

# **Tompkins County Energy and Economic Development Task Force**

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## **Appendix A**

### **Public Outreach and Comments**

The Draft Final Report of the EEDTF was released to the public for review on May 4, 2016, with a deadline for comments on May 27. On May 18, the EEDTF held a public input session on the report (notes from that meeting below). In addition TCAD and TCPD staff presented the report and solicited input at several meetings: The Planning, Development and Environmental Quality Committee of the Legislature on May 18, TCAD's Board of Directors on May 19, Tompkins County Planning Advisory Board on May 25, and Tompkins County Climate Protection Initiative on May 27.

The comments addressed most sections of the draft report and while there was some duplication among the comments, there was a wide variety of suggestions made. All of the comments received are pasted below. No attempt was made to edit or consolidate the comments except to remove names from the comments.

The EEDTF reviewed all of the comments and agreed to make the following substantive changes to the report in response to comments that they felt corresponded to the level of detail included in the report and in-line with the Task Force's original charge. Additional changes, not listed below, were also made in order to amplify information already included in the report, clarify sections of the report, and correct grammatical errors.

#### **Proposed Substantive Changes**

1. Clarify throughout that the goal of the Task Force was to develop recommendations that could be at least started within the next 5 years. There was continued confusion over the use of 3-5 years, as people thought that meant that nothing was envisioned to happen until three years out.
2. Natural Gas in Tompkins County Section: Finish the quote from the Energy Roadmap that explains that reaching our climate goals while maintaining 50% of 2008 levels of natural gas use will only be possible if fugitive methane emissions from production and transmission of natural gas is addressed.
3. Added a section titled "Concerns about Methane and Greenhouse Gas Emissions: Research and Activism" near the section on the West Dryden Road Pipeline to explain the urgency expressed by residents around the consumption of shale gas and its implications for climate change.
4. Added a section titled "What We Learned: Excerpts from Two Presentations on Energy and Economics for Buildings to highlight some of the learning of the Task Force about the state of building energy efficiency and electric powered HVAC systems and the economics of those systems.
5. Recommendation 5 regarding transportation was expanded to more clearly explain what was envisioned in a TDM program.
6. Added another sub-action to Recommendation 6 regarding housing to address split incentives for energy investments for landlords and renters.

7. Added a new Recommendation 7 to emphasize the need to educate the community on the issues of energy and economic development.
8. Added a new Recommendation 8 to outline how to move the recommendations forward and evaluate progress in the future.

### **May 18, 2016 Public Input Meeting**

- Throughout the report the words “natural gas” should be replaced with “methane,” as that is the proper name of the gas.
- Need to make sure we’re not violating the “rule of holes” when you’re in a hole and you want to get out of it, you need to quit digging. Methane is our addiction, so we just need to stop using it.
- Avangrid is not incentivized to reduce the use of any energy as they get money from controlling the pipes and wires that transmit the energy.
- It would be good to reproduce what the Village of Groton has for electricity throughout the county.
- Need to emulate a model island off of Denmark that is very close to being self-sustaining. They heat with hay.
- If the West Dryden Road pipeline is built there is no way the County can achieve its ghg emissions goals.
- The County’s ghg emissions goals are not strong enough.
- Recommendation 1 is an excellent way to approach the problem of the West Dryden Road pipeline.
- Could also ask NYSEG to engineer the West Dryden Road pipeline to just meet the reliability needs of the current system and not size it to meet any new demand.
- Another approach to the West Dryden Road pipeline is for the Towns of Dryden and Lansing to put a timeline on the permits so that the pipeline couldn’t be tapped forever, but be limited to a certain time period.
- Most of the recommendations are about reducing energy use, but Brice Smith’s work shows investors that it is possible now to get the return on investment by building to passive house standards and using air-source heat pumps.
- Brice’s report should be included in this report, to give the Task Force’s report some credibility.
- Need to educate people on how to use the SEQR law to analyze energy and ghg impacts and require reporting of those aspects of projects.
- Encouraged by many of the recommendations.
- Discouraged that the report does not state “no pipeline” and the fact that it is silent about the impact to homeowners along West Dryden Road. Why is the focus on protecting businesses, but not homeowners?
- Asking that the County stick by its policies and protect its residents.
- There is a fundamental lack of respect being shown to the scientists who are doing research into the impacts of methane, especially from NYSEG. His work found that at a minimum the West Dryden Road pipeline will increase ghg emissions by 15%. Also, a survey of all NYSEG’s pipelines with equipment that is 10,000 times more sensitive at detecting leaks found 57 leaks in the existing pipelines. He had a meeting with NYSEG staff in October 2015 and received promises from NYSEG about information that they would provide to the study and NYSEG never

followed through. This lack of professional respect included criticizing his work at one of these Task Force meetings, even though he was not invited to the meeting to offer a rebuttal.

- The first two recommendations are mutually contradictory. How are you going to do it? The implication is that it will be done with natural gas.
- Without the West Dryden Road pipeline, developers have made choices for heat pumps: Village Solars, HOLT, Varna's new development, and heat pumps are being investigated by Tompkins Trust and Maplewood. EcoVillage at Ithaca are leaders in low energy use.
- Those that say it can't be done should move out of the way of those who are doing it.
- If money is invested in supplies and infrastructure to support this old technology, then we're stuck with it for a long time.
- Need to figure out how to use methane for activities that can't run on heat pumps, etc.
- Make sure to call on our local expertise and make it part of the solution.
- Encouraged by the report.
- Strongly opposed to the West Dryden Road pipeline.
- Most of the recommendations focus on ghg goals, but little is about economics of green development. Had hoped to see more of that. For example, is there agreement that it is cost-effective for businesses to use alternatives to natural gas?
- Need to tap experts like Tony Ingraffea and Bob Howarth.
- Guiding question should be, What are you going to tell your grandkids you did to fight climate change?
- Still don't really understand what industrial processes need natural gas so badly. Why? What type of industry? Reply: It is more about the amount of energy required for some processes that make it cost prohibitive to use anything more expensive than natural gas.
- So the question is really about how to fill the cost gap to incentivize businesses and others to use electricity instead of natural gas.
- Encouraged, it's a good start.
- Concerned that often reports grow mold from lack of use. Hope we will include everything we can to decide who is going to be doing what to move the recommendations forward.
- Every time we invest \$1 in gas, the more disincentive there is to walk away from it in the future.
- It is way past time that we moved away from fossil fuels. Have to do something differently and have to have a sense of urgency to make that change.
- Congratulated the Task Force on over the course of one year going from the perception that each side was on polar ends of these issues to forging a common understanding that we have a problem that needs to be addressed and that it should be addressed sooner rather than later.
- Still need to identify how to get information in developers hands now and actions that can be done now. For example, it's a relatively low amount of energy used in the industrial sector, so could we pursue demand management in the area where natural gas is limited by incentivizing the big box stores to put solar PV on their roofs?
- Encourage the Task Force to have a new more meetings to try and understand the methane issue better from Tony as well as to identify more actions that can see results quickly.
- Does not want the West Dryden Road pipeline built, period.
- We have a lot of really smart, caring people here – the problem is how, where and who. Appreciates that we are all thinking about these big issues.

- “Mandate” request from the PSC is her favorite word in the report. Recommendation 1a needs to be rewritten: remove “realistic” and “economically viable” because they mush-up the atmosphere so that you will never get to the mandate because those mushy words are in there and mean different things to different people. For example, “economically viable” should take into account the expected rise in natural gas and the cost of the retrofit, among other things.
- Today’s gas furnace will be tomorrow’s stranded asset.
- There should be no new gas infrastructure, period. Need to draw the line in the sand.
- Make the Business and Technology Park a showcase for new green technology.
- New developments are choosing to use fossil fuel without considering alternatives, so there is a moral aspect to these choices. Others pay the price for those developments that ignore the alternatives that are out there.
- Ask that the Task Force engages the Town of Dryden Boards more.
- Doesn’t have much faith in this Task Force because they haven’t engaged the Town of Dryden. People on West Dryden Road should know what businesses are causing the eminent domain to happen so they can protest those businesses.
- Who is going to pay the costs of health impacts to residents from the transport of radon-laced natural gas?
- West Dryden Road residents should have been involved in the work of the Task Force instead of dismissed like they don’t matter.
- West Dryden Road pipeline should be a definite “no”.
- With fracking, we didn’t wait for the state to act, but took action locally. The same thing should be done with the West Dryden Road pipeline, because it is just as important of an issue.
- It takes courage to change direction, so he has a problem with all the solutions in the report having to be run through the filter of not hurting the economy. Need to consider both loss of jobs and creation of new green jobs with a new approach to energy.
- He feels we did a comprehensive job with the report. But there is a lack of emphasis on how the recommendations will get used and how to get that pathway moving.
- Developers need to understand early-on the energy needs and opportunities in a building.
- Should add a recommendation to educate people on how to use SEQR to assess energy and ghg emissions in projects.
- HVAC companies are an important group to education and influence about alternative systems to natural gas. HeatSmart Tompkins has been working on that.
- HeatSmart Tompkins has done a lot to change the business culture from within and help businesses see positive economic gain.
- Limited natural gas is good because it pushes businesses to really look at alternative and take another path. If the West Dryden Road pipeline is built, there will be less interest in looking at alternatives.

**Please see Appendix H for all written comments received on the May 4, 2016 Draft Report**

### **October 29, 2015 Public Input Meeting**

- Overarching themes:
  - It is imperative for the TF to focus on educating the public on the issues regarding Energy and the Economy and encouraging them to use available solutions, programs.

- We should collaborate with other existing programs to make a difference regarding energy efficiency.
- Look to provide a more affordable means to encourage people to make changes to their homes, businesses to become more energy efficient.
- Encourage people who are living in energy efficient homes to host open houses (with cider and snacks) with their neighbors to share their success – through education the goal is to ultimately encourage others to do the same.
- Although it is important to focus on sustainable energy – the Task Force is encouraged to not forget about equity and social justice while making recommendations (How can we help low income housing be more energy efficient?).
- We need to determine how to motivate people to do the right thing (in terms of energy efficient decisions) – he cited an example in Seattle, Washington – the 2030 district. Energy efficiency is part of public record in some places – it may put pressure on businesses to do the right thing if their energy efficiency, or lack thereof, is public knowledge – social pressure.
- Look at the model of gains made in other countries regarding energy efficiency – like Scandinavia – what could we learn from them (training, information and implementation)?
- There is a challenge (to the average person) to be able to implement energy solutions because there is a lack of affordability for some of them.
- The TF should be looking for ways to collaborate with entities that are working on similar initiatives and attending the meetings of other groups where they are promoting new technologies/practices to save energy (like heat pumps through Heat Smart Tompkins).
- What about a program for efficiency upgrade for homes – showcase the process and have the winners promote the benefits of doing this.
- January recommendations to TC Legislature – will there be open comments at meetings? Will there be public comment on the draft report?
- 4-6 public presentations of what is shared with TCL
- Incorporation in Energy Strategy of County
- How useful thinking about TCL as audience – should think about common council and others who can make decisions too. Broader audience.
- Will report be a consensus? Minority Report? Of 16+...Will likely identify areas of dissent among the group within the report.
- Brings equity into the energy transition – rec that as we work on the 5 topic areas we use equity as a frame for all of those conversations. Equity and social justice should be a frame in each of the topic areas.
- Improving EE – carbon offsets to weatherize low-income houses. Great evolving infrastructure to renewables building infrastructure that brings gas through a pipeline of power station has long-term impacts and this grows needs to deal with it in short term because decisions now have long terms impacts. Infrastructure that supports changing the power plant about more pipelines equal 50 years commitment.
- How to motivate people to do EE in buildings 2030 districts example in Seattle. After 3-5 years of struggling enacted mandated disclosure of energy data with that caused increased participation b/c all could see how much money could be saved. Increases shows need to educate and spark interest (?)
- Carbon tax part of legislative platform to do something bold to tackle problem.

- Why committee assigned 3-5 years (pro-business) – business like time scale. Those time scales need 10% reduction now. +0.1% in 2049./need to ramp up the reductions to be 10% now, not 2/5 every year – more now. What can really be done in 3-5 years? Front-loaded the study to favor business.
- Have businesses and ... community interact have needs in very short time frame.
- People making decisions today e.g. PACE program, Solar Tompkins, one step at a time.
- 3-5 year does not equal life cycle costing; equals we want to do something now. Thinks we need to take action on soon.
- Gave examples of two meetings with companies this week. One took its jobs to Binghamton because it could not get the electricity it needed. The second company took its jobs to Mass because it cannot get the natural gas it needs. We need the right information and need creative solutions while keeping our eye on the long-term ball.
- He likes the size of Tompkins County (100,000)/40,000 HH. Biz + families and organizations, they do want to do something now. They need system to help them do things. Hand holding, following up. Connecting them to resources/businesses Guelph Ontario – one person visits about 300 HH/year.
- Dryden – try to say constructively. Heat pumps = cost savings. Haven't seen EEDTF committee members at those meetings. People need to go to those opportunities and opposed to say they don't exist.
- By not allowing discussion on W. Dryden Road, Power Plant, makes it so we will just be at status quo still. No real change.
- Would be good to get people more engaged. Shouldn't businesses being denied gas have looked at heat pumps. She is baffled by people not wanting to learn about them
- Can we create a position to assist companies in doing EE, renewable work/design to help keep businesses here?
- Passive house technologies from Scandinavia. Super insulation/ small heat ventilation provides all that is needed. Gets us to both our goals. Why can't TCAD be educating people on those savings and really promoting EE.
- Lack of education echoes this. Why can't we also focus on longer-term time horizon to be able to focus on impactful actions?
- Climate reality is an existential threat. County level GHG emission goals are way out of date – 2050 is too long. What to do and what to not do. To do: reduce emissions from everything, not just transportation. When a building plans to leave, can we help them understand there are resources locally?
- What is missing is industrial processes.
- Heat Smart Tompkins – heat pumps are not well understood. Solar was sexy and everyone knows about it. But not the same with heat pumps. We need some kind of displays – people need education experiences.
- County could be a leader in adopting Heat Pumps.
- Financing of things is a challenge. With the high-cost of living, the middle class cannot afford this, low income cannot afford this and then there is the renter issue. For people to afford these wonderful ideas the State and Feds have been half assed. Financing is critical – needs to make financially feasible.

- Work with banks to develop financing recommendations. PACE commercial another one not getting heard about out there. CCETC coordinating with commercial green building tour – how to get businesses to go? Would welcome help from CC and TCAD.
- The technology is here. We have faith that technology will save us. If the technologies are here – strange? New? Expensive – must solve the challenge of financing and education.
- Connection to resources – education there is a great work by Healthy Energy Fact Sheets- good tech information available for education. 2) Equity and financing .. fee’s divided legislation. With divided would come find for regular folks to afford things won’t happen right away though. Finance and Credit vary ... for equity.
- Traditional we do energy studies – 20 to 25 % reduction. TO get to 80% we need “deep” energy studies and energy improvements. Costs go up and ROI is very far out or non-existent. Hopefully things will change in NYS. Technology is there but not the financing.
- Education of policy makers not getting through. Heat pump presentation – careful study is not a panacea .. but is breakthrough. Eco Village has a number of passive houses and doing net zero energy house with Ian Shapiro.
- Need people being paid to put the pieces of the puzzle together. 15 building owners in class this year to walk through process with evaluation together. Will offer the class again in 2016 because great success. Can’t just educate need helpers to apply to own lives and buildings. All of this takes time, money. Traded 12 messages with Renovus want to get PV but no time. ... opportunities but need to be welcoming.
- We are so far ahead of other Counties – we have PACE – do need to do the hand holding. All this takes time and money. Park Foundation has been wonderful. But she wants to be in community solar – 12 phone calls later w Renovus haven’t got it solved yet. Really wants to do it.
- Took long view. EEDTF compliments the long view.
- Education is good. Also need to force it. Look at abatements, approvals of things make these things required. She wants to see policies adopted regarding funding, abatements, approvals need to be tied to making applicant at last think about these technologies and show why they can’t use them if they can’t.

## Appendix B

### Meeting Schedule and Topics Covered

#	Date	Main Topic	Speaker(s)
1	6/30/15	Organizational Meeting	Charlie Trautmann
2	8/11/15	Overview of Energy in Tompkins Co Energy in Commercial Buildings	Martha Armstrong Graham Gillespie, Herman Sieverding
3	8/26/15	Energy in the Transportation Sector	Fernando de Aragon, Ithaca-TC Trans Council
4	9/30/15	Energy Road Map Presentation	Ed Marx, Katie Borgella
5	10/14/15	Reflection & Recommendations: Potential Strategies & Policies	Trautmann & Armstrong
6	10/29/15	Public Input Meeting	Task Force
7	11/3/15	Overview of Energy Infrastructure, Markets, and Policy	Gordon Boyd, MEGA
8	12/3/15	Retreat (4 hours - La Tourelle) Heat Pumps, Economic Development, Task Force Recommendations	Brice Smith, SUNY Cortland, Michael Stamm, Martha Armstrong
9	12/9/15	Energy Efficiency in Buildings Report Outline & Recommendations	Ian Shapiro, TAITEM Engineering
-	1/14/16	Optional Field Trip to NY Independent System Operator in Greenbush (Albany )	Kenneth Klapp, ISO
10	1/20/16	Electric Grid Operations in NYS	Brian Conroy, Avangrid
11	2/4/16	Gas Transmission and Distribution System	Michael Eastman, NYSEG
12	2/18/16	Decision Framework & Priorities for Report Recommendations	Task Force
13	3/9/16	Discussion of Draft Report	Task Force
14	3/17/16	Discussion of Draft Report	Task Force
15	4/1/16	Task Force Meeting: W Dryden Rd Pipeline	Task Force
	4/12/16	Distribution of Draft Report to Task Force	
16	4/19/16	Task Force Meeting to Discuss Report	Task Force
	4/25/16	Distribute Revised Report Draft #2 to Task Force	Katie Borgella
	4/28/16	Deadline for comments back to Katie Borgella	Task Force
	5/3/16	<b>DRAFT REPORT FOR PUBLIC COMMENT</b>	TC Legislature (mtg) TCAD Board (send)

	5/4/16	Distribute draft report for public comment	Katie Borgella
17	5/18/16	Public Input Session #2: Comments on Draft Report	Task Force
	5/18/16	Presentation to PDEQ Legislative Committee	Coord with Martha R
	5/19/16	Presentation to TCAD Board	Coord with Martha A
	5/25/16	Presentation to County Planning Advisory Board	Coord with Katie B
	5/27/16	Presentation to TC Climate Protection Initiative	Coord with Peter B
	5/27/16	Deadline for Public Written Comments	Members of the Public
	6/8/16	Revise Report & Send to Task Force	Charlie Trautmann
	6/9/16	Task Force Meeting: Methane	Tony Ingraffea, Cornell
18	6/13/16	Task Force Meeting to Discuss Revisions	Task Force
	6/21/16	Presentation of Final Report to Tompkins County Legislature	TBD
	6/22/16	<b>PUBLIC RELEASE OF FINAL REPORT</b>	Joint Release by TCAD & TC Legislature

## Appendix C

### Glossary of Energy-Related Activities

This is a dynamic list that changed regularly during the Task Force's work. Many additional activities could have been listed. The Task Force aimed to keep the list to a manageable number and regrets any omissions.

- 2030 District (TC)
- Avangrid and REV Demonstration Projects (TC and Commercial - international)
- Black Oak Wind Farm
- Cornell University, Ithaca College, and TC3 President's Climate Initiative (TC)
- Energy & Economic Development Task Force (TC)
- Energy Road Map (TC)
- Energy Smart Communities (Commercial - TC)
- EV Charging Station Feasibility and Implementation (TC)
- Exploration of Advanced Building Codes by Municipalities (TC)
- Home Energy Rating and Disclosure Project (TC)
- MEGA – (NYS)
- NYISO – New York Independent System Operator (NYS)
- PSC (NYS) – Community Shared Solar, Large Scale Renewables, Standard Interconnection Revision Process, Clean Energy Fund, Large-Scale Renewables
- REFORMING THE ENERGY VISION - PSC
- Regional Educational and Training Initiatives Around Renewable Energy (Regional)
- Repowering Cayuga Operating Co. / AES Cayuga (Commercial) (Jerry)
- Residential Energy Score Project
- Solar Tompkins: Switch to Solar and Heat Smart Programs (TC)
- Tompkins Community Solar Initiative (TC)
- Tompkins County Climate Protection Initiative (TC)
- Tompkins County Commercial Energy Efficiency Collaborative
- West Dryden Road Gas Distribution Pipeline (Commercial - TC)

#### **2030 DISTRICT**

The Ithaca 2030 District is a collaborative, nationally recognized, local community of high performance buildings in downtown Ithaca that aims to dramatically reduce energy and water consumption and reduce emissions from transportation, while increasing competitiveness in the business environment and owners' returns on investment.

#### **AVANGRID & REV DEMONSTRATION PROJECTS**

Avangrid (AH-von-grid) is the U.S. subsidiary of Iberdrola (EE-burr-DROH-la) a Spanish multinational utility. Avangrid has operations in 24 states. It is the parent company of New York State Electric & Gas (NYSEG) and Rochester Gas & Electric (RGE). Avangrid seeks to transform the U.S. energy industry through renewable energy generation and natural gas storage and trading operations.

Avangrid operates in New England and New York State and delivers natural gas and electricity to nearly three million customers. Avangrid Renewables has the largest renewable asset base of any

company in the world. Counting energy storage, it has 60+ projects in 24 states. Avangrid Energy Holdings is one of the largest gas storage operators and gas traders in the country with 130+ billion cubic feet of gas storage and an energy services trading floor in Houston and Salt Lake City. (Avangrid website)

### **BLACK OAK WIND FARM**

The Mission of Black Oak Wind Farm LLC is to give New York residents the opportunity to own wind energy assets, providing clean energy to the grid and financial returns to its investors. Its vision is to develop, own, and operate an 16.1 megawatt wind farm in western Tompkins County. There will be seven GE 2.3 megawatt turbines. Construction had not started as of early 2016.

### **CORNELL UNIVERSITY ENERGY, ITHACA COLLEGE, AND TOMPKINS CORTLAND COMMUNITY COLLEGE: PRESIDENT'S CLIMATE COMMITMENT**

All three area colleges and universities have signed on to the Presidents Climate Commitment and are working toward carbon neutrality.

Cornell's Energy & Sustainability Department seeks to reduce the university's environmental footprint while providing reliable, cost-effective energy and water to campus. It catalyzes sustainable campus activities across many areas, enhances Cornell's reputation, and participates in exciting, mission-critical teaching and research activities. 150 members serve on various committees of the President's Sustainable Campus Committee, which oversees dozens of initiatives on energy, climate, and other topics.

Ithaca College has re-framed sustainability as a decision-making framework for continuous improvement, asking members of its campus community to be mindful about the decisions they make, and to take into consideration the financial, social and environmental impacts of their choices.

Tompkins Cortland Community College, through a Power Purchase Agreement with Nextera Energy, installed a 2 MW solar farm on TC3 land in 2015, which produces about 90% of the electric energy required by the College's three main buildings.

### **ENERGY AND ECONOMIC DEVELOPMENT TASK FORCE (TCAD)**

The Energy and Economic Development Task Force was created in mid-2015 by TCAD at the request of the Tompkins County Legislature to look for creative solutions to meet the energy needs of Tompkins County's growing economy in the short term, while simultaneously supporting the County's long-term goal of reducing carbon emissions 80% by 2050. The Task Force includes individuals representing business, energy supply, renewable energy advocacy, government, and other interests. A report to the public was delivered in 2016.

### **ENERGY ROADMAP (TC)**

The Tompkins County Energy Roadmap was one of ten local measures identified in the 2020 Energy Strategy to help prepare the community to achieve its stated greenhouse gas emissions goals of 80% reduction in emissions over 2008 levels by 2050. The Roadmap is being developed to help guide activities around energy-related decision making and includes an assessment of the potential of various local renewable energy sources to power the community, as well as the role that energy efficiency and demand management can play in reducing energy demand. The Roadmap puts those assessments into the context of the overall community energy picture today and projected in 2050 to identify scenarios for how both energy demand and greenhouse gas emissions goals can be met.

### **ENERGY SMART COMMUNITIES INITIATIVE (AVANGRID)**

The Smart Energy Community, within Avangrid's New York service territory, will serve as a test-bed for demonstrating and evaluating energy innovation, and will identify how to scale that innovation to a larger population. The project will focus on engaging customers and moving them toward being active participants within the energy ecosystem through energy conservation, energy efficiency and/or self-generation, and participating in programs such as demand response. (Rocky Mountain Institute website 8-3-15). Ithaca and Tompkins County were selected as the site for ESC implementation.

### **ELECTRIC VEHICLE CHARGING STATION FEASIBILITY AND IMPLEMENTATION (TC)**

The Ithaca Tompkins County Transportation Council was awarded a \$91,000 grant in 2015 from the New York State Energy Research and Development Authority (NYSERDA) to “create a strategic plan for charging stations in Tompkins County to support widespread adoption of electric vehicles. The project is to investigate the area to identify a series of criteria that would help with implementation of charging stations for electric vehicles. The grant does not fund any actual charging stations, but rather an analysis of what types of stations would work best, and where they would be located.

### **MUNICIPAL ELECTRIC & GAS ALLIANCE (MEGA)**

The Municipal Electric and Gas Alliance (MEGA) is an aggregator of electricity, natural gas and renewable power. MEGA's primary objective is to achieve the most competitive prices for electricity and natural gas for its members to minimize the cost of energy. Established in 2001, MEGA is a Local Development Corporation that serves local governments and affiliated entities by group purchasing of electricity, natural gas and other energy products and services. It serves 30+ county governments and 250+ municipalities, including many school districts. MEGA has been studying the possibility of bringing Community Choice Aggregation (CCA) to municipalities in Tompkins County.

### **NEW YORK INDEPENDENT SYSTEM OPERATOR (NYISO)**

The New York Independent System Operator (NYISO) is at the heart of New York State's electric system, operating the high-voltage transmission network, administering and monitoring the wholesale electricity markets, and planning for the state's energy future. The NYISO is responsible for the reliable operation of New York's nearly 11,000 miles of high-voltage transmission and the dispatch of over 500 electric power generators. In addition, the NYISO administers bulk power markets that trade an average of \$7.5 billion in electricity and related products annually.

### **PUBLIC SERVICE COMMISSION (PSC)**

The primary mission of the New York State Department of Public Service is to ensure affordable, safe, secure, and reliable access to electric, gas, steam, telecommunications, and water services for New York State's residential and business consumers, while protecting the natural environment. The Department also seeks to stimulate effective competitive markets that benefit New York consumers through strategic investments, as well as product and service innovations. Last year, New Yorkers spent a total of \$34.2 billion on utility services, a sizeable figure that includes \$21.9 billion for electricity and \$7.7 billion for natural gas,

In FY13-14 the PSC launched Reforming the Energy Vision (REV), a groundbreaking effort to transform the regulation of New York's electric distribution utilities. Given its focus on implementing fundamental changes on the production, distribution and consumption of energy, it is widely expected that REV will provide a significant boost in innovation in New York State in the years ahead.

The PSC engages in a wide variety of other energy-related projects that include Community Shared Solar, Large Scale Renewables, Standard Interconnection Revision Process, Clean Energy Fund, and Large-Scale Renewables.

### **REFORMING THE ENERGY VISION (PSC)**

"Reforming the Energy Vision" (REV) is a major decision-making process to transform the retail electricity market and overhaul New York's energy efficiency and renewable energy programs. The goal is to create a cleaner, more affordable, more modern and more efficient energy system in New York, through the increased development of distributed energy resources, like rooftop solar, energy efficiency, and battery storage. REV seeks to speed up the transition to energy efficiency and renewables by overhauling the regulations that govern utility companies and designing new energy markets. REV was initiated by New York's Public Service Commission in April, 2014.

### **REPOWERING CAYUGA OPERATING CO. / AES CAYUGA**

Following the 2011 declaration of bankruptcy by AES Cayuga, a group of investors acquired the coal-fired power plant and developed plans to repower it with natural gas. The repowering would require a new gas pipeline from the north. Meanwhile, NYSEG has proposed a new transmission line from the north, which would eliminate the need for the power plant. In February 2016, the PSC ruled that ratepayers would be required to pay for Auburn Transmission upgrades, not repowering the Cayuga Power Plant. Cayuga is free to pursue conversion to gas or other business opportunities that may arise without ratepayer subsidy.

### **RESIDENTIAL ENERGY SCORE PROJECT**

The Residential Energy Score Project (RESP) is a first-of-its kind project that is seeking to create strong market demand for energy efficiency in existing houses and, by extension, to reduce utility costs for homeowners, to increase energy literacy, and to help promote the county's sustainability goals. RESP is a partnership of the Towns of Caroline, Danby, Ulysses, and Ithaca, the City of Ithaca, Tompkins County, and Cornell Cooperative Extension. Project funding is provided by NYSERDA through the Cleaner Greener Communities program. The project aims to create a voluntary program where homeowners could get a home energy score that could be shared with prospective buyers, tenants, or other interested parties. We are developing a local label that will give homeowners and prospective home-buyers information about the energy efficiency of the physical structure of a home, including the heating system, air sealing, and insulation.

### **SOLAR TOMPKINS – SWITCH TO SOLAR AND HEAT SMART PROGRAMS (TC)**

After two years of focus on increasing the deployment of solar PV in the residential sector, Solar Tompkins turned to the promotion of non-fossil fuel alternatives and efficiency measures for home heating and domestic hot water, which, combined, account on average for 75% of the total energy use in Tompkins County homes. The HeatSmart Tompkins campaign aims to accelerate the transition of home-heating away from fossil fuels via deployment of super-efficient air- and ground-source heat pumps in combination with improvement of building efficiency through better insulation and air sealing. The new program launched in September 2015 with enrollment through December 15, 2015, and a contract signing deadline in late January 2016.

### **TOMPKINS COMMUNITY SOLAR INITIATIVE (RENOVUS)**

The Tompkins Community Solar Initiative, a project of Renovus Solar, is a two-part initiative designed to make solar affordable and accessible to everyone in Tompkins County through community bulk pricing and the debut of an unprecedented solar buying option for everyone. For the first time ever, solar will now be accessible to non-home owners and homeowners with non-viable solar sites.

**TOMPKINS COUNTY CLIMATE PROTECTION INITIATIVE (TCCPI)**

TCCPI is a climate action and clean energy coalition in the Ithaca, NY area made up of community leaders from the education, business, local government, nonprofit, and youth sectors. TCCPI meets monthly and provides a forum for leaders to discuss activities related to energy, reduction of greenhouse gas emissions, and energy conservation. (TCCPI website, 8-3-15)

**TOMPKINS COUNTY COMMERCIAL ENERGY-EFFICIENCY COLLABORATIVE**

Co-sponsored by Cornell Cooperative Extension of Tompkins County, Get Your GreenBack Tompkins, Taitem Engineering, and the Tompkins County Chamber of Commerce, participants are guided by professionals from Taitem Engineering through an Energy Audit of their buildings, and receive personalized help to figure out what improvements make sense and how to accomplish them. Participants learn about existing incentives and financing options for a wide range of energy improvements, including: air sealing and insulation, equipment upgrades, LED lighting, and solar energy, wood pellets, and other renewables.

**WEST DRYDEN ROAD GAS DISTRIBUTION PIPELINE (NYSEG)**

Citing capacity issues in the northeast quadrant of the county, particularly on cold days, NYSEG has proposed a seven-mile-long, 10-inch-diameter, medium-pressure gas distribution pipeline to bolster pressure, primarily in the Town of Lansing north of NYS Rt. 13. The project has been highly controversial because of claims that further investment in fossil fuel infrastructure will not help Tompkins County meet its GHG emission reduction goals. NYSEG has imposed a moratorium on new gas services in the area and is considering a moratorium on new hookups in the City of Ithaca as well, citing the increased challenge of maintaining reliable and adequate gas pressure for existing customers.

## **Appendix D**

### **Field Visits to Energy-Related Facilities by Task Force Members**

Task Force members visited several facilities to learn about the physical infrastructure involved.

#### **Tour of a private net-zero residence**

(Charlie Trautmann)

The tour was of a new, private home which had been designed to be net-zero on GHG emissions. Features included a rooftop solar PV array, air-source heat pump, 14-inch-thick walls, carefully designed windows, all-LED lighting, and an air-air heat exchanger for ventilation during the winter.

#### **Tour of Franziska Racker Centers**

(Bert Bland and Charlie Trautmann)

The group toured the building to observe the air-source heat-pump system that has been in use for the past several years. The system functions well, although on extremely cold days, auxiliary electric resistance heating is required.

#### **Tour of New York Independent System Operator (NYISO)**

(seven members of the Task Force)

The group toured the NYISO facility and met with 2 staff members for several hours to discuss the statewide electric energy grid, see the “big board” display of all sources of power, distribution lines, and substations, and discuss issues of supply, demand, and reliability.

## Appendix E

### Statement on Behalf of the Task Force to the Public Service Commission

(Written and delivered by Charlie Trautmann on behalf of the Task Force)

#### Statement for the Public Service Commission Hearing on Reforming the Energy Vision (REV)

Binghamton, NY, November 17, 2015

by the Tompkins County Energy & Economic Development Task Force

*A Task Force of the Tompkins County Legislature and Tompkins County Area Development*

I am Charlie Trautmann, from Ithaca, and I am providing the following statement as Chair of the Tompkins County Energy & Economic Development Task Force.

To address the need for clean energy that reduces greenhouse gas emissions, while simultaneously promoting economic development, the Tompkins County Legislature and Tompkins County Area Development, its economic development agency, created the “Energy and Economic Development” task force in June 2015.

The task force includes 21 individuals with diverse expertise including renewable energy, business, real estate development, economic planning, county legislators, builders, academics, contractors, and non-profit leaders.

We are charged with recommending local actions that Tompkins County can take in the coming 3-5 years to advance our greenhouse gas emission reduction goals while also supporting economic development and the growth of employment.

In our work, we are focusing on 4 key drivers affecting greenhouse gas emissions:

- buildings,
- transportation,
- renewable energy sources, and
- energy supply infrastructure

As a regional community, we are convinced that we cannot significantly reduce greenhouse gas emissions without a massive shift to:

1. electric vehicles for transportation,
2. heat pumps for buildings,
3. widespread installation of distributed renewable energy resources, including both generation and storage

This shift requires increased capacity, greater intelligence, and streamlined interconnections associated with our electric grid. Communication and partnerships between utilities and non-utility entities will be critical.

Whatever the PSC can do to facilitate communication and partnerships, and promote streamlined processes, will go a long way toward helping us to reduce greenhouse gas emissions in a way that grows our local economy.

The key issues for us include:

- Obtaining basic energy demand data for planning,
- Keeping up with the rapidly evolving energy landscape, such as accommodating new loads in new locations,
- Facilitating affordable and timely interconnections to the grid.

Not having clear and firm guidelines around creating interconnections and serving new developments has already cost the citizens of our county in lost jobs, lost business and the construction of tens of megawatts of local, shovel-ready, renewable energy generation projects.

We believe it is the role of the Public Service Commission to ensure that the frameworks are in place to spur and guide the transition to a new energy future, and to help the large utility players quickly become more flexible and nimble in addressing this new future.

We therefore urge the Public Service Commission to accelerate its work on a new financial model for New York State utilities to advance the rapid replacement of fossil fuels with clean electric energy through three key strategies:

1. Promote sharing of planning data among utility and non-utility planners
2. Increase the capacity and intelligence of the electric grid
3. Streamline the processes for interconnecting renewable energy resources to the grid

## Appendix F

### Complete Listing of All Potential Task Force Recommendations

#### Increase public awareness, civic engagement, and support for reducing energy use and

##### A. GHG

- 1 Engage stakeholders in solutions
- 2 Offer a community education program to get large numbers on board with our energy strategy.
- 3 Educate the community on all facets of energy, including relationship of energy to economic development, supply and demand issues, NIMBYism, and landlord-tenant energy issues.
- 4 Promote equity of energy solutions - all parts of county, all income levels.
- 5 Semi-annually convene stakeholders to evaluate progress, opportunities and barriers to achieving these recommendations, with a particular focus on whether the positive and negative impacts of the energy transition are being distributed equitably throughout the community.
- 6 Create a group to continue to meet periodically to work on these complex issues of energy and economy.
- 7 Develop a consistent message and approach to emissions reduction and share it with all employers and community leaders to have a clear community message.
- 8 Consider and recommend what NOT to do in the next 3-5 years as well as what to do because ignoring that building to use methane and to expand local methane infrastructure commits us to 50 more years of the emissions thus generated and this will defeat the County GHG goals.
- 9 Consider how any of these recommendations could be modified to improve equitable access to funds and programs and not negatively impact any group as the result of this work.
- 10 Expand the housing strategy so that it addresses housing needs, zoning needs and codes for energy efficiency.
- 11 Continue to support campaigns like Solar Tompkins for solar, possibly wind, heating with wood and wood pellets for both homes and commercial buildings.
- 12 County could be a leader in adopting heat pumps and sharing results publicly.
- 13 Support TCPD/TCAD's Energy Focus Areas Study to inform energy planning and apply study results to address concerns.

##### B. Measure building-level energy use, monitor it, and share data

- 1 Develop a building-energy rating system and apply it when considering incentives to businesses
- 2 Work with the City of Ithaca and perhaps other municipalities to include energy analysis (audits or rating) in its occupancy permit, certificate of compliance, or other inspection program to influence landlords and tenants. Perhaps start with owners of duplexes.
- 3 Request or require building owners to get energy ratings and share those ratings publicly.
- 4 Encourage municipalities to adopt a commercial energy benchmarking and disclosure ordinance for commercial buildings over a certain square footage in size.
- 5 Incentivize or mandate that commercial building owners report on heating/cooling costs on a consistent scale - such as annual cost in \$/SF and total cost.

- 6 Work with local Realtors on better displaying and sharing energy systems information for properties in the MLS system
- 7 Develop contests and public acknowledgement programs to reward businesses who are trying to do the right things (and possibly shame those who are not).
- 8 Support the creation of the Ithaca 2030 District with targets for existing and new commercial buildings and data sharing.
- 9 Make building owners reveal energy costs, so commercial tenants can choose with full information. Consider voluntary disclosures for the first 3 years and then make it mandatory.
- 10 Promote training for local appraisers on how to value energy system improvements, especially in commercial buildings and for items requiring a 20-year payback. Consider piggy-backing this education on existing accreditation programming used to maintain appraisal licenses

**C. Add new resources for training, education, skill-building**

**C-1 Find and fund high-level experts to give advice.**

- 1 Consider adopting policy requiring that any project over about \$2M is automatically sent to a County Energy Guru for review or input.
- 2 Fund and hire a dedicated position ("navigator") to support businesses and developers in doing energy planning and incorporating energy efficient design and renewables into expansion and new construction plans and retrofits of existing buildings. Goal would be to reduce energy costs and help keep businesses here. Elements of program could include onsite visits, database of businesses to track progress, and focus on strategic improvements. Would provide the right information and offer creative solutions while keeping their eye on the long-term goals of emissions reduction and economic prosperity. The position would consult with businesses trying to expand.
- 3 If a business faces an energy issue that is forcing them to look outside the community, the community could pay for a consultant to meet with them and explore options that might overcome the energy problem.
- 4 Hold pre-seed workshops (like what Carla C does) for energy issues, to bring resources together to help researchers begin to see if their idea is viable for commercialization and whether a new company could be developed.

**C-2 Increase job training at all levels of construction.**

- 1 Educate architects, engineers, builders, developers and owners about energy improvements for buildings and the costs associated with those improvements. (Could use the results of the Green Incentives work due in April 2016.)
- 2 Promote training and apprenticeships for people who have barriers to employment, immigrants, and people of color. Taitem's diversity apprenticeship and GIACs hospitality training are good existing examples to draw from.
- 3 Develop and promote a TC3 training program in renewables and efficiencies.
- 4 Fund a program to explain/promote heat pumps, super insulation, and other measures to reduce energy needs for buildings. Could use local examples of Eco village, Breckenridge Place, Taitem Engineering and others for hands-on tours and examples.'

- 5 Provide education on heat pumps, especially to business leaders and those potentially moving jobs out of the county.

### **C-3 Educate the public on reducing energy use**

- 1 Continue to hold educational and motivational energy workshop series like the one being carried out by Get Youth GreenBack, Taitem, CCETC and the Chamber of Commerce. Program goes beyond educating in the abstract to focus on how to apply energy technologies to individual lives and buildings.
- 2 Since the landlord/tenant disconnect is an issue for commercial spaces too, provide education to commercial tenants so that they could advocate for building improvements.
- 3 Support people, families and organizations who want to do something to reduce energy use, with system to help them do things; hand-holding, following up, connecting them to resources, etc. An example of where this is working is Guelph, Ontario, where one person visits about 300 homes/year.
- 4 Create a rubric for information on projects that come in for help from TCAD to be able to help with more robust decision making. Identify any non-confidential aspects of the projects that could be shared with other businesses and the public for education and understanding.
- 5 Work to ensure that all the components are in place to step up energy efficiency and renewable work; financing, contractors, education.

### **D. Improve partnerships with NYSEG and solve infrastructure problems**

- 1 Resolve the regulatory issues and utility revenue model issues that impede interconnection of renewable electric generators to the grid.
- 2 Improve communications and cooperation with NYSEG.
- 3 Conduct high level discussions/political advocacy with NYSEG-Avangrid-PSC-Governor's office to accelerate energy planning and interconnection issues.
- 4 Support the Energy Focus Areas work to better understand current traditional infrastructure and needs of next 5-10 years.
- 5 Develop ways to share infrastructure data to help business decision-makers and planning related to the grid and pipeline capacity.
- 6 Engage in community-level energy planning with NYSEG for existing infrastructure, microgrids, and DERs.
- 7 Develop solution to NYSEG's insistence on PV connecting at low-voltage 4.1kV to a 115kV Transmission line. Can be done more economically to a 36.5kV Distribution line.
- 8 Buy out utility and manage our own transmission and distribution system
- 9 Support changes required in the energy infrastructure to allow more renewables to be put onto the grid, while simultaneously reducing the amount of support, maintenance and adding of new infrastructure that supports fossil fuel use.
- 10 West Dryden Road project: work to convince NYSEG to reduce the size of the pipeline and/or depreciate it over 10-15 years so that it does not become a 50 year investment if built.

- 11 Develop a way to build-in consideration of long-term impacts into thinking about short-term decisions on building infrastructure so that there is recognition that if we build infrastructure to bring gas through a pipeline or bring gas to a power station, for example, there are long-term impacts associated with that decision.

**E. Meet energy needs in industrial sector**

- 1 Provide technical assistance to industry to reduce energy demand and resolve energy issues early in expansion process. Bring energy related info and incentive resources to specific industries. Address issues well in advance of starting construction so there is time enough to think through best solutions.
- 2 Work with NYSTAR Centers for Advanced Technology program that supports university-industry collaborative research and technology transfer in commercial relevant technologies.
- 3 Accelerate technology transfer around energy and renewables from gown to town.
- 4 Transfer knowledge from Cornell to industry on how to save energy in industrial processes and labs.
- 5 Consider ways to reduce demand in other geographies or other sectors, as a way to free-up natural gas for industrial processing. For example, one million square feet of clean room uses about 4,000 homes worth of energy. If residential demand could be reduced to transferred to electricity, the industrial need could be met.
- 6 Subsidize clean rooms expansion so they can do them with electric up front so gas/ electric operating differential is not an issue for company expansion.

**F. Reduce demand for energy through efficiency and renewables**

- 1 When infrastructure bottlenecks are identified, develop ways to optimize use if existing supply through deployment of alternative technology, such as heat pumps, and energy efficiency/ demand reduction. We need to recognize that industrial processes require more energy than just heat/cool the building and that maybe natural gas should be directed to industry or other job-preserving businesses by freeing up some of the natural gas used by other sectors, such as residential. This could be done with incentives or other programs.
- 2 Reduce peak demand through economic incentives and smart grid technology.
- 3 Promote the use of smart meters to reduce the need for more energy generation, especially time of day metering.
- 4 Show demand for natural gas by building case histories of companies who have been denied hookups.
- 5 Require utilities to respond to service demand. PSC needs to change how it responds to that demand. Right now utilities must build gas if gas is requested. Need to direct investment to energy efficiency measures and non-gas solutions.
- 6 Look seriously at small hydro plants.

**G. Create more financial incentives and investment resources**

- 1 Pair higher level local energy efficiency requirements with incentives to meet those higher cost investments.

- 2 Study owner financial considerations and look for ways to incentivize life-cycle costing of buildings' capital and operating expenses for energy systems.
- 3 Study owner financial considerations and look for ways to incentivize life-cycle costing of buildings.
- 4 Study and understand what the rules are that make the first mover pay high costs for infrastructure expansion that will benefit other customers in the future. Consider how to support the first mover's project by managing those first mover costs.
- 5 Look at how we can pay for incentives; try to identify value that drives investments.
- 6 Capitalize a loan fund through TCAD that is focused on low-interest loans to developers specifically to do energy improvements to buildings.
- 7 Study whether local solutions exist to address financing constraints, including national Freddie/Fannie requirements that mortgages are on buildings that have central heating plants, and lien order concerns for improvements with a 20 year payback.
- 8 Develop incentives to help building owners to finance "deep" energy retrofits of 50-80%, above and beyond the traditional 20-25% retrofits typically completed.
- 9 Develop a way of valuing business growth for landlords and municipality in order to leverage private and public partners to invest in solutions.
- 10 Address the split incentive piece for commercial rental and low-income housing.
- 11 Since the landlord/tenant disconnect is an issue for commercial spaces too, provide education to commercial spaces too, provide education to commercial tenants so that they could advocate for building improvements.
- 12 Put resources toward reducing energy use (energy efficiency ) in lower income housing.
- 13 Consider Community Choice Aggregation and other approaches to locally influence community-scale energy decisions and possibly create a funding tool for energy-related activities.
- 14 Promote TC Climate Fund (offsets used to reheat/weatherize homes of low-income families.
- 15 Incentivize or require the use of renewable energy in certain (appropriate) types of new construction.
- 16 Create enhanced tax abatements through the IDA to influence energy systems decision-making and make it more affordable for developers to invest in those systems. This may be a challenge because state law governs tax abatements and only some uses can be applied.
- 17 Require applicants for abatements (and building permits?) to at least think about energy technologies and show why they can't use them, if they can't, before being considered for a tax abatement or project approval.
- 18 Consider ways to encourage electric use over gas
- 19 Support local creation of renewables rather than distant companies.

#### **H. Consider Stretch Building Codes, Review and Regulations**

- 1 Encourage municipalities to add a step to their site plan review laws so that they review energy systems in the site plan review process. This should be combined with guidance to municipalities on what to consider when conducting those reviews and sharing case studies and local NYSERDA staff contacts, so that municipalities can share the information with developers.

- 2 Encourage municipalities to adopt stretch building codes to require higher energy efficiency in new construction.
- 3 Advocate for better state-level energy regulations and programs to support commercial and industrial businesses.
- 4 Encourage municipalities to train their staff on implementing the 2016 NYS Energy Code, and to consider adopting stretch energy codes.
- 5 Create local building and upgrade requirements mandating using renewables, heat pumps and other energy efficiency measures.
- 6 Require developers to use renewable energy in certain appropriate types of new construction to qualify for incentives.
- 7 Work with municipalities to adopt policies requiring high energy efficiency retrofits when ownership is transferred for existing commercial multi-unit residential and commercial buildings.

## **I. Reduce Transportation Emissions**

### **I-1 Electric Vehicles**

- 1 Promote and assist businesses in purchasing electric vehicles (EV) and installing EV chargers in parking lots.
- 2 Educate employees about EVs and offer drive-and-ride opportunities to employees.
- 3 Offer incentives to consumers to purchase EVs, or conduct a “Solarize” type program to educate and obtain lower pricing for consumers.
- 4 Promote electric vehicles by making more charging stations available.
- 5 Develop EV infrastructure region-wide to support people driving outside of Tompkins County.
- 6 Consider creating a “Seal the cracks” type of program for EVs in future, with carbon offsets from travel funding local EV purchases.
- 7 Develop pilot program to test other fuel technology locally, including hydrogen cars/buses and EV buses.
- 8 Invest in greener City and business fleet - transportation to EV.
- 9 Fund a position to assist governments and businesses in greening their fleets.
- 10 Develop ways to incentivize EV purchases for consumers

### **I-2 Transit Ideas**

- 1 Encourage businesses to offer transit passes or Ithaca Carshare membership to their employees.
- 2 Work with TCAT to expand transit service geographically and/or frequency, as well as study alternative routes to have the biggest impact on reducing VMT , and consider smaller buses.
- 3 Consider incentives to build and use Park and Ride Lots.
- 4 Coordinate discussions between TCAT and school districts to find solutions to allow for sharing of buses.
- 5 Pilot a Bus-to-Work Day and businesses promote it among employees.
- 6 Expand Gadabout to include rides for youth.

### **I-3 Non-motorized Travel**

- 1 Build a network of infrastructure for cycling in the urban area and throughout the County to create jobs and support local economic development.
- 2 Widen shoulders of roads on the main routes into the City as a way to promote commuter use of shoulders for biking.
- 3 Complete trail connections into the City as a way to promote commuter use of trails.
- 4 Support groups working on developing bike paths and bike lanes, especially in support of employee commuters.
- 5 Encourage businesses to offer showers, lockers, bike racks, and other supportive amenities to encourage employees to bike or walk to work.

### **I-4 Other Transportation Ideas**

- 1 Develop ways to encourage employee commuting by means other than drive alone, including incentives and parking fee structures. Consider specifying/funding staff member responsible for implementing TDM measures.
- 2 Develop bikeshare programs for businesses and/or the community at large.
- 3 Encourage businesses to explore work-from-home and flexible work day options.
- 4 Assist Ithaca Carshare in expanding into the Villages and other Development Focus Areas.
- 5 Encourage municipalities to modify land use laws to support denser communities and more people living near employment, childcare and activities.
- 6 Focus on regional transportation options. Develop an express bus route between Cortland and Ithaca.
- 7 Expand vanpool options, especially in the rural areas.
- 8 Educate businesses and employees about transportation options to share rides, walk, bike, and transition to electric vehicles.
- 9 Promote use of travel offsets where necessary/possible.
- 10 Create incentives for employees to live closer to where they work.
- 11 Offer company carshare for non-car commuters to use during the workday.
- 12 Consider how to make into reality bold moves to break out of a system that is car-centric and keep more of the money spent on transportation circulating in the local economy. An example is doubling the funding for TCAT
- 13 Work with the school districts on bus routes and policies to reduce parents driving alone.

## **Appendix G**

### **Energy and Economic Development Task Force Charge**

Tompkins County  
**Energy and Economic Development Task Force**  
*Forging a Common Approach*  
**May 21, 2015**

#### **Background**

Recently, Tompkins County Area Development (TCAD) and the Tompkins County Planning Department (TCPD) issued a joint statement of principles that recognized the need and opportunity for both economic growth and reductions in carbon emissions. The statement reflects the aspiration of both agencies to harmonize the environmental and economic development objectives contained in the County's Comprehensive Plan and Energy Strategy and TCAD's Economic Development Strategy. (See Attachment 1 for joint statement.)

The TCPD is working with a consultant to create an Energy Roadmap by the end of 2015 for the County. From the initial scope of the project:

The Roadmap will involve analysis and assessments of energy needs, opportunities and resources the Tompkins County community has available to improve efficiency and access renewable energy sources, and identify options to encourage renewable energy deployment and development of community energy projects. (See Attachment 2 for the complete initial scope.)

The Roadmap will support an update of the County's 2020 Energy Strategy during 2016.

There remains, however, a general lack of understanding within the Tompkins County community regarding the feasibility of various energy alternatives and strategies, and the capacity of these alternatives to replace or significantly reduce the reliance on conventional energy sources, at least in the near-term. There is also a lack of understanding regarding the energy needs and challenges faced by businesses and developers in the community.

#### **Purpose**

The Energy and Economic Development Task Force has been created to forge a common understanding of the capacity of specific energy sources, systems, and strategies to meet the energy demands of a growing economy, particularly over the next five years 2016 to 2020. The Task Force will draw upon information and insights gained in the Energy Roadmap process to help guide its assessment of near-term options to sustain both economic growth and progress toward carbon-emission goals. The Task Force may serve as a focus group, providing input to the County's Energy Roadmap project. The Task Force Report will be considered along with input from the public and other stakeholders in developing an update of the County's 2020 Energy Strategy following completion of the Energy Roadmap.

Whereas the Energy Roadmap Steering Committee is made up largely of individuals with particular expertise in the area of energy, the Energy and Economic Development Task Force will include a broad range of stakeholders, representing a variety of perspectives, interests, and areas of expertise, including those who represent the demand-side of the energy equation.

By creating an opportunity for respectful and productive discussions among its members, the Task Force will seek common ground about how to achieve near-term economic development and energy goals. In addition, it may also open the door for a broader community consensus about our energy future.

**Goals:**

- Establish a clear and common understanding of the near- term (next five years) and long-term technical and economic feasibility of various energy sources, systems, and strategies;
- Develop a common understanding of the capacity of these alternatives to meet the energy needs of a growing economy;
- Create methods for effective communication among business owners, developers, clean energy advocates, and municipalities on the topics of economic development and energy.

**Scope, Focus, Boundaries & Givens**

- The Task Force’s primary focus should be on assessing which existing and realistic future energy sources and resources, including demand management (efficiency, conservation, peak shaving, etc.), will best contribute to the balance of supply and demand to meet community needs. The timeframe will be focused on the next five years, while taking into consideration the impact of long-term infrastructure investments required to support those resources.
- The Task Force’s work should occur within the context of the County Comprehensive Plan and its Sustainability principle, including the goals of a 20% reduction in greenhouse gas emissions by 2020 and an 80% reduction by 2050, and the County’s Economic Development Strategy. It should support the County’s vision for environmental preservation, social equity, and economic growth.
- The Task Force should consider a broad range of environmental and financial factors, including energy related to housing, business, education, etc.
- The Task Force should not attempt to solve other major county challenges, such as affordable housing, county-wide transportation, growth of business, etc.
- The Task Force should take into account future advances in energy supply and conservation technologies but in considering the next five years should rely on currently available proven technologies.

**Specific Deliverables:**

- Task Force Report – A brief, widely accepted summary report that provides a realistic economic and technical assessment of energy alternatives available to new development over the next five years. The leadership of the Task Force will take primary responsibility for the report, which is expected to be 10-15 pages long (before appendixes)
- Recommendations regarding economic development policies that could encourage reduced-carbon energy solutions.
- Guidance to developers and businesses regarding economically viable measures that can save energy and reduce emissions.
- A communications strategy to enhance understanding around energy and economic development both in the short-term and in the long-run. This strategy will include

recommendations to developers regarding measures that can save energy, reduce emissions, and lower their costs.

- Target date for draft report and other deliverables: January 29, 2016

#### **Support for the Task Force**

- The Task Force will require an estimated 10 hours per week of administrative support for meeting coordination, background research, and report compilation as well as supplies and materials, mailing, copying, and meeting preparation. TCAD will provide primary administrative and technical support, with Tompkins County assisting with administrative support.
- Travel expenses for subject matter experts invited to present to the Task Force will be covered by Tompkins County upon approval by the County Administrator.

#### **Guidelines for Accomplishing the Work of the Task Force:**

- The Task Force will hold a series of meetings and workshops over the course of 2015 and early 2016.
- Community engagement will be achieved through public input and information sessions, community roundtables and conversations.
- The Task Force should seek consensus among its members on the content of the report.
- The Task Force will encompass a broad diversity of interests within a working group small enough to be effective and manageable (with respect to logistics.)
  - The Task Force will have 14 members plus a voting chairperson who will participate in all elements of the process, including any voting that may occur.
  - The President of TCAD and the County Administrator will serve as non-voting *ex officio* members of the Task Force.
  - Seven members will be sought from the private sector; seven from the public sector or not-for-profit/advocacy community. In assembling the Task Force, care should be given to include members that represent:
    - City, Town and County governments
    - Organizations or individuals with expertise in renewable energy or energy conservation
    - Business and higher education (energy demand)
    - Energy suppliers (gas, oil, coal, solar, wind, etc.)
- The Task Force will take a triple-bottom-line approach to its work and take environmental, social, and economic considerations into account, as appropriate.

#### **Broad Phases of the Task Force's Work:**

- Recruit task force members
- Hold kick-off meeting to bond group, discuss charter, timeline, assignments
- Review research, particularly from the Energy Roadmap group, on:

- Tompkins County's energy status, including current and future demand
- Current energy options
- Promising energy technologies
- Hold regular Task Force Meetings
- Hold public input and information sessions
- Hold sub-committee meetings, if needed
- Draft preliminary report—including discussion, iteration
- Prepare semi-final report—for wider distribution, discussion
- Finalize report—including presentation and posting

**Roles of Key Players:**

- Chair – chairs meetings, responsible for overall progress toward goals
- Vice-Chair – chairs meetings when chair is unavailable
- Executive Committee – frames issues and prepares meeting agendas; does not conduct the business of the Task Force
- Task Force – decides on final deliverable, by consensus if possible
- Experts and Public – provides input to the Task Force related to the county's energy future. This group includes representatives of the Energy Roadmap project.

**ATTACHMENT 1**

**County Planning, TCAD Pledge Collaborative Approach on  
Energy and Economic Development**

Press release December 2014

Monday, December 8, 2014

Addressing the community's energy needs while reducing greenhouse gas emissions poses an immense challenge that demands immediate action, and developing a vibrant local economy that provides more good jobs is a top priority of County government.

*Tompkins County Area Development*, the County's designated economic development agency, and the *Tompkins County Planning Department*, which provides analysis and planning to address community energy and greenhouse gas emissions, today announced an agreement to collaborate on addressing long-term and immediate energy needs and emissions in ways that contribute to a vital local economy. This collaboration will include bringing a broad variety of voices to the discussion of community goals and strategies, as well as tangible steps to meet both energy and economic development goals.

"We hope this collaboration can provide resources to support business decisions that take into account the current and future energy and climate environment," said Tompkins County Commissioner of Planning Ed Marx. "We want to help businesses identify cost-effective solutions that meet their energy needs, allow them to grow and, at the same time, contribute to community greenhouse gas reduction goals."

"A movement toward more sustainable energy infrastructure and economic development and job creation are not mutually exclusive goals," noted Michael Stamm, president of Tompkins County Area Development (TCAD). "Tompkins County has a long and enviable history of stimulating private sector investment and creating employment opportunities while enhancing the quality of life we all cherish so deeply. TCAD is committed to working with the leadership of the County to create and implement sustainable energy solutions that also meet the energy needs of our customers."

While both organizations believe that overall goals for strengthening the local economy and reaching energy and greenhouse gas emissions targets are compatible and can be mutually reinforcing, they also recognize that there may be specific instances where they come into conflict. In such cases, the County Planning Department's Energy Fund and the Tompkins County Industrial Development Agency's Tax Incentive tools will be employed in an attempt to find a mutual-gains solution to the perceived conflict. They also acknowledge that, in instances where no clear mutually beneficial solution can be identified, the attempt to meet both goals will need to be weighed in making a decision.

Meeting long-term and intermediate targets

Near- to long-term energy planning will be addressed primarily through two initiatives:

*Energy Roadmap*. This project, being developed by the County Planning Department, will consider alternative energy scenarios that would allow the community to achieve an 80% reduction in greenhouse gas emissions by 2050, with interim goals to indicate meaningful progress. TCAD will be an active participant in the process and work to bring important voices from the business community to the discussion.

*Energy Focus Areas.* For those areas of Tompkins County critical to the county's economic success—such as downtown Ithaca, the business parks and industrial sites near Ithaca Tompkins Regional Airport, and Ithaca's East and South Hills—TCAD and Tompkins County Planning will attempt to engage NYSEG, the Municipal Electric and Gas Alliance (MEGA), funders at NYSERDA, and other potential partners to evaluate energy infrastructure and devise long-term plans to meet current and future commercial, industrial and residential energy needs while reducing GHG emissions.

Approach regarding specific projects

Regarding more immediate issues, especially those relating to specific economic development opportunities, the following tools will be employed:

*Energy Fund.* \$20,000 to support collaborative efforts to meet energy and greenhouse gas reduction goals is allocated by the County Legislature as part of the Planning Department's 2015 budget. The Planning Department will work with TCAD to make a portion of this funding available to help businesses considering expansions and residential developers proposing new projects evaluate efficiency and renewable energy options to reduce their carbon footprint while supplying the energy needed for their business operations.

*IDA Incentives.* TCAD, which provides staff support to the County's Industrial Development Agency, will work with the IDA and Planning Department to structure an incentive program for businesses that reduce their carbon footprint as part of a job-creating expansion.

*Broadening Awareness.* TCAD and the Planning Department agree to institutionalize consideration of economic and energy impacts throughout their work, including individual project review and technical and financial assistance efforts—in part, making businesses and developers aware of available community resources and encouraging them to consider energy options as they pursue economic development projects.

“One of the greatest challenges of our time is how we can foster economic growth and also make meaningful reductions to our carbon footprint,” stated Michael Lane, Chair of the Tompkins County Legislature. “The work being done by the County and TCAD is helping to chart that path, for Tompkins County and beyond.”

TCAD and the County Planning Department agree that discourse in the community around the topics of economic development, energy, and greenhouse gas emissions must be based on clear and accurate information and occur in a civil and respectful manner. Both organizations are committed to work together to provide community leadership in setting such a tone.

**ATTACHMENT 2**

**SPRING 2014**

***Summary of Goals and Key Outputs  
Tompkins County Energy Roadmap***

**Project Background**

In 2010, the Tompkins County Legislature endorsed the Tompkins County 2020 Energy Strategy to help put the community on track to achieve its greenhouse gas emissions reduction goals of 80% reduction from 2008 levels by 2050. One of the ten key actions identified in the Strategy was to develop an energy roadmap for the community to provide a more detailed understanding of the energy demand and supply to determine the most effective and efficient means of simultaneously meeting the community's long-term energy and greenhouse gas reduction goals.

Specific objectives stated for the study are to:

1. Provide an overview of the energy demand situation and the present energy supply structure in the County;
2. Investigate and quantify the energy production potential of renewable energy supply resources in Tompkins County;
3. Identify the primary stakeholders in the present and future energy demand and supply;
4. Develop and analyze scenarios for the future energy demand and supply structures which fulfill the goals for an efficient energy future;
5. Develop evaluation criteria by which to select a preferred energy demand and supply structure to guide energy-related decisions in the future and identify a preferred scenario;
6. Identify those specific changes that will need to occur in the supply and demand for energy to meet the preferred scenario;
7. Specify actions we need to take (or avoid) in the next ten years to make those changes possible; and
8. Identify ramifications of those changes that need to be recognized and addressed.

The Tompkins County Energy Roadmap will focus on those components where local and regional governments play a large role in optimizing the energy mix. The Roadmap will involve analysis and assessments of energy needs, opportunities and resources the Tompkins County community has available to improve efficiency and access renewable energy sources, and identify options to encourage renewable energy deployment and development of community energy projects. It will also include informed assumptions about the impacts of State and Federal energy policy and programs in helping Tompkins County reach its goals. Understanding our community energy picture will help Tompkins County better prepare for the infrastructure necessary to support current and future economic vitality and quality of life.

The Tompkins County Planning Department engaged the services of 6 graduate students at Cornell University during the academic years of 2011-2012 and 2012-2013 to study the energy picture in the County. These students, supervised by faculty of Cornell, researched and quantified renewable energy

resources in six separate reports, hereafter called “Student Reports”. Copies of those reports may be found on <http://tompkinscountyny.gov/planning/energy-climate>

### **Project Objectives**

In addition to the specific objectives identified above, the overarching objectives of the Tompkins County Energy Roadmap are to:

- Provide an aspirational vision of the roles renewable energy sources, energy efficiency, and deployment of existing technologies could reasonably play in Tompkins County’s energy future by 2020 and by 2050;
- Provide a practical plan for how to achieve that aspirational goal;
- Prepare a final report that is compelling to political leaders, funders, energy practitioners, and the general public;

### **Project Outputs**

The Energy Roadmap will be composed of four parts:

- Part 1 will be the technical analysis of the current and projected energy demand and an assessment of energy resources available
- Part 2 will be information on how energy efficiency will play a role in the future energy demand
- Part 3 will lay-out three to five scenarios for the future energy mix in Tompkins County and pros and cons of each scenario
- Part 4 will identify the preferred scenario and steps the community will need to take in the next 10 to 20 years to achieve that scenario.

The Final Energy Roadmap will be prepared in a style and format that is readable by political leaders, funders, energy practitioners, and the general public that covers the previously outlined items.

## Appendix H

### Written Public Comments Received on the May 4, 2016 Draft Final Report

#### Comment 1

May 27, 2016

To: Tompkins County Energy and Economic Development Task Force

I would like to thank the Task Force for its hard work and for its extremely valuable report. I appreciate your vision and dedication to sound and sustainable economic development in Tompkins County. I attended the public session at the Science Center and would like to follow up my comments there in writing.

First, I want to make clear my strong opposition to a pipeline along West Dryden Road. This pipeline would be unfair to the residents on the road, as was so eloquently explained by Ms. Linda Parks at the hearing. Furthermore, important scientific conclusions presented to County government by Dr. Robert Howarth should point us away from such a development: “We must reduce natural gas use in the County by a large amount if we are to meet the County's goals for total greenhouse gas emissions. There is no room for expanded use of natural gas at all, and development needs to be based on other approaches to energy” – namely wind, water and solar. See <https://drive.google.com/file/d/0B3-IdelJnsBZcFpPZDjjUFhwdEI1S2ZHcElxS2ZuYzB0emgw/view?pref=2&pli=1> Thus, there is no room for any new pipelines.

I was alarmed to hear at the public session from Dr. Anthony Ingraffea that he had offered to help NYSEG make technically proficient measurements of the gas that is leaking from their current pipelines. It seems completely reasonable for the County to require NYSEG to accept his assistance. To clarify the opportunity he offered and the recommendations Dr. Ingraffea is making, I would insist the Task Force call him in to provide further testimony.

I also ask that you change the County's goal for GHG emissions reduction to 100% from 2008 levels by 2050, not just 80%, and aim for a deadline of 2035, not 2050. Thus, since I believe that our emission goals should be strengthened, I will assert that a costly gas pipeline will certainly take us in the wrong direction.

I am pleased to hear that the Task Force wants to talk with the Public Service Commission to discuss alternatives that could lead the State in a new direction. This strikes me as the kind of “out of the box” thinking that is fitting for Tompkins County.

Nevertheless, I was disheartened by the statement that you will only ask the PSC to pursue alternatives “if early discussions identify realistic alternatives that are a) economically viable, b) can be implemented with existing technology, and c) meet the energy demands of the high tech industries located along Warren Road in the Northeast sector of the County.” That statement is vague and so open to interpretation that it should be *completely rewritten*. What is realistic to responsible climate science is that no pipeline should be built. What utility companies and the fossil fuel industry consider realistic is not to threaten their traditional profit margins.

Instead our policy should clearly *mandate* use of renewable energy. The technology is available. While it might seem to make sense to build things with standard fossil fuel technologies, the reality is that things are going to have to change – most of those changes within the next 20 years. Today’s “high-efficiency gas furnace” will be tomorrow’s stranded asset.

As the report correctly notes, it is more cost effective to build for energy efficient technologies from the start, rather than retrofit later on. To avoid hasty conclusions that could lead the County to take the more traditional fossil fuel route, any calculations should take the cost of retrofitting into account as well as the fact that gas prices are sure to rise.

I will concede that for now, especially with costs of gas temporarily so low, some operational costs may be expensive when not using natural gas. When that is the case, the County should find ways to support the cost differential of development without gas by providing tax abatements or other support. But there should NOT compromise on allowing new gas. We simply cannot add more gas to the system—we must reduce, and we must begin now!

I urge the County and Cornell and developers to work together to make the Business and Technology Park a showcase for new energy technologies rather than clinging to old technologies that will soon be obsolete. Let’s seize this opportunity to lead the State in sustainable development - a direction that is sure to have its own economic rewards!

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## **Comment 2**

Over the course of the past week or so, I have had three governmental reports to read and prepare comments about. Two were released by the New York State Public Service Commission. They are the Order Adopting a Ratemaking and Utility Revenue Model Policy Framework and Order Adopting Low Income Program Modifications and Directing Utility Filings. The third was the Tompkins County Energy and Economic Development Task Force Draft Final Report. Reading the locally produced report in the context of the reports produced by the Public Service Commission informs the comments offered here on the Task Force report. The file name of that report—“Pipeline TCAD En Ec Devel DRAFT Report” makes much more clear than the official title what this effort was all about: coming to some sort of consensus about the need for, or the need to prevent, the West Dryden Pipeline.

Initially, it was pointed out by citizens opposed to the pipeline that the support of the County’s economic development apparatus for the pipeline development was in contradiction to the County’s stated greenhouse gas emission goals. This led to an effort to, through the appointment of a task force, harmonize those goals somehow. The task force, appointed by the Chair of the Tompkins County Legislature, worked for a very long time, almost exclusively in meetings closed to the public. The report characterizes it as follows:

“Over the past year, this 19-person task force, chaired by Sciencenter Executive Director Charlie Trautmann, and made up of a balanced mix of individuals with expertise in renewable and traditional energy resources, business operation, real estate development and other aspects of the community has been meeting to develop this report and recommendations.”

The appointed panel was, in fact, not at all “balanced.” It certainly did not exhibit racial or socioeconomic balance, and might easily be characterized as made up of the same “community

leaders” that make decisions on many other matters in other contexts. There were hopes, however, that by encouraging learning and dialogue among this group, and giving more education and publicly-funded staff support to these same leaders in a different task force configuration, new answers would emerge that would somehow bridge the “jobs vs. environment” dichotomy. In Tompkins County. Particularly in relation to the West Dryden Pipeline and our natural gas infrastructure.

However, as Bill McKibben argued so eloquently in his book, *The End of Nature*, we are entering an era in which it is simply not possible to think effectively of any areas as isolated. “Think globally, act locally” is more than just a bumper sticker; it is a discipline or practice that encourages us to see ourselves as a small part of a much larger interconnected system before we act in our day-to-day lives, recognizing that our actions can and will have consequences, both intended and unintended, that reach far beyond our local area. And, that is as true for economic consequences as it is for environmental ones. However, for governments and their agencies, the presence of borders that limit the reach of their official actions can lead to a very keen awareness of those borders, and a tendency to conceptualize and plan in a way that can become very rigidly self-referential and inward-turning in its isolation of the place (a County for instance) as the unit of analysis. This can be very distorting, especially in an essentially rural place with an economy that is highly dependent on larger population centers in the surrounding region.

The Task Force report has that analytical problem, leading to many problems with the recommendations. There is a persistent scale problem—suggestions that issues that should appropriately be dealt with and solved at a larger scale be, instead, tackled as “models” or “pilot projects” just here. For instance, as regards the gas infrastructure, this recommendation: “Ask the Public Service Commission and other agencies for permission and support in **establishing a model process in Tompkins County**, in cooperation with NYSEG, to reduce both peak and sustained gas usage through weatherization, industrial process design, conservation, conversion to electric heat pump, and other measures on an ongoing, sustainable basis.”

Or, this one:

Work with **our unique local resources, including Cornell University, the Atkinson Center, local industry and NYSERDA** to develop research projects and alternative non-fossil fuel technologies to address the energy needs of industry, as well as to share best practices.

Of course, while NYSERDA has, in fact, provided grant funding for a number of local public and private projects, from renewable energy installations for municipalities, to research on mid-scale wind turbines for a local company, to energy efficiency education program staffing for a publicly-funded nonprofit, they are hardly a “unique local resource.” And, our “local industry,” while quite robust, is not really “unique.” NYSERDA, a statewide governmental agency with offices in Albany, New York City and Buffalo, appropriately encourages everyone to “share best practices,” both in terms of *learning* from other locations, as well as teaching them. Even the one arguably “unique” resource mentioned—Cornell University (which includes its Atkinson Center) understands that to advance knowledge, you need to be prepared to learn from others. A lot, and on a continual basis.

The “ten square miles surrounded by reality” bumper sticker is, unfortunately, also not just a bumper sticker, but also a practice. Arguably, the same people dialogue together a bit too much in this little County, and that is exacerbated when the public is prevented from seeing what takes place in official conglomerations of “leaders.” Comfortable assumptions can be reinforced, rather than challenged, such as:

“The Task Force hopes that Tompkins County, by implementing its recommendations, will remain at the leading edge of change and become a beacon of hope and inspiration for those who also seek to reduce greenhouse gas emissions while growing the economy that provides a key element of their quality of life.”

To make the kind of energy transition that we need, if we are to succeed in reversing global climate change, we can't keep casting ourselves as righteous leaders, special and different, the vanguard that acts as a beacon. That is a conceit. The kind of unattractive conceit that can become a bad habit in a place that is, genuinely, far smarter than average, full of admittedly big fish swimming together in one very rural small pond. We need to, rather, apply ourselves and our talents, skills, resources and, yes, even our ample publicly-funded staff time, to being on the team and doing what works to bring everyone along. Often, that will involve helping to solve problems at the scale that they are best solved, not at the scale that brings the most attention to ourselves, or the most glory to our local elected representatives.

Which brings me to the REV and the changes being accomplished in bringing a new approach to energy markets and market-making (economic development)—the terrain of the more substantive reports out of Albany I have been reading this week. New York State's PSC is working to change the investor-owned utilities' incentive structure and business models, through the rate-making process, which will, in turn, change the dynamics of how problems like the proposed West Dryden Pipeline are handled across the state. If NYSEG, through the PSC ratemaking process, can make more money by helping shave peak demand for gas, rather than providing more, they will find a way to do that. If building tradespeople, engineers and contractors can find more work installing ground source heat pumps than gas lines, they will find a way to do that. If homeowners can save more money by running an electric clothes dryer on electricity at off-peak times than running a gas dryer, they will find a way to do that. We bring about the kind of widespread change we need not by setting a hyper-local bar too high for ordinary working people to afford, and then lecturing them about how, if they were as green and as committed as the elite is, they would, against all mathematical calculations performable on their money supply, somehow meet it, but, rather, by incentivizing the behavior through market shaping at a practical scale. New York State is in the midst of doing that, and desperately needs all hands on deck to pull it off. The PSC seems to genuinely welcome public and private business comments, especially if they include new ideas.

The technologies we need in order to effect a just transition to renewable energy are no longer boutique products in their design infancy. They are far past the test-bed stage. Much of the work to be done now is about economic and industrial development, along with state-level regulatory change and market shaping. The Task Force report is disappointing in that it does not tackle the kind of industrial and economic development we need to transform the larger economy at all—while the PSC reports, which do, are sweeping, visionary and inspirational (if, admittedly, dense, long and technical). The Task Force aims to micro-manage planning the energy and economy of the County, reducing the scale yet further to “focus areas.” But, neither energy nor economic planning are very effective at even the whole-county scale of about 100,000 people. That scale was chosen for political reasons, because it corresponds to the scope of authority of the County Legislature. However, the County Legislature has really very few policy levers to apply to energy issues—hence the perpetual tendency to drain the NYSERDA grant pool into endless County-sponsored demonstration projects that have limited impact. And, the part-time legislators may not have the depth of knowledge required to effectively manage energy planning projects, and they certainly do not have policy tools to enact solutions.

That County access to lots of NYSERDA grant funds for public-sector demonstration projects is slated to be drawing to a close. This may be a very good time to re-evaluate the way in which we use the wealth of human intelligence in this County, much of it very committed to volunteer service to help develop the economy and protect the environment. What if we focused energy on solving energy problems at scale, now, and applied our intellectual resources to the teams working at scale? It is not just one pipeline that is a bad solution to our energy development problems. Insofar as we “act,” or enact, fine, keep your vision confined to your backyard. But, it is incumbent on intellectually gifted people, when engaged in *thinking* to solve problems, to attend to a wider horizon.

The next time we devote taxpayer money for staff, and 19 smart peoples’ time, to a Task Force on Energy and Economic Development, how about, rather than creating a hot-house microcosm version of how we could do it better than Albany, we look for ways that we can join with others across the region and the state, in the larger population centers near us where over 50% of the children live in poverty? The age of the public energy demonstration project is drawing to a close... let’s find the new focus in applying energy democracy outside the confines of our special little County. And, encourage private entrepreneurship here that can help to implement the energy transition in the region, while making many, many new jobs for the people who live here.

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**Comment 3**

As a West Dryden Road resident I want to thank the committee for your work. I am encouraged by many of the ideas that have been put forward, and I think they could go a long way toward helping our situation. But I am disappointed that the report does not say anything about the economic impact to residents along West Dryden Road and does not clearly state that there will be no new pipeline.

Why does everyone care so much about protecting Cornell’s Business and Technology Park and no one is protecting the 54 West Dryden Road residents who don’t want this pipeline? Not all the residents who signed the easement want this pipeline. People felt they had no choice, that they could not stand up to NYSEG.

As your report correctly points out, there are alternatives to using natural gas at the technology park. There are no alternatives for me if that pipeline goes through. I will forever lose the trees in my front yard that block my house from the road. My property value will decline as a result, as will my enjoyment of my home.

The County has set a policy to reduce greenhouse gas emissions. It is clear this pipeline takes us in the wrong direction. The County must stick to its policies and protect its residents. The County should not sacrifice residents along West Dryden Road for the sake of a business owner’s return on investment. Please pursue the alternatives identified in this report and do not allow the West Dryden Road pipeline.

Thank you,

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**Comment 4**

To Mr. Charles Trautmann, Chair, and Members of the Energy and Economic Task Force:

I thank the members of the Task Force and those supporting it for the time, energy, and thought which they devoted to this complicated task. Although I believe that the time for commenting on the draft Report is too short—30-45 days would have been more appropriate given the complexity and the importance of the topics addressed--I have chosen not to comment further on the process. Similarly, beyond my comments on the Recommendations, I have confined myself to noting for this record that the text box titled, "West Dryden Road Pipeline," (hereafter the "Pipe") reads as a one-sided, NYSEG-biased view.

I. Comments on Recommendations 1a, b, and c: "Developing a pilot program with the Public Service Commission, the Department of Public Services, and NYSEG to reduce natural gas use and identify alternatives to the West Dryden Pipeline...":

The approaches in "a," "b," and "c" are generally consistent with the collective will of our County's citizens which have been expressed in the County's Legislature's natural gas and greenhouse gas emission reduction goals and are consistent with the collective will of the citizens of the several municipalities which have adopted plans or policies with the same intent. Moreover, seeking this collaborative approach is an innovative and positive approach to the joint challenges of securing energy while vindicating our collective desire for a sustainable, reduced carbon future.

This Recommendation and its constituent parts can be improved in the following ways:

A. Incorporate the data and conclusions of Tony Ingraffea, Bob Howarth, and Ed Marx regarding the emissions and impact of the Pipe and Use them in the Report and to Improve the Draft Recommendations:

Dr. Tony Ingraffea, Cornell professor emeritus, is a world renowned expert on fossil fuel pipes and their emissions. He shared his data and conclusions on the advisability of installing the Pipe with the Public Service Commission in March. He noted that we cannot meet our County Legislature's goals for greenhouse gas emission reduction if the Pipe is operated at half or full capacity.<sup>1</sup> He offered to present these findings and additional data regarding the leaks<sup>2</sup> in the Ithaca area gas distribution system to the Task Force, but I understand his offer was not accepted.

Dr. Robert Howarth is one of the world's best known and most knowledgeable experts on methane emissions and their consequences including the methane emissions from fracked natural gas. Because of this, he recently served as a Cornell representative to the international conference on climate change, "COP21." As he has reported since his return, there was general agreement in Paris that the use of natural gas had to be reversed and immediately.

Dr. Howarth also has compiled data and conclusions regarding the impact of the Pipe on greenhouse gas emissions in the County. He shared his thinking with the Public Service Commission in March. He, too, recommended against its installation and operation. Among the reasons he gave were:

- "Energy conservation and use of renewable-sourced, modern high efficiency heat pumps

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<sup>1</sup> See copies of "Case 15-G-0284 (NYSEG gas rates) Impact of CO2 Emissions from Proposed Pipeline along West Dryden Road March 23, 2016, Renee Santoro, Program Director, Environment, Anthony R. Ingraffea, Founding and Past President" and covering email submitted to the Public Service Commission attached as Exhibit A.

<sup>2</sup> See "A Brief Narrative for the Presentation entitled 'Assessing Ithaca's Methane Emissions from Its Natural Gas Pipeline Distribution System and Point Sources, January 13, 2016'" attached as Exhibit A-2 and attached to cover email sent to [info@tcad.org](mailto:info@tcad.org), and the emails of Katie Borgella, and Martha Armstrong.

can meet the heating and cooling needs associated with development in the Tompkins County area and “shave” the claimed need for additional pressure in the area's gas pipe network;

- The additional 700,000 cubic feet of gas per hour which the pipe potentially can carry will enable more burning of methane, which will increase energy consumption and greenhouse gas emissions while slowing the necessary conversion to renewable sources of energy ALL of which are contrary to the goals of the PSC and Governor Cuomo as announced in [their] "Reforming Energy Vision" (REV).
- This increased burning of methane is contrary to Governor Cuomo's commitment to lower greenhouse gas emissions by 80% by 2050 made when he signed the "Under 2 Memorandum of Understanding" last year [2015].
- Based on estimates made by me [sic] and my colleague Cornell Professor emeritus Tony Ingraffea, this increased burning of methane will prevent Tompkins County from meeting its goal for decreasing greenhouse gas emissions 80% by 2050.”<sup>3</sup>

Dr. Howarth has recently updated his data and the 2008 County inventory relied upon by County Planning staff in advising the Task Force (and in preparing its recently approved “Energy Road Map”). He very recently shared this information with the members of the County planning staff and the Executive Committee of the Task Force (not the full Task Force). I understand that the presentation to the Executive Committee took place after this draft Report was prepared.

The new data affirms but adds additional urgency to the conclusion reached by both Drs. Ingraffea and Howarth--that the County must dramatically reduce its natural gas use and that there is “no room” for expanded use of natural gas including the West Dryden Road Pipeline.<sup>4</sup> This echoes the warnings of climate scientists across the world calling for far more drastic fossil fuel cuts than proposed in Paris.<sup>5</sup>

As early as October 2014, County Commissioner of Planning Ed Marx wrote to the Legislature regarding the Pipe,

“There is a current proposal by NYSEG to increase natural gas capacity in the County by constructing a 10inch pipeline running from a major transmission line in Freeville along West Dryden Road to Warren Road in the Town of Lansing. The stated purpose of this pipeline is to provide capacity to support business expansion and new residential development in this area. From what I understand the supply constraint is currently local in nature but the proposed pipeline would provide capacity to allow expansion of natural gas use throughout the urbanized area of the County and beyond well into the future. As we work to achieve the County's stated goal of an 80% reduction in greenhouse gas (GHG) emissions by 2050 and a 20% reduction from 2008 levels by 2020 it is becoming increasingly clear that we cannot achieve that goal if we continue to increase fossil fuel use in the County, including use of natural gas. [Footnote omitted.]”<sup>6</sup>

None of these data or any of the conclusions of these highly competent and highly regarded persons is part of the draft Report. None of the data and none of the conclusions have been

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<sup>3</sup>A copy of “Comments to the PSC and Secretary Kathleen Burgess re Case no. 15-G-0284 (NYSEG gas rates) prepared for PSC Hearings, Binghamton, March 29, 2016, Robert W. Howarth, Ph.D. is attached as Exhibit B.

<sup>4</sup> See “Methane and the Greenhouse Gas Footprint of Tompkins County: An Update, Robert W. Howarth, Ph.D., May 16, 2016,” a summary of Dr. Howarth's presentation to the Task Force Executive Committee attached as Exhibit C.

<sup>5</sup> See “Fossil fuel use must fall twice as fast as thought to contain global warming-study,” The Guardian, 25 February 2016 attached as Exhibit D

<sup>6</sup> See “Memorandum, October 9, 2014 from Ed Marx to the County Legislature's Planning, Energy and Environmental Quality Committee attached as Exhibit E.

seriously or publicly challenged. These data and the conclusions are so material to any analysis and any strategies recommended by the Task Force that their omission cannot stand.

More specifically, this information establishes precisely why the final Report should NOT include the Task Force's current acquiescence in the installation of the Pipe or the implicit support which it gives to global warming, local pollution, and the goal-defeating consequences the operation of the Pipe. (See page 7 of the draft Report in the third and fourth paragraphs for the support described.)<sup>7</sup>

In short, the absence of this information and the failure to address its implications rob the Report of much of its credibility. Unless the Task Force includes these data and conclusions and uses them to guide its Recommendations, the Report cannot be taken with the seriousness the Task Force apparently intends.

B. Should negotiations with the PSC, NYSEG, et. al. occur, include Dr. Tony Ingraffea, Dr. Robert Howarth, Dr. Brice Smith, and Dr. Xiyue Zhang for their expertise regarding pipelines, emissions, building practices, heat pumps, returns on properly built residential and commercial developments, and energy demand management. Each person is local, knows the issues facing the Task Force, and is of substantial reputation.

C. Should negotiations with the PSC, NYSEG, et. al. occur, include local developers, architects, and engineers with successful, local experience in making tight building envelopes and heat pumps work operationally and economically within the County. Examples include the principals of the Lucente/Fabrioni Village Solaris development, Paul Mazzarella of Breckenridge, Ian Shapiro with his knowledge of Eco-Village buildings and the many building and renovation projects carried out by Taitem Engineering using sustainable practices.

D. In moving to implement any of these Recommendations, the Task Force should advocate for the inclusion of the persons above (or those they recommend) as well as advocates for equitable distribution of the costs and burdens of converting to renewable energy, and advocates for energy and greenhouse gas emission reduction. This will broaden the perspectives represented beyond those of the persons currently on the Task Force.

E. Postpone the Pipe's construction while strategies to reduce local gas demand and, especially, the local peak demand are developed. Because this Pipe is primarily to maintain pressure during 14-30 days of peak demand per year for a specific and isolated portion of the local gas network, because its cost of \$17-million is exorbitant given the nature of the identified problem, and because of the already documented negative environmental impacts it will cause, postponing its construction to develop a better long term approach is more consistent with our collective goal of sustainability and is a far more cost-effective approach to the existing problem.

Postponing the Pipe becomes more compelling when it becomes understood that the Pipe has been designed not simply to address the current "reliability" issue affecting the "end" of the Pipe in Lansing but also to foster 20-years of increased NYSEG/Iberdrola's revenues to be generated by increased gas use and an expanded customer base.<sup>8</sup> Such an approach not only contradicts local goals but also contradicts State policies for reducing fossil fuel use and transitioning to renewable-sourced energy as described by Dr. Howarth in his comments to the PSC. (See the bulleted quotes on p. 2 above and which also can be found in Exhibit B.)

Given the speed of global warming,<sup>9</sup> the "reliability" problem is more likely to decrease as

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<sup>7</sup> See "West Dryden Road Pipeline," in the draft Report at page 7.

<sup>8</sup> According to testimony to the PSC during an evidentiary hearing regarding the Pipe in March of this year, NYSEG representatives reportedly stated that the Pipe has been designed not simply to address the current "reliability" issue in Lansing but also to foster 20-years of increased revenue generated by increased gas use and an expanded customer base.

<sup>9</sup> See "April breaks global temperature record, marking seven months of new highs," *The Guardian*, 15 May 2016, attached as Exhibit F, retrieved from: <http://www.theguardian.com/environment/2016/may/16/april-third-month-in-row-to-break-global-temperature-records>, May 17, 2016.

global warming takes increasing hold on our temperatures. Should the number of days of peak demand decline over time as seems highly likely, the \$17-million dollar Pipe will move from a not-well-thought out project boondoggle to a “stranded asset,” to a “total waste” of ratepayer money in a very few years.”

F. Redesign the Pipe to provide less pressure, less gas and limit the time of its use —e.g. 3-5 years--so that its construction will NOT continue to promote more gas use or an expansion of the customer base. Reasons: NYSEG acknowledged during the PSC's Rate Increase Evidentiary Hearing that the Pipe was designed to encourage 20-years of increased gas use and an expanded customer base. These strategies are in direct contradiction to the goals and policies of the County, several of our municipalities, the Governor, and the PSC.<sup>10</sup> In addition, limiting the capacity of the Pipe and the duration of its use would also mitigate the safety risk to residents living near the pipe, would mitigate the harm to be done by NYSEG's use of eminent domain, the egregious terms of the NYSEG easement, and the apparent unwillingness of NYSEG to share any of the Pipe-generated revenues with the affected Towns or the affected land owners.

G. Time-Limit any Permits for the Pipe and condition any re-issuance on a re-evaluation of its effect on energy use and greenhouse gas emissions. By way of example the Town of Dryden must issue a Special Use Permit for the Pipe. As described more fully below in the Comments on Recommendation 3, the DEC has issued policy and procedures under the State Environmental Quality Review Law (SEQRA) requiring proponents of projects with potentially significant energy or greenhouse gas impacts like the Pipe to identify, describe, and recommend mitigation. Given the major negative effects of the Pipe and the potentially short-term nature of the current problem which it addresses, subjecting this Pipe to a re-permitting process every few years makes obvious common sense.

## II. Comments on Recommendation 2.”Provide secure and reliable energy to support local industry:”

The component parts of this Recommendation can be improved by incorporating a greater sense of urgency and time-specific goals for reducing gas demand in other sectors to free gas for industrial processes for which there is no substitute for the following reasons:

As noted above Cornell Professor Robert Howarth has now shared data with the Task Force Executive Committee showing that the Tompkins County carbon footprint has doubled from what it was in 2008. In addition Dr. Howarth recommended to the Executive Committee and the County Planning Staff that the Legislature's goals for greenhouse gas reduction be dramatically accelerated in light of his data.<sup>11</sup>

Those facts added to the speed with which global warming is actually occurring suggests that the conversion to non fossil fuels must be pursued on a crisis basis.<sup>12</sup> The phrasing in this Recommendation does not convey these facts or sense of urgency. The information footnoted here should be incorporated in the Report, and these Recommendations should be rephrased to convey urgency and to contain recommended deadlines.

## III. Comments on Recommendation 3: Reduce fossil fuel use in commercial and industrial buildings and 6. Develop housing to limit energy use:

These recommendations can be improved in the following ways:

A. Incorporate the information from the several presentations by Dr. Brice Smith including that to the Task Force to the effect that residential, commercial, and industrial buildings can be built to

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<sup>10</sup> See Footnote 2 above and the text of these comments to which Footnote 2 refers. See also the bullets in Exhibit B at page 3.

<sup>11</sup> See Exhibit C and Footnote 3 above.

<sup>12</sup> See e.g.: article in Footnote 9.

provide a comfortable return on investment using “passivhaus” envelopes and heat pumps. Modify the Recommendations to account for that information.

Dr. Smith presented this highly pertinent information to the Task Force, but there is no substantive reference to the information in the draft Report and no explanation for the omission.<sup>13</sup> The information can provide direct, appropriate guidance in carrying out each of the recommended subsections “a,” “b,” and “c.” Therefore, to make the Report credible on these matters, Dr. Smith’s information must be included.

B. Cite local examples of success in building or renovating buildings to be energy efficient and remunerative by using “tight” envelopes and heat pumps: I understand examples to include the Lucente/Fabrioni Village Solaris development, Breckenridge, and a large number of projects carried out by Taitem Engineering. These could provide concrete evidence or information supporting work particularly subsections “a” and “b.” A Dryden resident, “Buzz” Dolph, is in the process of developing a cost-effective approach to building affordable single-unit housing using energy efficient structures and heat pumps. He could be consulted as well.

C. Strongly support the implementation of the DEC’s *Guide for Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statement* by local governments. The Guide was published by the Department of Environmental Conservation (DEC) in July of 2009.<sup>14</sup> In it is the statement that “[State and local governments] will identify proposed projects that have potentially significant environmental impacts due, in part, to energy use and GHG emissions” and will follow prescribed procedures to identify and mitigate such impacts to meet legal obligations under SEQRA “as well as to combat climate change and maximize energy efficiency.”<sup>15</sup>

If the approach in the Guide is “aggressively pursue[d]” as recommended under subsection “c,” of the draft Recommendations, developers and local governments will be required to identify, quantify, and likely reduce energy use and greenhouse gases generated by local projects subject to Environmental Impact Statements. Likely examples include many of those in areas such as Airport/Business and Technology Park, Collegetown, Maplewood/East Hill Village, South Hill, Downtown Ithaca, and Lansing.

Another case in point should be the West Dryden Road Pipeline, itself. As noted Drs. Ingraffea and Howarth have estimated the greenhouse gases to be generated and the apparent conclusion is that they will cause such negative environmental impacts that NYSEG and the local governments involved will have to engage in serious mitigation efforts or not install the Pipe.

The bottom line in terms of this Report is that rigorous local enforcement of this aspect of SEQRA can lead to a much quicker transition from natural gas and a far broader application of alternative technologies like heat pumps in the local residential, commercial, and industrial sectors than anticipated. For this reason alone, the final Report should highlight the Guide and the Task Force should strongly advocate for the application of the policy and procedures in it.

Respectfully submitted,

<sup>1</sup> See copies of “Case 15-G-0284 (NYSEG gas rates) Impact of CO2 Emissions from Proposed Pipeline along West Dryden Road March 23, 2016, Renee Santoro, Program Director, Environment, Anthony R. Ingraffea, Founding and Past President ” and covering email submitted to the Public Service Commission attached as Exhibit A.

<sup>13</sup> See: <http://www.nysacny.org/wp-uploads/Building-and-Heating-with-the-Climate-in-Mind-Brice-Smith.pdf>. A copy is attached as Exhibit G.

<sup>14</sup> See the Guide a copy of which is attached as Exhibit H. Retrieved May 15, 2016 from: [http://www.dec.ny.gov/docs/administration\\_pdf/eisghgpolicy.pdf](http://www.dec.ny.gov/docs/administration_pdf/eisghgpolicy.pdf)

<sup>15</sup> The Guide, p. 2

<sup>2</sup> See “A Brief Narrative for the Presentation entitled ‘Assessing Ithaca’s Methane Emissions from Its Natural Gas Pipeline Distribution System and Point Sources, January 13, 2016” attached as Exhibit A-2 and attached to cover email sent to [info@tcad.org](mailto:info@tcad.org), and the emails of Katie Borgella , and Martha Armstrong.

<sup>3</sup>A copy of “Comments to the PSC and Secretary Kathleen Burgess re Case no. 15-G-0284 (NYSEG gas rates) prepared for PSC Hearings, Binghamton, March 29, 2016, Robert W. Howarth, Ph.D. is attached as Exhibit B.

<sup>4</sup> See “Methane and the Greenhouse Gas Footprint of Tompkins County: An Update, Robert W. Howarth, Ph.D., May 16, 2016,” a summary of Dr. Howarth’s presentation to the Task Force Executive Committee attached as Exhibit C.

<sup>5</sup> See “Fossil fuel use must fall twice as fast as thought to contain global warming-study,” The Guardian, 25 February 2016 attached as Exhibit D

<sup>6</sup> See “Memorandum, October 9, 2014 from Ed Marx to the County Legislature’s Planning, Energy and Environmental Quality Committee attached as Exhibit E.

<sup>7</sup> See “West Dryden Road Pipeline,” in the draft Report at page 7.

<sup>8</sup> According to testimony to the PSC during an evidentiary hearing regarding the Pipe in March of this year, NYSEG representatives reportedly stated that the Pipe has been designed not simply to address the current “reliability” issue in Lansing but also to foster 20-years of increased revenue generated by increased gas use and an expanded customer base.

<sup>9</sup> See “April breaks global temperature record, marking seven months of new highs,” The Guardian, 15 May 2016, attached as Exhibit F, retrieved from:

<http://www.theguardian.com/environment/2016/may/16/april-third-month-in-row-to-break-global-temperature-records>, May 17, 2016.

<sup>10</sup> See Footnote 2 above and the text of these comments to which Footnote 2 refers. See also the bullets in Exhibit B at page 3.

<sup>11</sup> See Exhibit C and Footnote 3 above.

<sup>12</sup> See e.g.: article in Footnote 9.

<sup>13</sup> See: <http://www.nysaccny.org/wp-uploads/Building-and-Heating-with-the-Climate-in-Mind-Brice-Smith.pdf>. A copy is attached as Exhibit G.

<sup>14</sup> See the Guide a copy of which is attached as Exhibit H. Retrieved May 15, 2016 from:

[http://www.dec.ny.gov/docs/administration\\_pdf/eisghgpolicy.pdf](http://www.dec.ny.gov/docs/administration_pdf/eisghgpolicy.pdf)

<sup>15</sup> The Guide, p. 2

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## **Comment 5**

TCAD

I want to point out the amazing things are happening in Tompkins County. While the good members of this task force have been holed-up for the past year fretting over what to do about the West Dryden Road pipeline – wonderful things have been happening all around!

In the face of not having a pipeline to supply more gas, savvy developers have been finding new fossil free solutions! For example, look at Village Solaris in Lansing! When they learned they couldn’t get gas to fuel the expansion of their apartment complex they turned to air source heat pumps! And they’ve been able to capitalize on that choice in their advertising – selling their development as using the latest in energy efficiency for heating and cooling. And three-cheers for

Holt Architects, who just renovated a downtown building with heat pump technology. And there's the new developments in Varna, one that is planning to use air source and the other ground source heat pumps. And even larger developments like Tompkins Financial and Elmira Savings Bank and even Cornell's Maplewood that are exploring how to make heat pump technologies work. And of course there's the recent Heat Smart Tompkins pilot project that enrolled 100 people to make energy efficiency improvements and install heat pump systems. And let's not forget the brilliant developers at EcoVillage who have been leading the way for years – their newest section is so energy efficient that they only need a small four foot long electric baseboard to heat the entire unit.

There is an old saying that those who say it can't be done should get out of the way of those who are doing it. Take a look – all around us, smart developers are doing it and showing us it can be done!

What humans are “hard wired” to do, is solve problems! We have begun to turn a corner and it's a wonderful and inspiring thing to see. How sad it will be if at this point we allow a fossil-fuel pipeline – a relic of a bygone era – to pull us back into the dark ages. If we allow fossil fuel build-out, it is because it is familiar and easy and very short sighted. Then instead of leading the State we will be one of the last to curtail our fossil fuel usage because we will have **invested** in years more supply and infrastructure. If we **invested** the equivalent dollars in energy conservation (the biggest bang for our buck!) we would then have surplus electricity & gas and our homes and businesses would be more comfortable as well. We must hold our ground, and if need be provide support to businesses that are struggling to make new solutions work. We must invest in solar panels & heat pumps for our schools (great 5<sup>th</sup> grade curriculum opportunity to track use & generation etc.). We need a huge educational push towards energy literacy! People do not know that the new hyper-heat air source heat pumps are the most logical choice for heating and cooling in our northern climate. *Investing in fossil-fuel build out is inconsistent with our county's new Energy Road Map!*

Thank you for considering my deep convictions on how to keep our county moving in the right direction economically and environmentally, there need be no conflict of interests.

**“There are only two ways to establish competitive advantage: do things better than others or do them differently.” Karl Albrecht**

Take heart and let's keep moving forward!

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### **Comment 6**

Comment on the Draft Report of the Energy and Economic Development Task Force  
May 18, 2016

I am truly impressed by the distance the Task Force has traveled in 10 months and encouraged by your sensible, yet bold, recommendations for meeting the necessary emissions reduction goals. And you have already undertaken further studies to find out how the goals can be met.

I am particularly struck by your sensible, and bold, proposals to work with NYSEG (along with the PSC) both to find alternatives to installing a gas pipeline along West Dryden Road and to establish an ongoing relationship. This collaboration seems key to developing the new electrical infrastructure that will make running on renewable energy feasible. Your ideas about how to

incentivize efficiency and weatherization will also help the PSC push along its REV/CES goals, perhaps finding in Tompkins County new ways to work with utilities and municipalities.

It does seem sensible to find in the PSC an ally in developing an alternative to the proposed \$17 million dollar pipeline that NYSEG, because of its business model, says that it is obliged to build. I support you in working with the PSC and NYSEG to alter the utility's business model, to shift it away from "business as usual." They need to come round to see that the future of energy is right here in this project and they can participate. I will be rooting for your success in negotiations with the PSC to put \$17 million dollars to work in this community—to find and install alternatives for gas power. It only makes sense to find ways to power the business park and the northern reaches of Lansing on the coldest days without spending \$17 million dollars on a soon-to-be obsolete gas pipeline. What new efficiencies and technologies could be installed for \$17 million?

I am hopeful and excited about the possibility that the PSC will direct NYSEG to work with the County to find how else to meet the needs of current and proposed gas customers.

This Task Force has placed you in the very important position of proposing the solutions that must be found for the County. How can the energy needs of those who now rely on gas, or seek to be connected, be met? You have set yourself a sensible, bold, difficult and necessary agenda—to fully investigate how it can be done. You have a very important role now in bringing businesses and developers into the conversation: What energy efficiencies are expected of them now and how can they achieve them?

I commend you for your understanding of the challenge to reduce GHG emissions radically and immediately, though I hope your initiatives will take us beyond the current TC Energy Roadmap goals. Your recommendations underscore the reputation of Tompkins County for forward thinking and innovative solutions. Thank you for your work.

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**Comment 7**

Suggested language for EEDTF report sect. 5.b - changed text is underlined.  
Develop a community-wide Transportation Demand Management program with a goal of no net increase in vehicle miles travelled. This may be accomplished by expanding support of the Cornell Cooperative Extension Way2Go program, TCAT, Ithaca Carshare, Walk Bike Tompkins, the Downtown Ithaca Alliance and others working to implement different aspects of TDM in order to reduce car dependency, particularly drive-alone trips. TCAD and the Chamber of Commerce will be key partners to engage greater direct employer participation.

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**Comment 8**

**Comments on the Draft Tompkins County Energy and Economical Development Task Force**

I sincerely thank you for your work, and for creating a forum for open discussion of the most critical issue of our time. The report puts our problem squarely on the table by quantifying the heavy dependence we currently have on methane, especially for commercial and industrial use and growth. It also highlights the strong community commitment to reducing our dependence on

methane, absolutely necessary if we are reduce GHG and be leaders in avoiding the most catastrophic effects of climate change.

Our biggest challenge is time. A gradual shifting from methane to solar and other renewable source energies over 20 years would be ideal, and everyone could get behind a plan like that. But the report says GHG emissions must be minimized as soon as possible. Thankfully, the Energy Roadmap is educating people on the urgency of change and the potential avenues in our county for doing so, including medium-scale wind, heat pumps, bio-mass, etc.

The goal of reducing GHG by 20% in the next three and a half years sets an immediate and high bar for “as quickly as feasible,” and requires that we change as many business-as-usual practices as possible today. In that regard, I do not support the statement in the Draft Report on page 11, that states, “..the Task Force realized that some of its key recommendations, although they could be *started* in 3-5 years, might require more time to fully implement.” Time is the major problem to be solved.

How do we get there? In the same way that the PSC’s NY REV is saving money for customers and improving resiliency by shaving the high infrastructure costs of supplying peak energy for electricity. The NY REV is now 3 years into their process of radically reorganizing utility services on the electricity side. The PSC has yet to consider the problems of NY’s very heavy dependence, especially in NY City, on methane.

It’s high time the PSC looked at methane for two reasons: First, enough work has been done on electricity to see a framework developing for the future, but more importantly, the science on climate damage caused by methane is just now – just this year! --at a level that moves methane reduction into the national spotlight for immediate action. (see Bill McKibbin’s article published last month, “Global Warming’s Terrifying New Chemistry: Our leaders thought fracking would save our climate. They were wrong. Very wrong.”)

Tompkins County is the perfect pilot project for the PSC to begin now to shave peak use of methane, and I am very encouraged about possible conversations with Commission Chair, Audrey Zibelman. Before conversations with her, a team should meet to consider how regulatory flexibility and NY investment resources could line up to advance the best of our ideas.

I support the primary recommendations from the Task Force on pages 11 – 14, especially 3.a., “Work to reduce peak and base load demand for both electricity and thermal energy to achieve immediate GHG emissions reductions, avoid the cost of developing excessive generation, and optimize efficient use of energy resources.” I also support the TCAD study to find funding for Green Energy Incentives.

I have sorted through the appendix list of ideas for financial resources, and list those here. Focusing on suggestions in this area is crucial for fast changes in energy direction. Money always makes change more feasible. Also, because policy changes produce the fastest, and in many ways, the fairest way to create a level playing field for economic energy development, I also list below the suggestions around potential policy impacts. I suggest as you move forward, that planners and economic development groups look very closely at these and related ideas.

### **Create more financial incentives and investment resources**

#25 Pair higher level local energy efficiency requirements with incentives to meet those higher cost investments.

#21 Study owner financial considerations and look for ways to incentivize life-cycle costing of buildings' capital and operating expenses for energy systems.

#32 Study owner financial considerations and look for ways to incentivize life-cycle costing of buildings.

#56 Study and understand what the rules are that make the first mover pay high costs for infrastructure expansion that will benefit other customers in the future. Consider how to support the first mover's project by managing those first mover costs.

#27 Look at how we can pay for incentives; try to identify value that drives investments.

#18 Capitalize a loan fund through TCAD that is focused on low-interest loans to developers specifically to do energy improvements to buildings.

#20 Study whether local solutions exist to address financing constraints, including national Freddie/Fannie requirements that mortgages are on buildings that have central heating plants, and lien order concerns for improvements with a 20 year payback.

#24 Develop incentives to help building owners to finance "deep" energy retrofits of 50-80%, above and beyond the traditional 20-25% retrofits typically completed.

#22 Develop a way of valuing business growth for landlords and municipality in order to leverage private and public partners to invest in solutions.

#44 Address the split incentive piece for commercial rental and low-income housing.

#41 Since the landlord/tenant disconnect is an issue for commercial spaces too, provide education to commercial spaces too, provide education to commercial tenants so that they could advocate for building improvements.

#117 Put resources toward reducing energy use (energy efficiency ) in lower income housing.

#61 Consider Community Choice Aggregation and other approaches to locally influence community-scale energy decisions and possibly create a funding tool for energy-related activities.

#112 Promote TC Climate Fund (offsets used to reheat/weatherize homes of low-income families.

#23 Incentivize or require the use of renewable energy in certain (appropriate) types of new construction.

#17 Create enhanced tax abatements through the IDA to influence energy systems decision-making and make it more affordable for developers to invest in those systems. This may be a challenge because state law governs tax abatements and only some uses can be applied.

#14 Require applicants for abatements (and building permits?) to at least think about energy technologies and show why they can't use them, if they can't, before being considered for a tax abatement or project approval.

### **Consider Stretch Building Codes, Review and Regulations**

#10 Encourage municipalities to add a step to their site plan review laws so that they review energy systems in the site plan review process. This should be combined with guidance to municipalities on what to consider when conducting those reviews and sharing case studies and local NYSERDA staff contacts, so that municipalities can share the information with developers.

#11 Encourage municipalities to adopt stretch building codes to require higher energy efficiency in new construction.

#48 Advocate for better state-level energy regulations and programs to support commercial and industrial businesses.

#34 Encourage municipalities to train their staff on implementing the 2016 NYS Energy Code, and to consider adopting stretch energy codes.

#16 Create local building and upgrade requirements mandating using renewables, heat pumps and other energy efficiency measures.

# 19 Require developers to use renewable energy in certain appropriate types of new construction to qualify for incentives.

I have great faith in our local community to be aggressive, forward-looking leaders in finding innovative and practical solutions. We have a lot of civic engagement and depth of knowledge in renewable energy, the strength of an open and honest political process and elected officials, amazing intellectual and scientific resources at Cornell, and a strong economic base relative to up-state NY.

The problem we face is time, and the solution is found in focusing all our energies on the task at hand. Whether it's called "the Marshall Plan for the Climate", or a similar WWII analogy of uniting social capital and the economy to meet a singular goal, I believe that we really can achieve our goal of 20% reduction in GHG by 2020.

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### **Comment 9**

Thanks for such commitment and a relatively comprehensive product. I say "relatively comprehensive" because of what I see as two significant shortcomings.

1) First, some recent but basic science about the effects of today's natural gas use on GHG emissions apparently has been ignored.

2) Second, there are perhaps more forceful and instructive educational steps that could be recommended based on the lessons that your task force has learned in this wonderful project. Without a yet greater emphasis on educating decision makers, developers and the public at large, the task force's excellent work will, like so many other reports, just sit on a shelf and have little to no effect on our future in Tompkins County.

The recent science on natural gas emissions is well summarized by the eminent scientist Robert Howarth in his May 16th update to Tompkins County. That update has great import on any recommendations about the use of natural gas (i.e. methane) going forward. The statement of the update, attached below, makes it clear that any GHG emissions accounting system that ignores this

new information will be extremely far off the mark of achieving GHG emissions reductions in the near future. That is, it drastically changes the previous understanding of natural gas contributions to GHG emissions. In short, it says that today's natural gas use causes drastically more GHG emissions than it did even ten years ago. And furthermore, because of CO2's much slower-than-methane's effects on global warming, our reducing natural gas use is far more likely to avoid the near term global ecosystem tipping points which would prevent any other efforts from helping us avoid future global climate change disasters. In summary, today's use of natural gas has far worse effects than yesterday's use did. Thus our accounting systems should recognize this, and an extremely high priority of our recommendations for near term actions should be avoiding new uses of natural gas as well as reducing existing uses of natural gas. It appears your report ignores this very important update in scientific understanding. It of course should have a drastic effect on the county's considerations of the proposed West Dryden Road pipeline project, whose prime purpose is to promote more use of natural gas in the county. Any economic stimulation the project could have would be more that offset by the costs of it's very considerable contribution to global warming. With this new understanding, that purpose is seriously in direct conflict with the Task Force's goals.

The task force's draft report notes some forward-looking recommendations for educating decision makers, as well as industry and business developers, and the public at large. In the final analysis of the report's effect on the future, education is probably the best tool available to make a difference in the future. I believe that not enough emphasis has been put on the educational recommendations that should grow from the report. The few that are there are good, but they are not comprehensive enough to have the effect that they should. We must find attention-getting ways to educate people about your wonderful findings going forward.

I hope that these comments are useful in finalizing your report. Thanks for your consideration of my comments.

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#### **Comment 10**

I extend my sincere thanks and appreciation to the County and TCAD for their responsiveness to community concerns by forming this task force. Also for your courage in bringing such diverse interest groups together to hash out this challenging topic, and for your wisdom in selecting Charlie to lead us. And Charlie, huge thanks to you for your ability to listen to our many differing points of view, to bring out the best in each of us and guide us through the "groan zone" to a very productive conclusion. And enormous thanks to Katie, Martha and Ina who managed to coral both our bodies and our ideas time and again to keep us focused and moving forward. Overall I think this is a very good report, with many thoughtful ideas to lead our community forward into this new energy future.

My comments concern what I consider to be the prominence given to NYSEG's remarks about the pipeline, and the relative lack of information about some other topics that we discussed.

Regarding the pipeline - my concerns are both about the formatting and the content. As this group will surely recall, we spent quite a bit of time in many of our meetings discussing the difficulties many have had in working w NYSEG - that information provided by them with respect to various renewable projects was inaccurate, unreliable, in-the-box or out-of-step with practices and solutions implemented by other utilities.

Likewise, within our group's discussions about the pipeline, we identified several ways in which NYSEG's remarks were questionable - both from an engineering standpoint and also in regard to their financial motivations for installing it. Yet none of those counter points have been included in the report.

Indeed, NYSEG has been allowed to embellish their remarks for this report - providing new information that was never heard by our group. In one instance their comment makes no sense (6 times higher load during peak - higher than what?), in another it contradicts information that they provided to the PSC under oath - where they testified the pipeline is intended to support 5 - 20 yrs of load growth - depending on how quickly the area develops.

So, I would like to see the NYSEG section scaled back - both in content and formatting emphasis (get rid of that box!), and I would like to see our questions and counterpoints to their remarks included. In contrast to the detail provided about the pipeline, the report provides too little information regarding what we learned about possible remedies or alternatives. In particular, there is little mention of the ideas presented by Ian Shapiro about the reductions that can be achieved by energy efficiency, and the financial feasibility of such improvements - including

1) which types of heating systems were most cost effective to replace (steam, oil) and

2) possible strategies for addressing the split incentive challenge for rental properties.

And there is no mention about the ideas Brice Smith presented - in which he discussed the feasibility of achieving competitive ROIs with very high building envelope efficiency combined with heat pump and heat recovery technologies. I found the comparison of the 2 similar dormitories - one built to LEED standards, the other to Passivhaus design very instructive and worth pursuing.

Most important, and something that both Brice and Ian mentioned but I don't recall seeing in the report (although perhaps I'm mis-remembering as I'm on my phone and don't have report in front of me) anyhow, I don't recall seeing mention of the very important fact that it is much more cost effective to build to higher standards from the start than to retrofit. And further, that retrofits can never achieve the levels of efficiency that can be achieved by building with efficiency in mind from the start.

In that over the next 20 years we will have to drastically reduce our consumption of all fossil fuels - and the lifespan of most furnaces is approx 20 years - this means developers should be strongly encouraged to build now with these new technologies and efficiency standards rather than encountering costly retrofits in the near term. These facts should be clearly stated in the report.

Which leads to the need for an additional section. A section that states that the TF did not evaluate in any systematic way the economics and incremental costs of more energy efficient development.

I was surprised to learn in the recommendations section of the report (albeit also pleased) that TCAD is working with Taitem on a study that sounds as though it may address this question.

I would like to hear more about this study - and wonder why nothing about it was mentioned to our TF. Indeed I would like our TF to be able to weigh in on the scope of this work. At the very least I would like more info about this study - (scope, timeline, how it will be used, who will be accountable for recommendations) to be provided in our report.

Last - I would like our group to consider endorsing a conclusion within our report that states that we recognize that continued conventional development does not align with our GHG reduction

goals, and therefore we encourage very high efficiency development and that we are committed to finding ways to support the incremental costs of doing so.

And I'd like more clearly defined means by which we will both encourage and support such development. (I think those ideas are there - just not group as such)

Finally, I'd like to extend my appreciation to each and every member of our task force. It has been both a privilege and a wonderful opportunity to work with you, and to learn from you. I have learned a great deal about the factors that matter to you in your various sectors that must all come together to develop a workable plan. Most of all, I have learned how much we all care about this community and how much we are able to accomplish when we work together and leave our positions at the door. This has been a truly enriching experience and it has been a privilege to work with you. I am proud of what we have accomplished together, and hopeful for what it means for our community.

With deepest thanks, respectfully submitted,

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### **Comment 11**

May 18, 2016

To: Tompkins County Energy and Economic Development Task Force

Let me begin by thanking the task force for its hard and very interesting work. The draft report contains many good and valuable ideas that should be actualized as quickly as possible. The vision described on page 4 of the report is to be applauded and kept in mind as we move forward.

My comments below focus on aspects that I feel should be strengthened and further things I would like to see happen. A general concern is that the report contains few concrete steps. Specific steps and/or stages need to be laid out and a clear time frame given for these steps.

As one of the many people around here who was involved in efforts to keep fracking out of our towns, county and state, I have grown to appreciate the importance of initiating change at the local level. We would never have succeeded in banning fracking in N.Y.S. if we had waited for the state government to do so. Instead we demonstrated that bans could be put in place and that our residents believed it was critical for the future of our region. Similarly, we can have the greatest impact with regard to climate change if we begin to act locally and aggressively.

With all of this in mind I would like to make the following comments and recommendations.

- Change the goal for reduction in emissions to 100% from 2008 levels by 2050, not just 80%, and aim for a deadline of 2035, not 2050. Include in the calculation of these emissions not only what actually occurs due to burning gas and coal here, but also emissions that occur at the sources of our energy production. For example, most of the natural gas we now use is produced by means of fracking. There are perhaps even more significant emissions at the sites of drilling, at compressors and from transmission lines.
- Significant new construction has been going on locally in recent years. Most of this construction has been done in ways that increase the county GHG emissions, sometimes by large amounts. So already we are in worse shape than we were in 2008. The added factor

that much of our oil and natural gas is now being produced by means of fracking makes any calculations of current emissions even higher.

- Include in your report the information gathered and analyzed by Profs. Ingraffea and Howarth concerning general county methane emissions and current leakage estimates.
- The Task Force seeks to have meetings with the PSC. Include experts such as Profs. Tony Ingraffea, Bob Howarth, and Brice Smith in all of these meetings and in any future meetings with representatives of NYSEG. They have the knowledge and expertise to understand the pitfalls of various proposals and the creativity to think of new alternatives.
- The task force report calls for a balance of environmental, equity and economic factors. Keeping this balance will be difficult but far from impossible. Our efforts to preserve the environment and reduce our GHG emissions can lead to far more jobs than will be created by any pipelines that are built. And if we insist that local labor be used except in the few cases in which there are no local workers who can do specific jobs, our economy will grow in healthy ways that will support the residents of the county. Those few companies that do not want to locate here due to the price of electricity are companies that do not care about the future.
- The report does not contain a clear economic analysis of alternative forms of construction and heating supplies. We have the experts who can do this and there are already examples of passive house construction and alternative methods of heating that have been designed and built in recent years within Tompkins County.
- The report notes that the prices of natural gas and diesel are extremely low. But they will not remain low for long. Thus, when calculations are made concerning the cost of using heat pumps and installing solar panels, comparisons should be made while taking increased fossil fuel prices into account.
- The report mentions several times that when new construction takes place, planning for energy efficiency and renewable energy resources should be done during the initial phases of design. Point 3b in the list of recommendations discusses the use of a “Navigator” as an important way to support these activities. Once we have a “Navigator” program, it will be important to advertise it widely to both local businesses and to any that are interested in locating here. Education is critical to our moving in the right directions.
- I was disappointed that the draft proposal did not make any reference to the thorough analysis and presentation done by Prof. Brice Smith concerning building construction and energy supplies. His discussion of the issues makes it clear that it is possible to move away from fossil fuels if we begin planning from day 1. Many businesses would find this analysis attractive since they will achieve significant savings in the long run if they follow his advice.
- Point 3a addresses the issue of peak demand. This is a problem that has come up in discussions with regard to both the Cayuga Plant and the Dryden Road pipeline. We need to address ways to reduce peak demand immediately. Meetings with NYSEG could quickly lead to developing incentives for individuals and businesses to reduce their demand during peak hours and days. Development of these incentives should be followed by a campaign of

public education so that residents understand both the reasons for reducing peak demand and the benefits for them and the community.

- Point 3c refers to enacting local energy codes. We need to do this quickly and enforce a moratorium on the approval of major projects until this code is in place.
- Sections 1a, 1b, and 4a discuss working with NYSEG and the PSC to “transition our energy infrastructure from a system primarily reliant on fossil fuels for electricity and thermal energy to one that primarily utilizes renewable energy sources.” The Dryden pipeline provides us with a unique opportunity to look for alternatives to supplying yet more natural gas. NYSEG has stated that this pipeline is intended to supply natural gas for current customers and for growth over the next 20 years, exactly the opposite of what the county needs. Money invested in pipelines will only further wed us to fossil fuels, and the stockholders of NYSEG will not want to see the new pipeline abandoned within a few years.
- There are many better alternatives to the construction of new pipelines. The PSC has given NYSEG approval to charge ratepayers approximately 17 million dollars to solve the problems associated with low pressure in its natural gas pipelines. But the guidelines for use of this money does not require it to be spent on new pipelines. We can instead work with the PSC to look for much better ways to use the money to solve the underlying problems. For example, if the Lansing schools were provided with a ground source heat exchange system, a significant load would be removed from the current pipelines while at the same time the school system would save money. New construction along the proposed route can easily be done without resorting to connecting it to natural gas (see Prof. Brice Smith’s analysis).
- The report discusses the need for good financial instruments. There are many in this community who would like to insulate their homes or make use of renewable energy resources but cannot afford to do so. If they are given zero interest loans plus some tax breaks the energy savings they will achieve could well enable them to make these changes. This means that the public should be better educated about existing incentives and we must put in place the needed funds for grants and loans.
- Transportation is of course a major issue. The proposals to encourage an increase in the use of EV’s for at least local travel are important. But public transportation is also an important factor. The task force decided that it could not get into this subject at the present time. As someone who lives in Ellis Hollow I would love to be able to take a bus (perhaps a minibus) downtown or to campus, but this service is close to non-existent. There are no easy solutions to this problem, but my hope is that over time our public transportation will increase instead of decreasing as it is now.
- The report states that a consultant has already been hired to work with developers on case studies. This tells me that the county is beginning to move ahead on the plans proposed. I hope that the discussions with NYSEG and the PSC will also take place immediately and that, as I stated above, these discussions will include experts on the issue of methane emissions as well as on the types of construction that make use of energy efficient building envelopes and renewable energy resources.

- For my own interest (and I am guessing others feel the same way) I would like to know more about what you learned on some of your "field trips". Please make available information on as many of these as possible.

I urge the county to move ahead quickly to reduce our use of fossil fuels and set us on the road to complete elimination of them. We must act locally and now. As with fracking, we can become a model for the state and possibly even the rest of the country.

I again want to thank you for your hard work and hope that you will keep all of us informed as the county moves forward.

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### **Comment 12**

Your programs will require coercion to carry out. Using zoning for example to force people to do as you want. That will not appeal to corporate decision makers who have choices about where to locate jobs. We are in competition with Florida, Texas, and the Carolinas for jobs. Between taxes, regulations, and now "save the planet" energy restrictions, our area will have declining appeal for those who decide where jobs will really go.

Solar and wind power are not reliable and you cannot build a grid that is largely dependent upon them. Natural gas is convenient, cheap, and reliable. The task force has not considered what will happen if we adopt a national energy policy contra to what the task force wants to accomplish.

Electric power is fungible, that is electric from all sources flow through wires together. When people plug in those electric cars, how do they know what fuel source powered that electric? Solar and wind power aren't reliable enough.

If you put too many energy restrictions on these and require the use of high cost alternatives, what makes the task force think that jobs will not simply go where these burdens do not exist?

Not reliable. The sun does not always shine, the wind does not always blow. There are disposal problems for solar panels. These can supplement but really can't replace natural gas and coal as energy sources. And, to the extent we mandate the use of higher cost and less reliable fuels, any impact we may have on climate will be negated by nations that don't care and will gain competitive advantage over us.

Your solution to this is tied into densification, zoning codes, and coercing people to live in urban areas. But, many people don't want that. How will you force this? We will we have an "energy police force," or will we just write zoning codes that force everyone to live as the planners prefer? How will you get people to buy electric cars if they cost more initially and don't go very far? All market efforts to date have failed, except for those willing to accept a big penalty in the name of environmentalism. EVs just don't sell.

Again, your solutions impose extra costs and require coercion or subsidization. The carefully planned community is a community with little or no freedom for those who live in it. To accomplish your goals you must either coerce those who disagree or convert our area into a place where only those who do agree will live.

You are seeking to solve a "climate change" problem without adequate evidence to show that climate change is a "man-made" condition (some people would even criminalize saying that). And,

you stacked the task force with people who already subscribe to the plan. I didn't see any significant membership on the task force from the energy industry or from people who would put economic development as a higher priority than environmentalism. Your goal is far from achievable and should it be achieved it can only be done with a good deal of coercion. Those who can't stomach it will leave the area. New jobs will shun our overpriced and over regulated community. Be careful what you wish for, you may get it. The fact is you can't have real economic growth when you ignore the realities of the competitive US and global economic facts.

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**Comment 13**

Thank you for your work on this important matter. As a councilperson for the Town of Dryden, I would like for you to consider including someone from the Town of Dryden on future work associated with Energy and Economic Development. We are very keen to support and promote responsible economic development and would enjoy participating in discussions related to these topics, especially when those discussions are related to infrastructure in the Town of Dryden (i.e. the West Dryden Pipeline).

I would like to be involved with the meeting with the people from the PSC.

Page 6 - the statement "The Task Force also recognizes that a lack of economically competitive and readily available alternatives to natural gas supply in Tompkins County, whether real or perceived, has resulted in the loss of high quality employment opportunities and significant private sector investment." - needs to be cited. How many jobs have been lost? Where is this data? Quantify the word "significant".

Page 11 - Recommendation #1a - The conditions placed on this recommendation include words like "realistic alternatives" and "economically viable" - these are very subjective - it would be better to quantify these terms so that you and everyone are clear as to whether or not these conditions are met.

It appears that the Task Force did not consider the scientific studies done by Dr. Tony Ingraffea on leaking methane or from Dr. Robert Howarth on greenhouse gas emissions. These need to be included in the analysis and the report.

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**Comment 14**

First, thank you to the 19 members of the committee and the 3 staff members.

Please, understand that I am passionate about all aspects of perserving our natural environment. With that in mind, I must say that I did not find any portion of this report to go far enough or to express the urgency of abandoning our use of fossil fuels. For example, the City of Kingston, Ontario relies heavily on wind power and has for a number of years. They made the effort to start and have been successful moving forward with more windmills on Wolf Island. There are other examples. I wish this group had made a bold forward moving goals, rather than the rather bland report produced. We need to stop relying on NYSEG and large conglomerates to lead us by the nose and hold us hostage. Let's be innovative and find ways to provide energy sources right here....clean

sources...wind, solar, geothermal.

Also, I wondered why Robert Howarth (sp?) was not a part of this committee, as he is an energy expert within our community.

Again, I appreciate the effort and hope that you understand these are my options and heart felt. In the nearly 11 years of commuting each day to Ithaca, the 25 miles of landscape has changed....dead, dying and stressed trees, many fewer wild animals and birds. The damage done by climate change and storms is more and more obvious each year.

So, nothing new from me....I have been saying this to many of you for years now.

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### **Comment 15**

Comments on the 2016 Tompkins County Energy Plan

An easy way to analyze transitioning from pollution based energy to renewable energy is to break things down into 3 general categories:

1. Electricity
2. Heating/cooling
3. Transportation/potable energy

Of these 3 electricity can be the most universal - it can be used to make heat (resistance, heat pumps) and cooling (refrigeration, cooling towers/water pumping) and can be easily used to power trains/some buses (overhead lines). Neither heat energy nor transport fuels can be used for lighting, communications, computers, etc without first being converted into electricity.

Of the 3 major energy categories, electricity is the most easy to convert to renewable sources and from pollution based approaches (nukes, fossil methane, coal, oil) at production costs that, on a subsidy free basis, are close enough to "competing" with nukes, coal and methane. Of course, "competing" is hard to exactly pin down, since essentially ALL energy in the USA is subsidized. The most subsidized at present are nukes and photovoltaic (PV), and then there is the ability to avoid the cost of pollution/waste disposal (nukes, methane, coal). And in NY State, electricity prices tend to have little relation to costs, are in a constant state of flux (NYISAO "Casino based pricing" - alias "Location Based Marginal Pricing"). Both PV and wind based electricity cost more to make when there is "price uncertainty (10% to 50% more) because price uncertainty translates into higher cost capital/debt since predicting cashflow/income/ability to repay loans is a fools errand when future prices for electricity are unknown and unknowable. But switching to a sane pricing system for renewables is beyond the scope to this Tompkins County effort...

The easiest way to "go renewable" would be to target electricity sourcing, and to swap out methane, coal and nuke based electricity for, bay and large, wind and PV. Buffering supply and demand on a short and intermediate time scale can be accomplished at a low cost with pumped hydro and grid interconnections, or at high cost via batteries. But it CAN be done with existing technology without the need to infer "magical thinking". Electricity provided by Low Speed Wind Turbines on tall (120 to 150 meter) towers is much lower cost than with PV, and wind turbines will almost always be USA and Canada sourced, whereas PVs are likely to be defect slave labor (China) sourced and effectively of zero economic benefit with regards to manufacture of them. However, commercial

scale wind turbines start at \$4 to \$5 million each, which requires access to capital, community involvement and partial/almost complete (via Municipal Bonds/County ownership?) local ownership. Wind turbines also produce SOME electricity ~ 7000 hours per year, while a PV system will only be generating meaningful amounts of electricity ~ 1000 hours per year in Tompkins County. More PV requires more energy storage (buffering), while more wind sourced electricity will require less storage/buffering than with PVs. The unsubsidized cost differences are significant, and the subsidies given to PV - MACRS and ITC (~ 18 c/kw-hr over 20 years) are much greater than for wind - MACRS and PTC - presently ~ 2.8 c/kw-hr over 20 years. Those subsidies are almost ALWAYS tax avoidance based ones, which means that governments (notably Federal/State) get less revenue with more renewables deployment, which then leads to the "whose budget gets cut?" musical chairs scramble. Most PVs are not taxed as property, which in Tompkins County means that several billion could be invested and never be taxed as property. In addition, most PV systems (especially small ones) will NEVER make a profit, which is OK as long as people are aware that billions might be "invested" in something that will never generate revenue/profits which can be taxed to fund government activities.

However, those are politically addressable problems - not technical in nature. The actual installation and manufacture of the renewable energy systems is the easy part. It's the politics and deciding who pays and who benefits that is the difficult part of the switch to renewables....

Most heating in Tompkins County is for space heating (residences, offices, schools, etc) and this is easily done via heat pumps. However, this is a capital intensive operation - especially for ground sourced heat pumps (GSHP), which are ~ twice as energy efficient as air sourced heat pumps (ASHP). GSHP can also drop the energy usage for air conditioning by ~ 75% versus ASHP - something to keep in mind as Global Warming becomes ever worse. The heat pump manufacture should also be a prime target for economic development officials - exporting money to pay for imports (into this part of NY State) ends up on balance impoverishing Tompkins County. Heat Pump deployment is also something that can be aided by both low cost capital (4%/yr for 20 years) - perhaps obtained via Municipal Bonds - as well as a sales tax on methane, propane and heating oil. Raising the cost of heating with fossil fuels will provide more incentive to switch to electricity - especially electricity with a stable long term price, which can ONLY be obtained via renewables. The revenue from a sales tax on methane/propane/diesel oil could be used to help fund conversion of homes to heat pumps.

Lastly there is transportation. Tompkins County is, in effect, a giant suburb built around the small metropolis of Ithaca, and cars are needed for MOST people to get to work/shop/school, etc. In addition, most goods are hauled via diesel powered trucks, and for farming/construction, diesel is also a must have item. For some rich people, electric cars are viable (or at least one of two). But for the foreseeable future (next 20 years), fuels are going to be required to move people and goods as well as for farming - in addition, there is a huge sunk investment in cars, trucks, buses and construction equipment. Given this, and the large amount of abandoned agricultural land or the large amount of land used to grow hate and corn, maybe a shift to food + energy crops is in order.

Most people in Tompkins County can no longer afford to live within Ithaca (housing too expensive) and it would not be viable for most to abandon their present housing to move to a high density urban arrangement. SO THEY WILL NEED CARS. Most people will also not be able to afford to switch to an electric car in the next 15 years, either (15 years is the expected lifetime of their present vehicle). Combine these trends with stagnating and/or declining real incomes for the bottom 90% of Tompkins County residents on the income and wealth scales, and a switch to electric cars seems mostly to be a boutique option for local rich people, and of those only a fraction

will likely do so, mostly for environmental/social reasons.

A biodiesel plant for Tompkins County would provide a new source of revenue/new crops for local farmers. For example, a 10 million gal/yr facility using ethanol as the esterifying alcohol would need ~ \$20 million worth of vegetable/plant/seed oil (9 million gallons of oils) - and these can come from a variety of oils - canola, soy, nut, linseed, flax and notably hemp. In fact, at 300 gallons/acre oil yield, hemp would only require 30,000 acres (co-products are 2 tons/acre high protein feed/5 to 10 tons/acre fiber for clothes, paper, other and also this fiber can be converted into ethanol) to supply the raw material- which is 12% of the acreage needed by soybeans. 30,000 acres is ~ 10% of the land area in the county. Biodiesel can be substituted for crude oil based diesel in all proportions, and it can also be blended with ethanol to lower NOx pollution. The \$20 million/yr in new direct sales from local farmers would translate into more than \$100 million/yr in local economic activity given the high multipliers for farming - especially non-dairy related farming. And \$100 million/yr in mostly blue collar jobs is ~ 2000 jobs...

It is the gasoline replacement (gasoline is now 90% crude oil based/10% ethanol) that needs to be pushed. Obviously more efficient motors/more passengers per mile traveled will lower overall fuel consumption. Of the replacements for gasoline, almost ALL engines in cars less than 10 years old could be switched to mostly ethanol. But, like electricity replacement, this is a POLITICAL choice as much as anything else. A 50 to 100 million gal/yr Ethanol plant using a combination of starch (corn) and cellulose (stover, hemp, hay) as feeds and cellulose as the thermal energy source would be a very huge economic boost to the region - especially one cooperatively owned by farmers. It generally requires ~ 100,000 acres (150 square miles) of corn for a 50 million gal/yr, so this means that the starch supply would need to be sourced from other counties as well. Given the waste heat rejection of this plant, it could also serve as a heat source for a large vegetable greenhouse complex, ultimately involving up to 1000 new workers. However, since these are not the jobs our regional leaders are searching for, such approaches may be difficult to get implemented. However, given that long distance trucking from Mexico, California and Florida (as well as droughts in California and Mexico) will REQUIRE sourcing vegetables from other locations (especially those close to the NYC metro region), maybe local leaders can be persuaded to change their minds. The Ithaca region is less that 6 hours by truck or train from one of the biggest markets for fresh vegetables in North America. Especially when the majority of the glut of college educated graduates cannot find jobs in the fields that they were trained in....

So, the last and most significant portion of Tompkins County's CO2 pollution is basically for cars and trucks (about half of the CO2 pollution). Swapping this out for a food-fuel hybrid with the goal of large scale employment via the waste heat used for greenhouse crops can provide a powerful economic drive. And the by-product of this is renewable fuels (ethanol for cars, ethanol-biodiesel for trucks/tractors/buses, ethanol for biodiesel) which will at least be affordable, especially when the next round of Peak Oil spikes oil prices.

Oh well, my 2 cents worth.

[Comment 15 then, continues below]

Generate more renewable electricity (mostly via commercial scale Low Wind Speed Turbines), replace residential and commercial/office heat with electrically powered heat pumps

More renewable electricity (especially local PV) will require buffering supplies of electricity with demand. Tompkins County has plenty of locations where 40 to 100 acres of land can be converted

into reservoirs for water pumped from Cayuga Lake/back into it for generation, and where a height drop of over 500 feet (and up to 1000 feet to 1200 feet) exist. A great public works program, too. More insulation and a sales tax on methane used for heat, with funds used to provide financing for heat pumps, especially Ground Sourced Heat Pumps for commercial facilities

The primary electricity source should be wind turbines, with minor amounts provided by PV and biogas (ALL commercial dairy farms should be doing anaerobic digestion/electricity generation via combustion of the biogas). For diesel fuel, biodiesel/ethanol blends should be used. And for gasoline, the percentage of ethanol needs to be upped from 10% to at minimum 85% rapidly. The biofuels should be based on locally/regionally supplied corn/oils/cellulose (fiber, stover) as much as possible. The waste heat from an EtOH facility (~ 50 million gal/yr) needs to be used for large scale greenhouse cultivation of perishable vegetables (can also use some of the CO2 by-product in the greenhouse cultivation). A key target should be the NYC metro area. Biofuels, and a regional train freight center to replace long distance trucking as much as possible

Housing needs more insulation, more heat pumps. Because housing in Ithaca is already a giant real estate bubble/asset prices absurdly inflated (except by NY City standards), densification is essentially only for the rich and super-rich, and there just are not that many of them. So Tompkins County will continue as a large suburb, with the bottom 90% of the population (as judged on income) largely confined to outer villages/outer burbs of Ithaca as well as certain slummy areas avoided by rich people (West Hill). Increasing economic activity sucks, and gentrification/stratification is one of the many aspects of that.

Keep trying. And try setting up a municipal renewable energy utility, as over utility monopoly overlords certainly are falling down on THAT. After all, Iberdola is the biggest private owner of wind turbines in the world, and all they do is push unwanted methane delivery systems on US. And they own ZERO wind turbines in Tompkins County (76 MW in Herkimer County, however). Maybe we just need a change from THEM, as they are behaving as pathetic non-performers, and getting paid too much money for bupkiss.

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### **Comment 16**

(1) Assuming this document is intended for the interested public, do not use jargon (e.g., p. 9 last paragraph: "stretch codes") or insert a parenthetical definition or explanation immediately after (e.g., "energy efficiency codes that stretch beyond what is typical" ?).

(2) Similarly, define the units in Fig. 1. Capital "M" in ISO means mega (as in para. 2, "MW"), but is also used here in "MT" to mean something else. (Just because this is lifted from another document doesn't mean it is clear in this report.)

(3) It would be good to have a copy editor do a read-through, to add and subtract hyphens as appropriate, to ensure the use of serial commas for ease of reading (e.g., p. 4, last para., first bullet: "...good-paying jobs, career development, and...") to ensure that right-hand parentheses are paired with left-hand ones, to make sure that "that" replaces "which" where appropriate (e.g., p. 4, para. 3, line 3), etc.

(4) Dealing with the still-unresolved individual understandings of what is "possible" and "feasible" continues to haunt the report (e.g., p. 5, last sentence: "as soon as possible"; p.6, para.4, last

sentence: "as quickly as feasible"). Perhaps this needs to be acknowledged clearly near the end.

(5) p. 10, item 7: To what specifically does "this work" refer?

(6) p. 11, second bullet: change "between" to "among".

(7) p. 11, last para: 1.a., line 4: "meet the energy demands" -- reword as "energy needs" (otherwise this conflates the different meanings of "needs", which are expressed on the demand side but will be met via the supply side) [This also applies to p.12, item 2.a, line 3.]

(8) p. 12, item 2 -- re-title as "Provide secure and reliable energy to support local industrial processes" since that is what is being addressed (in contrast to item 3 "...industrial buildings"

(9) p. 14 (...recent initiatives" -- In your slide-show presentation of the report the words "Next steps" were used. It would make sense to actually use them here.

(10) When one reads/hears that TCAD learned too late of entities that had interest in locating/expanding here but realized that their already-invested-in designs were predicated on "traditional" fossil fuels that are no longer available locally, TCAD was too late to the game to utilize local energy expertise to help the business/industry consider alternatives -- alternatives that must henceforth also be used to also address climate instability. This makes the report's "navigator" concept (p. 12 item 3.b) an incredibly useful and insightful next step!

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#### **Comment 17**

This is a very complex subject; people need a "generating power for dummies" guide. People see a windmill as "generating power" but don't understand the complexities of the grid distribution system or the pipeline distribution system.

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#### **Comment 18**

Much of the public that is opposed to the West Dryden pipeline does not believe that there is a problem now that is impacting jobs.

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#### **Comment 19**

Thank you for the opportunity to comment on the draft final report of the Energy and Economic Development Task Force. I think it's great that this Task Force was combined; it's an important step in the right direction. I have attached a PDF with my full comments, some of which are very minor. For convenience, my five main comments are listed below in rough order of importance.

#### **1. Page 17, end of recommendations**

The convening of this Task Force was a GREAT, necessary step to address the growing rift between the ED and Energy/Climate communities. I would like to see a recommendation to

continue this great collaboration through a specific mechanism(s), to make sure that efforts continue to be aligned in the future. One potential mechanism is getting more members of the ED community to participate actively in the Tompkins County Climate Protection Initiative, an ongoing collaboration with broad representation across multiple sectors. Another would be to have relevant boards and committees make a concerted effort to include both people with expertise in ED issues and in climate/energy issues.

**2. Page 16, recommendation 5**

I understand that the scope of the task force did not allow for the analysis of certain elements of the transportation sector. Still, in general, transportation is not focused on enough in this report. No transportation professionals were included on the task force. This does not reflect the importance of transportation to both ED and Energy goals. I have included more specifics comments in the body of the report.

**3. Page 14, item 3**

There is no mention of equity issues in the factors that were considered when selecting recommendations. The "triple bottom line" concept mentioned as part of the Task Force's charge is very minimally addressed in this report.

**4. Page 9**

Consider changing: "The Task Force advocates for immediate actions to help the County achieve its stated goals of 20% GHG reduction by 2020 while also addressing economic development needs while stepping up..." TO: "The Task Force advocates for immediate actions to help the County achieve its stated goals of 20% GHG reduction by 2020 while also addressing economic development goals while stepping up..." ED goals and energy/climate goals don't always seem like they are on equal footing in this report.

**5. Page 13, item 6**

I find the repeated references to heat pumps a little too specific in some cases. Perhaps it is appropriate because this report is focusing on near-term actions. But I think the real point is that reliable, efficient, financially feasible HVAC technologies exist today.

Again, thank you for the opportunity to weigh in on this important effort. Respectfully,

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## Appendix I

### Energy Focus Areas Project Scope of Work

#### Phase I.

**Task 1A. Collaborate and meet with NYSEG.** Under this task, TRC shall plan, schedule and facilitate a NYSEG collaboration meeting to engage in a high level discussion with NYSEG about the project goals and objectives. We will discuss with NYSEG the general infrastructure capacity in all four energy focus areas including: Ithaca-Tompkins Regional Airport, Downtown Ithaca, East Hill, and South Hill. TRC shall:

- Identify key staff and points of contact at NYSEG required for successful collaboration, including:
  - Identify a NYSEG key point of contact for the project
  - Identify key contacts for electric and gas distribution
- Schedule and attend a meeting either at County offices or at NYSEG. Collaborate with the County to develop an agenda.
- Collaborate with the County to communicate the goals and objectives of the project to NYSEG with the goal of obtaining their support required for successful collaboration.
  - Assist in explaining the goals of the project and how the project connects to the broader economic goals of the County and New York State (specifically REV).
  - Discuss with NYSEG any known system limitations or capacity constraints in the four focus areas.
  - Discuss any NYSEG planned system upgrades in the four focus areas.
  - Discuss data and information sharing needs.
  - Identify potential ways in which NYSEG can support the project.
- Identify specific information / data required for the project from NYSEG and assist the County in submitting a formal request for this information. Review and verify compliance with NYSEG information and security requirements (IT security requirements and Non-disclosure agreements).
  - Document information request processes and protocols for use by County for future focus areas or future needs.
  - Execute non-disclosure agreements as required
- Based partially on information from the meeting with NYSEG:
  - TRC shall work with the County to identify two focus areas for a more in depth analysis.
  - TRC shall also collaborate with the County to adjust the remaining tasks as required based upon information learned at the NYSEG meeting.

**Task 1B. Assist in defining two energy focus area boundaries.** Perform a more detailed analysis of two energy focus areas to further define the boundaries of the energy focus areas.

This would include identifying electrical supply circuit geography and gas pipeline service infrastructure. Using NYSEG energy infrastructure information and information from the County and TCAD regarding key facilities and potential growth areas, compare the current energy focus area boundary to the electric and gas infrastructure and propose adjustments to the focus area boundary based upon the energy infrastructure.

**Task 1C. Assist in defining two additional energy focus area boundaries.** Perform a more detailed analysis of two remaining energy focus areas to further define the boundaries of the energy focus areas.

This would include identifying electrical supply circuit geography and gas pipeline service infrastructure. Using NYSEG energy infrastructure information and information from the County and TCAD regarding key facilities and potential growth areas, compare the current focus area boundary to the electric and gas infrastructure and propose adjustments to the focus area boundary based upon the energy infrastructure

**Task 2A. Identify potential capacity constraints for NYSEG electrical and gas infrastructure in ONE selected energy focus areas.** Identify any limitations on service to existing development, capacity to serve additional demand, and, if possible, any planned NYSEG upgrades or maintenance of the infrastructure. Determine whether any deficiencies that may exist will impact average and/or peak demand.

- Upon receiving the necessary NYSEG information/data, review distribution maps and other required data (e.g. substation load profiles, data from gas system models) to identify NYSEG infrastructure and loads in the selected focus area (both electric and gas).
- Perform a field survey of the electric infrastructure.
- Identify potential energy infrastructure constraints that could limit development / growth in the focus area.

Note: Phase I of this project is dependent upon obtaining the required information/data from NYSEG.

Phase II.

**Task 1. Identify potential capacity constraints for NYSEG electrical and gas infrastructure in THREE remaining energy focus areas.** The work and deliverables under this task shall be identical to task 2A.

**Task 2. Analyze growth scenarios and potential improvements.** For one area selected in consultation with the County and TCAD (and potentially NYSEG) develop potential growth scenarios and associated energy demand. Identify potential improvements to the energy supply and distribution system required to meet projected needs. Obtain from the County and review relevant information regarding growth in the focus area (i.e. plans, projections, key projects planned, and/or material changes to zoning/density). This analysis shall consider:

- Feasibility of current or future increased deployment of local renewable energy to address deficiencies in the system
  - Identify current and proposed large scale renewable energy projects in the focus area
  - Identify current or proposed renewable energy programs and the potential generation they could represent in the future
  - Perform a field survey of the area and identify potential sites for future “utility scale” PV installations
- Any opportunities to cost-effectively make improvements that piggyback on planned improvements or maintenance
  - Discuss with NYSEG to identify any planned system upgrades / improvements
- Whether changes to the infrastructure may allow for NYSEG to forego planned improvements, for example, substation upgrades.

**Task 3 Additional optional analysis.** This task shall be performed only if budget allows. Upon completion of prior tasks, TRC shall notify the County of any remaining budget and shall identify hours available for this task.

Identify potential contribution of Combined Heat and Power facilities and micro-grids to enhance local electrical and natural gas system capacity and provide added reliability and/or resilience to local electrical supply.

- Determine if there are any facilities that would potentially serve as ideal candidates for CHP installations. This would include larger C&I, existing thermal distribution, other large users with year round use for thermal.

Identify the potential to reduce energy demand through energy efficiency improvements and demand management strategies in new and existing facilities.

- Identify potential large end users within the focus area, e.g. large commercial/industrial loads, large outdoor lighting, HVAC
- Identify potential permanent demand reduction (kW) for facilities of like type

**Task 4. Develop a high level strategy for meeting future projected energy needs in the Focus Area.**

- Identify strategies that are likely to be the most cost-effective / work best in the focus area. Describe how these could be deployed. Describe key next steps for future feasibility studies to further enable the implantation of these strategies.

Phase III. – future with additional budget

Repeat analysis from Phase 2 for additional focus areas.

Schedule

Phase I

Task 1. December 2015 – February 2016

Task 2. February 2016 – March 2016

Phase II

Task 1. March 2016

Task 2. April 2016

Phase III

May –September, 2016.

Depending on budget **Contract** would provide for Phase I with progression to Phases II and III each dependent upon prior approval of County and TCAD.

## **Appendix J**

### **Green Energy Incentives Project Scope of Work**

#### **Task I**

Identify a number of representative projects including actual existing case studies of new buildings, extensive expansions or renovations, as well as recently constructed or planned buildings of the type that the IDA typically considers for possible tax abatements. Based on what local developers consider to be a “reasonable” Return on Investment (ROI) determine, for each of at least three local representative projects selected in consultation with the County and TCAD, the following:

- 1) Energy efficiency and/or renewable energy measures that a well-informed developer would be/have been motivated to include in a project design based on what they consider(ed) to be a reasonable ROI. Calculate the ROI for making such improvements and estimate the energy/greenhouse gas emissions reductions that could be achieved compared to a building that would meet the current energy code.
- 2) Determine the maximum level of energy and greenhouse gas reductions that could be/have been technically achieved in the projects at a minimally positive 20-year ROI, recognizing that a developer would generally consider a higher ROI to be more desirable.
- 3) Determine what the ROI was/would have been if the building had achieved a 70% reduction from the energy use in a typical existing building of the same type (in line with Architecture 2030’s District standard for new construction).

#### **Task II**

Determine a standard (or standards by building type) that an enhanced IDA abatement could be expected to effectively incentivize. Determine a level or range of IDA abatements needed to encourage new building developers to achieve the recommended standard(s).

#### **Task III**

Provide guidance in selecting:

- a) a method or rating system to determine whether new commercial or industrial buildings, extensive expansions or renovations include design elements that would be expected to meet the energy efficiency standard identified in Task II, and
- b) a measurement system to determine whether those energy and emissions goals are actually achieved.