



INDUSTRY ROUNDTABLE

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Changing the energy-use culture

ECONOMY, ATTITUDES INFLUENCE ENERGY DECISIONS



JIM COURTNEY

Panelists traded ideas in a lively discussion of alternative energy use and the impact of renewable energy sources. Seated, from left, Craig Jackson, Dennis Elsenbeck and Tim Wright. Standing, from left: Stewart Haney, Kerrie Gallo, Ryan McPherson, Daniel Montante and Robert Galdys.

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While alternative energy may have long-term benefits, it can be challenging to sell it to consumers, many of whom have short-term objectives.

Daniel Montante, president and co-founder of Kenmore-based Montante Solar, said it's difficult to demonstrate that alternative technologies are the right way to go and are the solutions for the future.

SmartEdge Inc. CEO Robert Galdys said, "How do we sell some of these concepts? Typically it's an economic decision and it's based on short-term and it has to be a positive payback.

What we find, though, is those who have sustainability goals will go above and beyond them, perhaps then more than the economic payback to accomplish this."

While the roundtable discussion turned to using a portfolio of technologies, he said he would want to know how to establish a long-term

plan that everyone buys into.

"I sell alternative energy to customers every single day," said Craig Jackson, compressed natural gas product manager at Cobey Inc. "I think it's very important that we need to look at technologies that you can sell without all the incentives."

Solar Liberty co-founder Nathan Rizzo said seeing is believing.

"With a technology – and I'm just speaking for solar – it's not until people start seeing it being placed in their neighborhood where

there's some point of an actual consumer that has an installation that can speak about it and start talking about their own benefits and their own savings from the system," said Rizzo.

Ryan McPherson, chief sustainability officer at the University at Buffalo, said such a transformation wouldn't be an easy one.

"Getting people to really kind of think about that cultural change, you're asking people to change. And the first thing, unfortunately, with change is loss," he said.

► ENERGIZING THE GRID

Sources: Institute for Energy Research, American Wind Energy Association, Energy Information Administration

13%

Electricity generated in U.S. from renewable sources in 2014

0.4%

Utility-scale electricity generated by solar in U.S.

4%

Wind power's contribution to the national power grid in 2014

67%

Percent of electricity generated from fossil fuels in U.S. last year

INDUSTRY ROUNDTABLE

► **We're surrounded by a lot of great natural resources. Talk about your vision for energy sources for Western New York.**

DANIEL MONTANTE

President, Montante Solar/T.M. Montante Development



Clearly I'm a solar person and without a doubt solar does play a significant role in that. But I'm also a very practical thinker and believe that a portfolio approach is always going to be the best solution. There is no silver bullet to satisfy the energy demands of the region. So a combination of solar, hydroelectric, wind and certainly natural gas has to be part of that. It has to be that solution.

STEWART HANEY

CEO, Wendel LLC

The short answer for me would be

► **CLOSER LOOK AT THE ROUNDTABLE**

The Alternative Energy Roundtable continues a series of discussions with Western New York business leaders.

Throughout the year, decision makers from diverse industries meet for a discussion moderated by Business First journalists.

Excerpts from the conversation are published two weeks later.

Upcoming topics include nonprofits, health care, agriculture and food manufacturing, education and economic development.

Roundtable discussions, sponsored by Hodgson Russ LLP, are held at the law firm's Pearl Street offices in Buffalo.

diversity. There are a lot of resources here and I don't think all the eggs in one basket is the right play. So I think we need to leverage wind, solar and new renewable. Something like using a tides or river flow, that type of thing for generation. But the other thing I would add to that is we can't lose track of the demand side and efficiency. So because we have, for example, a lot of water here in Western New York, we tend not to treat it as valuable as it is. And other parts of the country, of course, see how valuable it is.

CRAIG JACKSON

CNG product manager, Cobey Inc.

Cobey's vision and my vision for the industry and alternative fuel for alternative energy for this industry, we believe that there's a lot of resources here in our region that could be further developed, much

like Stewart and Dan commented upon. I'll further elaborate on the natural gas and methane production side. We believe that there's a lot more biogas that could be captured and produced into the usual methane gas, whether it be for the vehicle fuel market or put in the pipeline for our home and business heating needs. We also believe that there's a lot of resources underground that are not tapped at this time, and we would like to see that further developed.

DENNIS ELSENBEC

Regional Director, National Grid

I agree with the idea of fuel diversity. We have to think about technology diversity, as well. We shouldn't be in a position to pre-select technology. We need to allow markets to really engage in that. And how you see the future – you have to think about it from a goal-setting point of view.

New York state has an extremely aggressive goal, that 50 percent of its supply source by the year 2030 is going to be renewable. So you have to consider that. Diversity of fuel, but also diversity of the type of generation plants also have to be considered – large scale versus small scale. We're not going to achieve that type of an aggressive goal by just looking at putting a panel on a building, a single building or a windmill next to a community. We have to really think bigger picture.



TIM WRIGHT

Principal and vice president, EnergyMark LLC

We have to be realistic about the alternative energies. And I agree with what was said before with the diversification of an energy portfolio in that

we're sitting so close to one of the largest finds of natural gas in the world. We can't forget the fact that natural gas is a foundation fuel. A lot of people refer to it as a bridge fuel. I think it's more than a bridge. I think

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- An industrial development agency in a financing transaction for the development of a \$490 million renewable energy facility named North American Renewables Deal of the Year by *Project Finance* magazine
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it really is a foundation fuel. When we look at this energy division, we have to define are we looking short term or over long term. And I think it's important to distinguish the difference because the amount of natural gas that's fueling a good portion of the electric system. We have to decide, well, how long, how far out into the future are we looking before we make the decision.

ROBERT GALDYS

CEO, SmartEdge

My vision is, first of all I think we're very fortunate. We do have all of the resources available to us. So I think diversity is definitely a solution. But in addition to that, I think we have to think in terms of doing this in the long term. Some of these technologies are not cheap. They're very expensive, so you really have to look at the big picture and try to work everything together. And I also think it's very important to consider the other side of the coin, and that's again the demand side, which is the conservation of energy. Let's face it – if you don't use it, you don't have to produce it in the first place. Our existing buildings, most of them can save 15 or 20 percent in energy. We have to make sure we take care of that, as well.

**KERRIE GALLO**

Director of Strategic Initiatives,
Buffalo Niagara Riverkeeper

Our vision would be to help push forward an energy portfolio that is less extractive, I think, both of natural resources but also the toll that our current energy profile takes on our communities and the people who live within the communities and how we would like to see the shift in the portfolio also take a balanced approach. Recognizing that combination of water, solar and wind is going to be necessary to achieve our reduction and our dependence on coal and things like that. The vision includes that there is an open and transparent process and a place to have very transparent conversations. I think that our public is very smart. There are a lot of people who can understand the incredibly complex processes that go into the energy conversation from cradle to grave, if you will, or from source to mouth – however you want to phrase it. I think it would be really great to be able to have some of these discussion that are happening right now between government and

industry in a more public way to bring more voices to the table.

RYAN MCPHERSON

Chief sustainability officer,
University at Buffalo

Kerrie's right; we live in an incredibly special place, both from the time of the Iroquois in thinking seven generations, three generations back, four generations forward – really thinking about those decisions. We have done this before and we are challenged right now. I think one of the pieces that frames the University at Buffalo's energy vision for the future and, really, their overall sustainability outlook is the obvious one, which is we are entering a new era, in an era that is facing an incredible challenge of climate change. I don't think you can talk about energy without thinking about the challenge of global climate right now. You have 200 nation states, probably plus, heading to Paris in another three months to think about how we frame out, how we move together as a global community. And what happens here in Buffalo, what we produce has consequences in other places and vice-versa; what happens in China affects here. So I think we have a challenge that needs to frame our current thinking about how we move forward with our energy next year. Our vision at the University at Buffalo is nothing short of 100 percent renewable energy. Or let me say it a different way: 100 percent non-carbon energy. There's a lot of different ways to do that. We have committed publicly, along with other higher education colleagues, to be climate control by 2030, an incredibly aggressive goal, one that keeps a lot of us up every night thinking about how we get there.

NATHAN RIZZO

Vice president, Solar Liberty

As far as our energy resources for Western New York and the entire state, they really kind of revolve around renewable energies. I hold solar very close to my heart, with Solar Liberty being our company. But I think that all forms of renewable such as wind, solar, geothermal – we have these resources right at our fingertips. Although there are incentives available, I believe with a stronger push and a stronger backing via the state government and the federal government, we can make these renewables much more powerful and grow them into larger percentages of our overall power production.

► **Kerrie and Nathan, when you mentioned alternative energy forms, you mentioned solar, water, wind and geothermal.**

I didn't hear natural gas.**NATHAN RIZZO**

Solar Liberty

As far as the natural gas, I was meaning the fuel cell technology, and I think with the current interconnection standards throughout New York state,

it makes it difficult for that fuel cell technology to come toward the forefront. Although I do believe that in the future it is something that's going to have a definite benefit.

KERRIE GALLO

Buffalo Niagara Riverkeeper

From Riverkeeper's perspective on natural gas, if you're asking specifically about hydrofracking, we do have a position statement that we've taken where at this point in time we don't feel that hydrofracking can be conducted in a manner that guarantees the safety and health of the drinking water resources of our communities. So we're not pushing that forward as part of a proposed future energy portfolio. I think it's safe to say that we would not claim to be an expert in any one of these particular technologies, so that's a reality. But we believe in a renewable-energy portfolio. We believe in not necessarily figuring out what you're against unless you also know what you're for. And I think at this point in time, some of the hard science information that has been presented in support of any of these technologies is a little lacking from a balanced perspective. There hasn't been enough room to have an open conversation on all ends of the table.

► **Anybody want to comment on natural gas?**

TIM WRIGHT

EnergyMark LLC

I don't think it's realistic to think that we can have – I think you're saying 100 percent for just the university, or are you indicating for the whole state?

RYAN MCPHERSON

University at Buffalo

No, for the whole state and for the whole nation.

► **So you think that the entire country can be on renewables?**

RYAN MCPHERSON

University at Buffalo

Yes.

TIM WRIGHT

EnergyMark LLC

Yeah, that's not realistic.

RYAN MCPHERSON

University at Buffalo

I think Stanford is leading in that and I think a lot of peer review information – that's why I encourage folks to look at that.

TIM WRIGHT

EnergyMark LLC

Maybe 200 years from now, and that's why I brought back in my vision what the term needs to be defined as. But in the next 30 years? Not a chance. It would take too long to cycle out everything we've already established. Maybe Dennis might want to weigh in on the power side, on the grid side. Do you think that's achievable?

DENNIS ELSENBECK

National Grid

If you look at the cost and you start to consider the cost, you have to separate the nobility and the moral nature of this and really start to look at who pays. So we look at it from the point of view of our customers and we listen to our customers in that regard. So it's got to be a balanced approach or you're going to start impacting local businesses, manufacturing. We have to watch and learn from our past and integrate the lessons from our past. So you have to consider that, that if we're going to put policies in place that have the potential of raising costs at a point where the market reacts negatively, all the positive gains that we make will actually be reversed. We want to make sure that we're encouraging an understanding of the past when we're developing these types of goals. And we have to make sure – I think it was Kerrie that mentioned that we've got to be more transparent about this issue. Get it out there, have the market involved in the conversation because it's a real issue to their bottom line. And if we just look beyond that for noble reasons, I don't think we're actually allowing ourselves to be as creative as we can.



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RYAN MCPHERSON

University at Buffalo

So I agree with Dennis in terms of looking at the past and thinking about those things and using that as a guide moving forward. I think we also need to move past the concept of addressing climate as, with all due respect to my good friend, a noble cause. It is a necessary cause and it is a cause that most of the rest of the world is actually gearing toward. And here's the piece – they're not necessarily doing it for noble reasons. They're doing it for economic gain and they're making lots of money in the process. We are trailing in this country in competing with countries like Germany and many others who are ahead of us in this. There is an opportunity that can make revenue in this transformation that we have to go through. It will take a long time. This is not a two-year, 10-year, 20-year transaction. This is a graduated kind of transformation that's going to have to happen.

TIM WRIGHT

EnergyMark LLC

I just want to point out that it has to be a realistic approach; it's not going to happen overnight. Certainly the ultimate goal to increase alternative energy, absolutely, all for it. But we have to be realistic. Realistic about the costs associated with it and how that factors back in in subsidies.

► **Is there one form of alternative energy that is more economical to develop in 2015 than the others? And will it remain the same, let's say, 10, 15, 20 years from now?**

RYAN MCPHERSON

University at Buffalo

I think it really depends on where you are and what you're doing. If you're talking specifically about Western New York, obviously we have made hydro work very well here, with very little environmental consequence in terms of when you compare something like what we have up the river to – in the Northeast, in the Northwest in terms of dams. But when you look at something like solar, I think that piece has been very interesting, watching the price per lot drop just dramatically. So seven, eight years ago we did a project at the university on the northern roof, a 75-kilowatt system, small by today's standards. That price was somewhere around \$7 per kilowatt installed. So if our 30-year rolling average at the University at Buffalo is around 7 cents a kilowatt hour, we receive some proposals to go in at 6.9 cents a kilowatt hour, 6.8

cents. So solar we see right now as one of the main options. There's a lot of them and it's going to have to be an all-in renewable approach to do that.

**STEWART HANEY**

CEO, Wendel LLC

I think you have to continue to invest in multiple technologies. Certainly you have to keep enough incentive on solar to keep the tension

that has existed because of the progress that's made, keep that progress going. But imagine if you invested in compressed natural gas infrastructure and you replaced every vehicle on the road that's burning gas or diesel with compressed natural gas. The impact that would have on reduction of greenhouse gases tomorrow would be huge. And at the same time, you don't want to completely starve another technology that we don't know yet may develop into the best answer 10 years down the road. So I think you have to look at them all a little bit in their timing and adjust the funding to each technology to get a balanced portfolio, if you will, like you would with your financial portfolio.

NATHAN RIZZO

Solar Liberty

I just wanted to further Ryan's comment. I think at least in our industry, in the solar industry itself, the only time that solar ever makes sense for a customer is if we're able to be lower than what the utility prices are. And over the course of the incentive, be it NYSERDA, with their assistance currently we've always been able to stay one step ahead of the utility prices. And as Ryan mentioned, we built the project at UB custom as a real work of art at roughly \$3.50 per watt. But now we're currently pricing systems out lower than what NYSERDA was offering for incentives even two, three years ago. And I think with the solar, we're starting to get into more smart grid technologies. We're doing a project currently in Long Island where the entire system has to be smart grid and the utility is going to have the ability to modify the systems output to the grid as it deems necessary. And so, with these functions coming along, I think it's starting to make more sense with the utility if they're able and they have the capabilities to modify systems output so it works with their own distribution network, as well.

DENNIS ELSENBECK

National Grid

I think where Nate was going, we have to be a little bit more reflective on cost. The reality is, we have to think about cost a lot more holistically. Just looking at cost from the framework of a supply perspective is really misleading the market, misleading our customers, to be quite honest with you. And it's not just looking at it from the point of view of the short-cycle fuel costs or the long-cycle climate change impact. It's really considering that there are three elements, basic elements, to meet an energy demand. And it was interesting because I think that Robert mentioned the demand-side alternatives. Well, the other two are supply-side alternatives and infrastructure alternatives, and we have to think about that. Tim mentioned Germany, but in Germany 54 percent of their supply during the daytime, during the peak period of time, is renewable energy. Then at 6 o'clock what happens? So you have to think about the impact of that on the infrastructure aspect of it. But if you think about supply, delivery and demand and think about it from a least cost alternative as opposed to just thinking about supply and the alternatives of supply, it's a much more robust conversation. And it includes all the aspects of the supply chain of someone needing energy, and someone who supplies energy than the individual that delivers energy.

KERRIE GALLO

Buffalo Niagara Riverkeeper

I think it's really important to talk about other costs, as well. There are other costs associated with any type of energy production, and I think that often we are guilty of not giving those costs equal consideration in the conversation. There's a cost to a community if we choose to build a hydropower plant along its river. There certainly was a cost to the Tuscarora Reservation for how they live their lives. It came at quite a cost for that. At Riverkeeper, we can tell you the cost to restore the Buffalo River is \$100 million-plus. What is the cost to build a production plant on the banks of those same rivers? Do we know that yet? I don't know if we do. What are those types of costs? What will the cost to the community be in the future if we push forward the hydrofracking agenda in this state? So I'd just bring that to the table, that that has to be part of the equation. And often this is the part of the conversation in a room that gets the eyerolls is the fuzzy economics, but there are ways to measure this. There are economists who can measure these types of costs and put those on the table for discussion.

**RYAN MCPHERSON**

University at Buffalo

Just to echo what Kerrie's saying: There's cost of inaction, as well. So this idea of true cost accounting and looking at the entire consequences

– the point that Dennis just made about thinking, I guess I would use the model of an ecosystem, taking the entire approach versus just supply of the infrastructure. And really thinking about how these things are connected is not a simple analysis. This is a long-term approach to thinking about, well, how does that piece affect this piece and how does it move forward?

► **How do you sell that long-term vision to a consumer that has very short-term goals or objectives?**

DANIEL MONTANTE

Montante Solar/T.M. Montante Development

Well, it can be tough sometimes. The environment today – my friend from EnergyMark can comment on current electric rates are pretty darn low right now in Western New York. So I know there's some pretty strong rhetoric coming from that end of the table, but I know there's also the perspective of taking a portfolio approach, as well. But to get to your question, rates are very low right now and it is tough to demonstrate that alternative technologies are the right way to go, the solution for the future. But the reality is that electricity rates are quite volatile, and people who have a pretty good understanding of what has happened historically about electricity rates will recognize that there is tremendous volatility that's tied to the underlying commodities used to generate that electricity. So to the extent that we become more reliant on natural gas and put more eggs in one basket, the opportunity and likelihood of major fluctuations in electricity rates is pretty high.

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STEWART HANEY

Wendel LLC

There's a real awareness piece. How do you sell that? In a lot of ways, you don't. If you've ever driven by – I won't use names – there's a few manufacturing plants here in Western New York that got labor power, very cheap power. And every light in the place is on all night long, whether there's someone there or not. And see, money talks. It's hard, but you think a little bit about policy here, I think you'd want to try and affect behavior.

CRAIG JACKSON

Cobey Inc.

I sell alternative energy to customers every single day, much like Dan and others here at the table. And I think it's very important that we need to look at technologies that you can sell without all the incentives. One of the technologies, one customer here, a local warehousing grocery distributor, just for example – they're displacing 1.2 million gallons of diesel, which we all know that they're going to natural gas. They're using an American fuel now. We're not importing all that fuel from other countries. That 1.2 million gallons of fuel that they're displacing not only burns cleaner but they're also able to now – they're doing this without any funding – no NYSERDA money, no grants, no incentives from anybody. It's a self-sustaining project and I think, Stewart, you mentioned that earlier. And I think it's very important that we're all trying to sell alternative energies here, but we need to look at what's going to be sustainable not only on the energy side but also on the commercial side long-term.

DENNIS ELSENBECK

National Grid

I think right now New York state has the best opportunity that I can ever recall of looking at this issue holistically through, as I think Ryan mentioned, the Reforming the Energy Vision proceeding that's currently in place today. This is the greatest opportunity to develop your market voice and get involved in this proceeding. So that when we say the bill went up, there's transparent recognition as to why the bill went up. Because we were involved in this holistic discussion about the future of how New York state will reinvent its energy systems. And if we don't, we will look at repeating history and then only react when the bill comes out. And then there's a discussion of what happened to the bill. Dan mentioned that energy prices are really low. So we can look at that and say: Why are they really low? Are they really low because of supply/demand ratios that are out there in

our zone, which is – the Western New York actually is supply-rich, so we have to think about that. The expertise is around the room, but we need our customer. We need the market more fully engaged in this debate so that they fully appreciate how costs are actually ascertained in this arena. And I truly believe the debate on an integrated resource approach to this between supply, delivery and demand will provide more opportunities for everyone.

TIM WRIGHT

EnergyMark LLC

We deal with residential customers every day and with their bill both on gas and electric. Fortunately, prices have been low and we're not getting the "I can't believe how high my bill is today." We're very fortunate in Western New York, probably in the U.S. as a general rule, that our prices for energy are as attractive as they are. Certainly other countries are paying two and three times the price we are for power and gas. So I think we're very fortunate to begin with. And part of that is just simply because of the natural resources we have here locally or 150 miles from here in Pennsylvania where they are doing a lot of shale development and reutilizing that natural gas to create a lot of low-cost power. I would say that, ballpark, 35 percent of the power that we're using is fueled by natural gas. So to the extent we keep natural gas prices low, we keep electric prices low. It's a direct correlation and the customers of ours are actually benefiting from that. But the near-term projection probably out for the next five years, prices look very attractive, very good. Come up at any futures firm and see that – the price in the market is already reflecting that. It is a very fair price, I guess, for the services and the benefits they're getting from that product. So fortunately we are in a good environment right now price-wise.

ROBERT GALDYS

SmartEdge

You asked the question about how do we sell some of these concepts. Typically it's an economic decision and it's based on short-term and it has to be a positive payback. What we find, though, is those who have sustainability goals will go above and beyond them, perhaps then more than the economic payback to accomplish this. A concern that I have, though, is what I heard today is our solution is a combination of many technologies. It's long-term. A concern I have is how do we establish a long-term plan that everybody buys into? What I'm hearing is the market is certainly a very strong proponent that's going to help get us there. But there still has to be something else

in here to help establish a long-term proponent to this. That's our real issue. How are we going to do that? I don't have the answer.

KERRIE GALLO

Buffalo Niagara Riverkeeper

Obviously I'm not selling a product, per se, in terms of having a dog in the fight in this particular conversation, but I want to try to draw an analogy between what is part of my job. So a big part of what I do is trying to sell maybe even to some of you sitting here at the table the concept that protection of water quantity and quality is critically important to a healthy economy. So in the context of some of the conversations that Riverkeeper's been having through the lens of what would Buffalo's new economy look like, one that's focused on building an economy based around water and how we use that water, how we interact with that water, how we build that into the economic lexicon. There's two particular things that I have found recently that are making traction with outside investors, with the public and with businesses. One of those things is taking a look at trying to value the risk side of things, and when I say that, I mean trying to help business and citizens sort of understand the opportunity costs that are associated with any given choice they're making. The second piece is that triple bottom-line investment that's really, really hot right now. So if we're thinking about what appeals to investment managers, what do people respond to, it's that return on investment, both the economic, environmental and social aspects. And so we're seeing that this is what today's investors want.

RYAN MCPHERSON

University at Buffalo

There are four basic points when we're trying to sell. There's a lot of diversity in who you're pitching to, whether it's residential or different sophistication levels and acceptance levels. I think the four are this: Economics, obviously and there's a piece we've talked already a bit about in terms of lots of times, but often renewable option is less expensive right now. The second one is responsibility. So I think if you lead with economics, then you've got this kind of moral piece of what are we doing here? What do we want our future to be like? And what



obligation do we have? You just turn on the lights and it's there, or should you actually really think about what the consequence of turning on the lights is. The third one is this kind of fear of being left behind. We have, unfortunately, a history in this region where when we did not innovate and we did not move on to the next thing, we had a long period of economic stagnation. So we look at steel or you look at the canal – we did not move quick enough to adapt the next innovation. And the fourth one is, I don't think in this sector that failure is really an option. We're going to have some serious consequences; we already are global. And the question is: Do you want to pass that on to your children and your children's children? This is not widgets that we're making here.

NATHAN RIZZO

Solar Liberty

I think at least one good thing is I get to follow and kind of feed off of what everybody else said. And I think we're still focusing on simply the supply, as Dennis had mentioned. And I think that, really, if we're going to start focusing on the future, it's how do we get to that future. And as of right now, everything is -- for the past year, we can't think of any weather events or any large impacts on the distribution grid that has really affected the fluctuation of cost.

► Craig mentioned about developing things that don't need incentives, but there still are incentives out there that are required for some of this alternative energy. How important are they to advance new technologies?

NATHAN RIZZO

Solar Liberty

I think they are important, at least in the solar industry. We still need the 30 percent federal tax credit. We still need other portions of incentives to help reduce the cost. I think we always talk about the incentives that are available for renewable energies, but how are the other power factors being subsidized? I don't think that's as clear an answer as the current incentives for solar or other renewables.

► We now have SolarCity coming to town. In terms of the idea of maybe getting people to change their mind, is there a change in perception of alternative energy?

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DANIEL MONTANTE

Montante Solar/T.M. Montante Development

People are getting it definitely more today than they were yesterday. You can pick your neighborhood and take a drive – you'll see a variety of solar installations across the region in Erie County. Businesses have invested in solar and they view those projects as investments. The network speaks and people are accepting that renewables, particularly solar, do work in the region. With the announcement of SolarCity building their manufacturing facility in South Buffalo, clearly that has put an additional spotlight on renewables in our region, particularly solar.

STEWART HANEY

Wendel LLC

And I think that, really, the best is yet to come assuming SolarCity actually starts to produce panels and ship panels and hire people. I think that impact will be greater than it is right now. We're a little bit of a skeptical society, right? Until we see it, we're not 100 percent sold on it.

RYAN MCPHERSON

University at Buffalo

A quick story about a quantitative way, maybe of just looking at that anecdotally. A year and a half ago, we partnered with Grid and NYSERDA to do some pilot electric vehicle stations. So depending on where you get your source for that, obviously the renewable part of that. But we had one EV vehicle on campus in terms of staff or faculty or students who were driving. A year and a half later, we have 30, and people are fighting now to get those spots, to be able to charge. That's in a year and a half.

DENNIS ELSENBEC

National Grid

I think it's an interesting question because my question back to you is: What do you mean by what do people get? Is it that they get the acceptance that green technology is the wave of the future? I'd say the answer is probably yes. Do they feel that it is a short cycle, lower cost to them? I think they would think that way. Do they feel, as Nate pointed out, that it adds to resiliency so I actually have no more outages? I always try to understand that. So what I worry about is that we send a message and then essentially we deploy and we put this technology forward and then we end up with a Germany situation where you do get 50 percent of your sources is renewable, and then all of a sudden you have reliability, resiliency problems after 6 o'clock.

TIM WRIGHT

EnergyMark LLC

I think that the next generation definitely has a different vision for energy than, say, the coal generation, the generation before us. That generation is dying off. Now we're into this natural gas generation, if you will. And I think there will be another generation after us that will be more toward sustainable renewal. It will happen. It's just that it's generational is my point. It's not going to happen in the next 10 years or the next 15 years. But we will eventually evolve toward a generation where it is renewable and sustainable, similar to the way we evolved away from the coal generation. It's just progression.

► **Does there need to be something that would hasten the shift in culture?**

NATHAN RIZZO

Solar Liberty

I think seeing is believing, and with a technology – just I'm speaking for solar – it's not until people start seeing it being placed in their neighborhood where there's some point of an actual consumer that has an installation that can speak biasedly about it and start talking about their own benefits and their own savings from the system. So it's just a matter of the marketing aspect along with real-world applications of those solar systems.

RYAN MCPHERSON

University at Buffalo

This is not an easy transformation, getting people to really kind of think about that cultural change. You're asking people to change, and the first thing, unfortunately, with change is loss. You have to give up something in order to move forward, and that's very challenging. I think, for humans in general.

► **Before we wind up, are there any other issues we need to get on the table?**

NATHAN RIZZO

Solar Liberty

I think as far as the change, we can all agree that some sort of change needs to take place, whether it's tomorrow or 20, 30, 40 years out in the future. The community, our residents, need to start focusing on other ways of delivering the power and energy production itself. And I think when the market as a whole comes together, once it is perceived that everybody is working together, that that's when the real change

starts to take place.

RYAN MCPHERSON

University at Buffalo

I'm really encouraged about this conversation here and some of the other conversations in this sector throughout Western New York. I think we need three things as we move forward. We really need to kind of come together, figure out where that is as a community and chart that course.

KERRIE GALLO

Buffalo Niagara Riverkeeper

I want to hammer home that Riverkeeper's perspective on this is really about making sure that the conversation is comprehensive, is inclusive, is respectful, is holistic, is looking at things from the front end and the back end in terms of how we make decisions at the end of any part of the processes. And making sure that whenever we're having conversations, it's backed by balanced, sound science and not just an argument, a platform for argument. It has to be a platform for discussion, for transparent discussion

ROBERT GALDYS

SmartEdge

If there's an initiative to have consumers be energy-independent as a solution, the question I've had is about the grid as the people come off grid, how are we going to continue to support the grid until everybody is off it? And people, in reality, have to spend money to save money, which is not American, so that's kind of still part of this marketing issue.

TIM WRIGHT

EnergyMark LLC

We have to develop the alternative energies, there's no doubt about that. I don't think anyone here would argue otherwise. But at the same time, you have to run parallel with existing and proven fuel technologies that are currently carrying the load today, and it's going to carry the load 15 years from now and probably 30 years from now. We have to maintain that; we have to improve that. So I think while we continue to develop the alternative energies, let's not forget about the existing technologies.

DENNIS ELSENBEC

National Grid

I just want to make it clear that alternative energy sources are part of National Grid's future. So from the perspective of the grid guy, we embrace this. We embrace this

debate and feel it's part of our future, the manner in which we serve safe, reliable energy for our customers. So we are actively part of that debate.

CRAIG JACKSON

Cobey Inc.

Western New York has a very rare combination of many renewable energy sources. Natural gas is in abundance, water is in abundance, solar obviously, and then all these industries are being supported by a lot of technical and manufacturing expertise. And I think the stage is set very well for us to become a center of excellence, per se, to where we can be a demonstration to the country. Because we use other countries as examples, but none of them are ever doing all the things that Buffalo could do with alternative energies in one location.

**STEWART HANEY**

Wendel LLC

I heard bounced around earlier idea planning, having a master plan. I think the effort and thought that would go into planning like that would be extremely valuable so long as the plan went up in pencil. If you look at the newspapers about a year before the oil prices dropped off, the consensus was \$5-a-gallon gas, and we're never going back. And look where we are today.

DANIEL MONTANTE

Montante Solar/T.M. Montante Development

This has been an interesting talk. The focus has been on alternative energy, and to me, this is about legacy. A lot of what we're talking about is legacy here. And if you think back in time, who are the heroes of the oil industry? Who are the heroes of the coal industry? I don't really know. Not really sure who the heroes of the natural gas industry are or will be, but I'd like to be a solar hero. And I think that what we're talking about is not just economics; we're talking about what's best for society.