vestas V100 1.8 megawatt turbines per square mile at a cost to the taxpayers and ratepayers of $16.6 billion, without including the needed infrastructure, such as our transmission line that we're footing the bill for now known as the Thumb Loop from Bay City to Port Huron which is costing us between $550 million and $700 million so that DTE and their buddies can ship the power out of here. Also included in that -- or not included in that is the gas-fired backup generators that will be needed to back them up when the wind dies, such as days like today. Wouldn't it be more intelligent to take hydroelectric and drop a generator in the St. Mary's River? 24/7 we would have power there.

And another thing I want to touch on, we had a person from Huron County, previous speaker, claim that wind was so great; that same person lives on the lakeshore and tried to annex their land out of one township into another when the township that the land was situated in voted down having turbines in that neighborhood. So this person wants to put it in your backyard, let you look at it and listen to it, and sit up on the lakeshore and collect the royalties. Thank you.

PAMELA SCHUMACHER: Hi. I'm Pam

Schumacher from Bay County, Merit Township. I come from a farming family, but I work in the public sector.

We, the residents of Michigan, hope that you will hear our voice. Last November we voted overwhelmingly to defeat Proposal 3, which would have raised the renewable energy standards to 25 percent for the power companies. We, the residents, can not all come again to public hearings across the state scheduled between 1:00 and 5:00 p.m. to express our voices over and over. We need to be at work at our jobs to support our families. We, the residents, have already spoken.

Now, the wind industry and other pro-wind groups will try to convince you that Proposal 3 was defeated only because it involved amending our state constitution, but that is not the case. Residents in rural communities in the Thumb and across the state have been researching the negative impacts on quality of life and decreases in property values for residents living within a half mile of a wind turbine. There is an award-winning study done by the Minnesota Department of Health attached to this document. This report concludes that safe distances for lessening the impact of wind turbines on residents dictate that a half-mile minimum setback should be utilized. And this report also was not funded by the wind industry with our tax dollars like most of

the wind studies.

Wind turbine companies, however, insist upon convincing and forcing residents to accept a half-mile setback from their homes, claiming in one of the reports that the wind turbines won't make you deaf and they won't kill you. However, none the wind energy company employees themselves choose to live within the half mile of the wind turbines, yet thousands of rural residents are forced to listen to the low-frequency noise coming from these turbines, the type of sound that you can feel as well as hear. It is often described as the sound of a pulsating helicopter that never leaves.

Also, the home values of the residents living within the footprint of the wind farm are now decreased to 50 percent to 100 percent since no sensible person would pay full price to live in a home that no longer offers quality of life. These thousands of rural residents receive no compensation for their losses while the wind industry companies make about $3 million per turbine per year. It's no wonder they're constantly lobbying for renewable energy mandates.

The wind industry will also try to convince you that renewable energy is cheaper than other forms of electricity. If that were true, then why did the wind industry fight so hard last year to maintain

their high level of federal subsidies, which were only passed in the eleventh hour as a part of the larger last-minute budget deal that was pushed through in December by the democrats in Washington? And why is there currently an additional surcharge for renewable energy on our energy bills? And why after adding several new wind farms in the power grid of Michigan last year did our energy bills now increase yet again? So why not let market forces take over, the energy companies could turn to alternative energy without a state mandate if it was that profitable.

Furthermore, just about a year ago plans for a clean coal plant for Consumers Power in Bay City, Michigan, was canceled because "the demand for electricity was down", according to a Consumers Energy spokesman. And I have also attached that article to this text.

Therefore, why should we have mandates for renewal energy or other energy that we do not need, while at the same time the rural residents are targeted as ground zero for wind turbine projects that will destroy their quality of life and destroy the value of perhaps their only substantial asset, their home property value. Thank you.

LARRY WEIDERSKI: My name is Larry

Weiderski. I'm a resident of Midland, and I sail the Great Lakes.

I'm coming from a little bit of a different vantage point here at the moment. I'm requesting a moratorium on fracking. We hear about how good fracking is, but we don't have the whole story there. It's also been found that the estimates were that they would only take about 5 million gallons of water to do fracking, and in reality they've reported out over 21 million gallons just for the wells that were done in the -- sorry, I just have to look here -- that was in the Roscommon area, a well that they already did. And now that we have permits requesting more, I'm suggesting that this is not the way to go, that I would request we have a moratorium until it's studied on what the effects are and what happens.

One of the side issues about taking all this water out which can not be reused again is that it will come back to Michigan, because as they burn it off, it will have that intermoisture content, which those of us who live here know that isn't exactly what happens. Our winds carry the water that evaporates away from our areas. So I thank you for the consideration.

STEVE BAKKAL: Hour next four speakers are Annette DuRussel, Pamela Smith, Kevin Martis, and

David Kunkle. Please come up.

ANNETTE DuRUSSEL: Good afternoon, my name is Annette DuRussel. I live in Merit Township, Bay County, Michigan.

In August 2011, my neighbors and I were forced to quickly educate ourselves and community and our township officials about industrial wind turbine developments. To maintain our quality of life, Merit Township residents took action. For us, alternative energy was not and is not the issue; the issue is safe distances between residential dwellings and industrial wind turbines.

Our concern is that sound public policy, policy must require that we consider long-run effects in all people, not just simply short-run effects in a few people.

In August 2011, concerned residents of Merit Township began a quest to amend the current wind zoning ordinance adopted in February 2010. The existing ordinance adopted the minimum distance recommended by the wind developer, which is a quarter mile placement from the corner of a person's home. This is not considered a safe distance from a residence. Many authorities on wind developments recommend a minimum distance of a half a mile up to just less than two miles from a residence.

After months of attending township meetings, my neighbors and I found ourselves facing a public hearing in February 2012 for the issuance of a special land use permit required for an industrial wind turbine establishment in an agriculturally zoned community. In order to make our township officials understand the will of the majority of people living in Merit Township, we started a petition, collecting signatures opposing the issuance of the special land use permit. I spoke at this public hearing on behalf of the 452 residents who signed the petition. During my presentation at the public hearing, I provided the planning commission members with legitimate reasons to reject the special land use permit, and they were as follows:

The developer's application for special use permit was incomplete. The original application submitted to the township did not contain a submittal date on the document. Why would a developer omit a submission date on an application for a special land use permit? Well, the submission starts the clock ticking. It is the reference point in a court of law for the constitutional right to due process. From the official submission date, the township and its residents have 30 days to consider the application and 60 days to respond

to it.

The official site plan submitted with the application did not have full-size copies of the site plan. Why would a developer omit submission of full-size copies of site plans? Well, the 8 1/2-by-11-inch piece of paper provided to the township as the site plan contained a 36-square-mile section. It was virtually impossible to decipher exactly what land parcels the township was granting permission for development.

The application also did not contain the required legal descriptions of each leased parcel to be used in the project. Why would a developer omit submission of leased parcels? Well, without a clear determination of leased parcels to be included in the wind project, the township did not really know which parcels and sections it was granting permission for development.

Finally, it was determined that the developer's application had an overstatement of sections required for the project. The submitted boundary map contained 30 sections of leased parcels instead of the 9 sections necessary for the project. Why would a developer seek more parcels in its permit than necessary for the project? Well, these additional parcels would have been vested into this project for the next 30 years,

preventing other developers from entering the township.

With only seven days to the public hearing, the developers submitted a new boundary map with only the nine sections actually necessary for the project. This late submission violated the zoning ordinance, making the original application incomplete. And this revised boundary map started the clock ticking again and for the 30 days in which the township and the residents have to review the documents. Even on this revised boundary map, the developer still included additional leased parcels that would not contain any wind towers or components necessary for the wind project. If these leased parcels were not removed from the boundary map, then these parcels would be vested into this project, just as the additional sections would have been vested into the project.

Gets confusing, doesn't it?

The wind developer had the township and its residents constantly confused and wondering which parcels and which sections it was really after. Ultimately, the township granted the special use permit with the condition that no wind turbines would be constructed in Merit Township. The developers were granted the substation and its underground wiring to connect to the power grid for the already approved wind

developments in two neighboring townships.

Unfortunately, Merit Township still has yet to amend its wind zoning ordinance to protect the people. It is under a moratorium and is investigating a possible amendment before any new site plan submissions are allowed.

If the State of Michigan determines to move forward with wind energy in Michigan, I ask that the misery of the people be stopped. Wind energy developments should not be allowed so close to people's homes so as to make habitation miserable for them in their own homes and to decrease residents' quality of life. People should not be made to suffer in their own homes for the sake of alternative energy. Responsible placement of wind energy developments is a right of the people who live here. Thank you for allowing me to speak here today.

PAMELA SMITH: Good afternoon -- or good evening. I would like to thank Chairman Quackenbush and Director Bakkal for this opportunity. My name is Pamela Smith, and I have 14 years' experience in public health, and I am currently a small business owner where I still work to improve the health of our Michigan communities.

I am here because our energy choices are about our health as well as about our economy and our

environment. A recent report released by the Michigan NAACP, the Michigan Conference of the NAACP, entitled Your Energy Your Power, which is a case study on renewable energy and public health equity in Michigan, shows that Michigan communities of color face a disproportionate health burden from the state's dependence on coal-fired power plants. According to the report, Michigan communities of color represent 18 percent of the asthmatic population in Michigan, but startlingly, our communities of color account for 75 percent of the emergency room visits for asthma.

Six coal-burning power plants in Michigan are noted among the top environmental justice offenders in the country and have an F rating. This grade is based on placement in low-income communities, as well as communities of color, as well as for their emissions. These communities are disproportionately affected -- are the communities that are disproportionately affected by asthma and other diseases that are related to air pollution.

In this report, we show that if Michigan were to clean up its energy supply by increasing reliance on clean renewable energy, such as wind power and solar energy, we would decrease our reliance on coal, Michiganders could avoid more than one million in

health -- billion in health damages. These costs come from reduced costs of hospital admissions, cardiovascular diseases, respiratory diseases, reduced emergency room visits for asthma exacerbation, chronic bronchitis and reduced minor restriction activity days. Michigan's most vulnerable communities are low-income communities and communities of color which currently suffer the worst health impacts and will receive a majority, up to 80 percent, of the health benefits of a transition to cleaner energy.

So I am here encouraging further strategic investment in emerging alternative and renewable energy industry, such as wind turbines, solar energy, electric and hybrid vehicles that advance battery production, and I believe that Michigan should continue to be at the forefront, or to be at the forefront towards an energy, such energies that would produce -- that are healthy energy choices. Thank you.

KEVON MARTIS: Good afternoon. My name is Kevon Martis. Thank you to these gentleman here for making this venue possible. I am the director of the Interstate Informed Citizens Coalition of Blissfield, Michigan. The folks in the yellow shirts are with me.

We are a nonprofit dedicated to promoting science-based energy policy instead of policy promoted by

special interests. We are funded by tiny donations from across the state. We are a statewide coalition and are strongly bipartisan; I estimate that roughly 40 percent of our supporters are self-described liberal environmentalists and 60 percent free-market republicans, and together we have come to one conclusion: Wind is an ineffective means to produce cheap, abundant and reliable power; and, among all possible methods for reducing fossil fuel emissions, is among the least economical ways to do so.

Now, on that second point, how can we be sure? Well, simple. You've heard a number of people speak today about renewable energy, and if this point were true, they would screech it from the housetops, which is this: Wind is the cheapest way above all others to reduce CO2. Yet, it's not. It's not even close. If wind was the most cost-effective means of reducing fossil fuel emissions, that's the only thing they would talk about and you would not hear this extensive misdirection about jobs and spinoff industries.

But in the end, you're not going to take my word for this, so why don't we look at three sources that environmentalists, like many of those in the IIC, would find credible.

How about James Hansen, climate change

activist. He says, "Suggesting that renewables will let us phase rapidly off fossil fuels in the United States, China, India, or the world as a whole is almost the equivalent of believing in the Easter Bunny and the Tooth Fairy." Yes, that James Hansen.

Or how about the American Wind Energy Association board member, German utility grid operator and wind developer, E.On Energy, yes, the same firm that's furnishing the cheapest power purchase agreement for wind in the State of Michigan is actually generated in Indiana, which tells you that we are not a low-cost generator of wind.

Anyways, these same guys, AWEA board members, say this: "Wind energy is only able to replace traditional power stations to a limited extent. Their dependence on the prevailing wind conditions means that wind power has a limited load factor even when technically available... Consequently, traditional power stations with capacities equal to 90 percent of the installed wind power capacity must be permanently online." Again, the people that own and build windmills are telling you they can not replace fossil generation. Your health conditions, et cetera, are irrelevant when wind is powerless to stop those.

But my favorite case of "golly how the

truth will out" is from an Obama White House briefing memo dated 10/25/2010 where Carol Browner, Ron Klain and Larry Summers submitted this regarding the U.S.'s largest wind energy project, the Shepherds Flat Project.

"The Shepherds Flat loan guarantee --" and this is reading directly from the memo, and I'll submit it, "-- illustrates some of the economic and public policy issues raised by OMB and Treasury. Shepherds Flat is an 845-megawatt wind farm proposed for Oregon. This $1.9 billion project would consist of 338 GE wind turbines manufactured in South Carolina and Florida...". The sponsor's equity, GE's equity is 11 percent of the project costs, the balance of those costs they call double-dipping. 1.3 billion of that project is picked up by the taxpayers.

The reason it's cost-effective for them is because of those subsidies and the fact that they are able to sell that energy at above-market value.

Finally, regarding the carbon reduction benefits, "If this wind power --", quoting from the memo again, "-- displaced power generated from sources with the average California carbon intensity, it would result in about 18 million fewer tons of CO2 emissions through 2033." This is the Obama White House. "Carbon reductions would have to be valued at nearly $130 per ton

CO2 for the climate benefits to equal the subsidies." $130, according to this memo, is more than six times the primary estimate used by the U.S. government to value CO2.

One final anecdote. We have spent $1.8 billion in the Thumb generating wind turbines and transmission, and it's delivering annual capacity of roughly 200 megawatts. That same amount of investment would have built 1,800 megawatts of combined-cycle gas/turbine plants, permanently closing 19 percent of Detroit Edison's existing coal generation, thereby slashing CO2 by at least half and particulates by almost 100 percent. Thank you.

DAVID KUNKLE: Good evening. I'd like to thank Chairman Quackenbush and Director Bakkal for your commitment to being here and taking in all this information, trying to make good energy decisions for Michigan. My name is Dave Kunkle. I was born and raised in Midland, Michigan, my dad worked for Dow Corning Corporation.

I'm here representing the Great Lakes Renewable Energy Network, which is nonprofit organization. Our business members, about a hundred of them, are installers and manufacturers of renewable energy equipment and systems. We also have a newsletter

that goes out to about 2,500 citizens in the State of Michigan who are interested in following what's going on in renewable energy.

One of the main things that we do at the Great Lakes Renewable Energy Association is try to make sure that people are educated on the issues of energy. We are now going through a process here in the State of Michigan of trying to make good energy decisions, and we want to make sure that as this process proceeds, a component is included for education; that as we come with a plan, that somewhere in there is a plan that brings the idea of energy literacy to the people in Michigan so we can have an informed discussion on energy sources. The U.S. Department of Energy has an energy literacy program, they've been working on it for three years now, they have finally published it recently. It included 13 federal agencies: Agriculture, commerce, defense, energy, health, interior, transportation, the EPA, NASA, the National Science Foundation, and many others, to get a full view of what we need to know about energy.

People need to know how to trace the energy flows and think in terms of energy systems. They need to understand what energy supplies we have now and what can supply our energy in the future. They need to be able to communicate about energy and discern credible

information from not credible information.

We had the pleasure, we put on an energy fair every year for the Michigan Association -- for our organization, and we had hundreds of people come and attend workshops learning about renewable energy, and we had, I mean this, the pleasure of having a number of green-shirted demonstrators, about a dozen, out in front of our energy fair that year, and we had the opportunity to talk with them and found that most of them have legitimate concerns that we should be listening to. They were not against renewable energy, they were against renewable energy done badly, and we support exactly that.

We have seen solar energy systems put in badly, we've seen wind put where it shouldn't be put. What I think we all need to do is to become educated on these issues and be able to talk with each other and listen and learn.

So I just came here to say that as we move forth in this process, as we come up for our decisions, that let's include a component of energy education in this plan and make sure that that's available to all Michigan citizens. Thank you.

STEVE BAKKAL: Our last four speakers are Nick Zientarski, Joel Tanner, Sara Bonnette, and Brad Histed, please come up to the front.

NICK ZIENTARSKI: Thank you for the floor, Mr. Director, Mr. Chairman. My name is Nick Zientarski from Grand Haven, Michigan. My mission personally is to rid the world of financial insecurity.

During break, around the 3:00 o'clock hour, I got a chance to confirm the data I'm going to share with you today, from two people actually; one of them being Ronn Rasmussen of Consumers Energy.

Did you know your customer charge on your utility bill pays for the meter reader? Did you know that the delivery rate on your bill stays exactly the same if you're on the Choice provider? Last, did you know, Michigan, if you're on Choice provider, you are forced to pay an additional monthly premium? I'm going to repeat that. Did you know if you are on a Choice provider, you are forced to pay an additional premium? This disincentive is known as interval metering.

So let's do a quick example so you guys can you wrap your head around this a little bit. Let's say a business saves $40 a month being on a Choice provider. With interval metering, it costs you $30 to have an interval meter, so that you only net $10. The gentleman that stood up here said one restaurant is on Choice, one is not on Choice, he said the one on Choice is a $100,000; well, that's a pretty far out there number

for you.

But this interval metering is actually a fax line that you plug into your meter so you no longer have to have a meter reader to read your meter. But, as said by the two sources during break, one, that Consumers Energy guy, if you're on Choice, you still have the same charge for delivery as well as the same charge as your customer. So why are you getting double? You shouldn't have to pay for a meter reader then or a reduction in a customer charge. Makes sense, right? Remove interval metering, please. This is a silly, silly thing.

If you get a fax line, that's $30, you know, a month premium; there's actually other things, you can actually get like a cell phone that sits there. And the gentleman, the second source, said it actually costs over $300 to get this thing installed. This is a hurdle for people, a slick hurdle, keep in mind, for people to stay away from Choice.

So everybody, if you're able to -- except for her -- can you raise you're hand, please. Come on, this is interactive, everybody raise your hand real quick. Do you understand interval metering? Keep your hand up. Are you a resident of Michigan? Keep your hand up. If you agree, like me, interval metering needs to get removed, keep your hand up, please. Thank you.

Thank you for the floor. Again, please remove interval metering, please.

JOEL TANNER: Thank you for this opportunity. I my name is Joel Tanner. I'm a citizen of Saginaw, I'm a father, a grandfather, consumer, and I'm concerned about our future.

It was interesting listening to all the debates about renewable energy, and I liked what the gentleman said is we have to have renewable energy, we have to do it right, and where it's done wrong, we need to fix it. But let's remember the reason we have mandates for renewable energy is because the burning of carbon fuels has got to stop. It is destroying our future, and really, scientists don't even debate that anymore. It is a fact.

Now, I don't know a lot about the Michigan Public Service Commission, so I have some questions. When determining rates, does the Michigan Public Service Commission take into effect [sic] the need for renewable energy? Do you take into account the executive salaries of power company executives? Is the bottom line that you make your decisions dependent upon consumer protection or the profit for energy companies? What are the rules for being a member of the Michigan Public Service Commission? Can members of the Commission

be related in any way to the energy companies or have stock in those companies?

Now, I agree that the wind does not always blow and the sun does not always shine; however, we are on the verge of some great technological advancements. There's a company called SustainX, and you can Google it, they have developed processes for storing renewable energy so that turbines don't have to turn all the time and the sun does not have to shine all the time, we can now store it.

Also, for those who spoke out against or talked about Proposal 3, let us remember when Proposal 3 first appeared on the ballot, a large majority of Michigan citizens were in favor of that 25-percent mandate. It was defeated because of the large sums of money put against that proposal by the oil and gas interests. Remember that. Special interests defeated that.

Also, for the man who talked about the Tooth Fairy and the Easter Bunny, I guess I believe in the Tooth Fairy and the Easter Bunny, and just like my grandchildren, and I believe if we're going to have a better future, we're going to need renewable energy.

SARA BONNETTE: Hi. I'm Sara Bonnette. Thank you for letting me comment. I'm a former aquatic

biologist, but I have left work to stay home with my two young sons in Bay City.

There's enough scientific evidence now to know that we must scale back on our use of fossil fuels. Energy use is not on the average person's radar, but this topic is one of the most important our society can tackle.

What actions can we take now? We need to make science a priority in our schools. There's a terrible lack of scientific literacy out there, but I guarantee there will be no denying climate disruption if our scientific literacy improves. We will need young people to have the awareness and scientific aptitude to tackle the energy issues we face now.

We need to expand public transportation. We need to get off our rears and walk or ride a bike for some of our errands or walk our children to school.

I don't support any one type of renewable energy, but I think we need to move that way.

Energy efficiency is key. Take advantage of rebates and low-cost options to reduce energy use. Our family personally benefited from a new furnace rebate and free devices from our utilities to save on water in our home.

We need to increase Michigan's storage

capacity for electricity generated from wind and solar.

And I just had to add, based on somebody's comment today, that I live about one and a half miles from the coal plant in Hampton Township, and in the summer, you do hear a fairly constant hum from the turbines, so coal power can be noisy, too.

Natural gas will play a part in our energy mix, but we must protect our water quality and quantity. We must make sure that we understand what fracking will do to our air and water. The long-term consequences of fracking are unknown.

Oil has been federally subsidized for a long time. Addressing climate change should be the new race to the moon. We should be encouraging innovation and progress to make better strides in renewable energy, including off-shore wind and geothermal and improving energy efficiency.

But you and I know it comes down to dollars and cents. If there's a buck to be made on dirty fuels, then the heck with the long term. We humans can adapt to small, barely noticeable changes in our environment; just turn up the air conditioning a little more, or our heating bill might be a little lower in the winter. But if we look and listen to the natural world a little more, we can see a picture that should get our

attention. Twenty-seven of the 38 bird species for which we have adequate long-term records have expanded their ranges predominantly in a northward direction. That's just one example. Just as coal miners heeded the caged canary, we must heed the signs we are now seeing in God's creation and we must listen to our conscience that's telling us that we are taking too much and leaving the future worse off. I want to be able to tell my two boys that we are tackling these issues now so they will not have a more difficult time doing it down the road.

I hope the Governor will take positive action that will address our energy and climate issues now in a way that will improve or our children's future. The scientific data is there. Please listen to it and make the change away from fossil fuels now.

BRAD HISTED: Hi there. My name is Brad Histed. I'm not a real good speaker, as you will notice.

But we had a lot of educated people that have been coming up here and telling us a lot of things that maybe they're right on some, but they don't live where I live. I live in Merit Township, and we had NextEra Energy come into our township, and the past year they come in promising us the world and did nothing but lie and destroy our town, our township, our churches, you name it.

They have stolen water from fire hydrants, they have wrecked a neighbor's well and pump, they lied to people repeatedly and township officials to get whatever they want. We had workers swearing right across the road from our house for weeks on end installing power lines, didn't care if we were outside or where we were, the windows open. They'd speed up and down the highways, they run stop signs, they don't care. Yeah, they say they'll fire a guy if they catch them. Well, I never seen them fire anybody, and I called repeatedly. It was just a joke.

They wrecked our roads and bridges with their big trucks, they run huge trailers down the road, ran over stop signs; we had to pay for them, they didn't. They took large cranes down roads that they weren't supposed to. They only had one mile approved to run on in Merit Township and they drove wherever they felt. They took a large crane down a road three miles out of their way, couldn't get over a bridge, had to turn around and go all the way back. Now that's not very smart. They had car and truck accidents, not in our township luckily, it was over in Gilford Township. You never heard a thing about that. It was all kept hush-hush. Hit a guy broad side, hurt him. Never heard a word. They left fields with tile broken all over, they

supposedly are going to fix them, but who knows when or what.

Now we have noisy wind turbines. The people can't sleep in their houses. My sister lives next to one, she can't even sleep in her bed anymore. Would anybody here like to have that problem, especially people that come out of the city that think that wind turbines are great?

I have interference with my TV now. I live over a mile away from a wind turbine, and I have bad reception, but supposedly I was never going to have that.

So as I say, this wind farm project has destroyed my family, our churches, our towns, our friends, everything around us right now, it is just divided.

And it's amazing, my son's a school teacher, and he says one volcano eruption creates more CO2 and pollutants in this world than what mankind has done forever since world has been here, but we're all worried about this CO2 I keep hearing.

And wind energy pays very little, if any, taxes. Consumers pays taxes, DTE pay taxes, but the wind energy pays nothing. I have to pay taxes every day, you know, and it's kind of sad that I do and they get away with whatever they want.

And from what I see, when I grew up, I lived in the same area my whole life, the air is cleaner now than it was 30, 40 years ago. Thank you very much.

JOHN QUACKENBUSH: Well, I'd like to close this public forum by thanking all of our speakers today. I'm very happy that we were able to accommodate everyone who turned in a card. I'd like to thank you for the data, the reports, the studies, and the input that you've been providing. I'd like to encourage you to keep posting answers on our website, michigan.gov/energy, that will be available through April 25.

And I'd like to close by saying our next Michigan Energy Public Forum will be on March 18 in Kalamazoo on the campus of Western Michigan University. So thank you for staying a little bit over today to so we could finish. Thanks.

(Proceedings concluded at 5:38 p.m.)

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C E R T I F I C A T E

I, Lori Anne Penn (CSR-1315), do hereby certify that I reported in stenotype the proceedings held at the Michigan Energy Public Forum at Delta College, 1961 Delta Road, University Center, Michigan, on Monday, March 4, 2013; and do further certify that the foregoing transcript constitutes a true and correct transcript of my stenotype notes.

_____

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Dated: March 13, 2013