FOR THE RECORD

AIA New York Chapter

Testimony on INT. No 887-2012 - A Local Law to amend the Administrative Code of the City of New York, in relation to the creation of a sustainable energy systems web portal

The American Institute of Architects New York Chapter through its Committee on the Environment supports and commends the creation of a sustainable energy systems web portal to centralize and facilitate the implementation of renewable energy technologies to serve new and existing buildings. It is essential to the future of the City that we all work to encourage the use of green building technologies. This proposed web portal would be an important step towards promoting renewable energy technologies and helping building owners determine which systems are right for their projects.

However, given that energy efficiency strategies have been demonstrated to provide much greater energy savings at lower costs and more expedient returns on investment, we strongly suggest that the nature of the portal be expanded to include energy efficiency analysis tools as well as tools to evaluate the use of renewables. Increasing the energy efficiency of a building can be done in multiple ways. Strategies such as better insulation, more efficient lighting, improved seals on windows and doors can make an important difference in reducing the energy usage and cost of operating a building.

The framework of the portal could be such that there would be three sections in keeping with the typical approach to developing a sustainable project. Firstly, a section on passive design would incorporate strategies including shading, insulation, and efficient windows. A second section would address high efficiency systems such as Lighting, Heating Ventilating, and Air Conditioning (HVAC), and plug load management. The third section would address renewable energy technologies.

In addition, we suggest the following items be included in the renewable energy section of the portal:

- Links to available financial incentives (city, state and federal)
- A link to the New York City Solar Map
- Tools and guidelines to evaluate feasibility of installing renewable energy technologies (i.e. site solar access, wind direction and speed, available sun hours, etc.)

These additions and the three section framework would ensure that the web portal provides a wide range of information for building owners to make informed decisions. We realize that expanding the scope of the portal will require an additional effort to incorporate the necessary information. However, we feel strongly that the framework outlined above responds to the need for an integrated approach to the reduction of greenhouse gas emissions from buildings.

Moreover, we believe it is vital that the website be prominently displayed and easily found across New York City's websites. The City should also work with the State to post links to the web portal on the State's websites for the New York State Energy Research and Development Authority, the New York Public Service Commission and other state agencies. During the build out of the web portal consideration should be given to identifying other organizations, such as AIANY, to post links to the web portal. Additional organizations should be strategically identified to promote the new site to a wider audience and to make certain that practitioners are aware of what would be an incredibly useful tool. We are ready to support this effort and willing to provide expert feedback during build-out of the web portal.

Thank you for this opportunity to provide testimony.

Joseph J. Aliotta, AIA, LEED AP
2012 President, AIA New York Chapter

Pat Sapinsley, AIA, LEED AP
Co-Chair, Committee on the Environment

Rick Bell, FAIA
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FOR THE RECORD

sane energy project

WWW.SANEENERGYPROJECT.ORG

To the attention of: New York City Council Members Gennaro,
Brewer, Fidler, James, Koppell, Koslowitz, Lander, Mendez, Rose, Van Bramer, Williams and Levin
Cc: Samara Swanson, William Murray

December 17, 2012

Comments in support of a Local Law to create a Sustainability Portal

Sane Energy Project enthusiastically supports the creation of a NYC sustainability portal and gratefully commends the Council for this initiative. It's a rare moment when activists can come out in support of something, and we thank you for the opportunity to do so. The creation of an accessible, easily navigable web portal to renewable options is an essential step in encouraging the use of renewable energy sources of wind, water and solar power, and reversing climate change.

We will be happy to include a permanent link to this portal on our own website, and to make our subscribers aware of it.

Suggestions to enhance the proposed portal:

• Under "Definition," for "renewable energy system" please add a statement of what is excluded, which should be all fossil fuels, including natural gas, coal, oil, etc.

• Please make it a website one can "subscribe" to, so that new posts are automatically/simultaneously launched as emails to subscribers. This is one of the best ways to make a website interactive and more useful.

• Add alerts when city laws, rules or permitting requirements change, or when new rebates or incentives are added.

• Include info about potential new legislation and initiatives, so that citizens can be aware of upcoming measures they may want to support or comment on, including especially the suggestion for solar on school rooftops.

• Please add a section on the website about sustainable options for boiler conversions, including the method Sane Energy Project endorses, using a mix of efficiency and conservation measures, radiator management, insulation, biodiesel or biodiesel blends, and solar hot water.

• Please include a large section on Passive House measures. As you may be aware, Passive House is a method of retrofitting or new construction, which reduces energy use by up to 80%. Conservation is the best renewable "fuel."

• Sane Energy Project much prefers Benchmarking and the monitoring/posting of a building's actual energy use as opposed to the LEED system, but we are supportive of the use of certified green building materials.

Respectfully Submitted,
Clare Donohue
Clare Donohue
Founding Member, Sane Energy Project

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FOR THE RECORD

December 16, 2012

James Gennaro
Chairman
Committee on Environmental Protection
The New York City Council

Dear Chairman Gennaro and Committee Members,

The Solar Energy Industries Association (SEIA) is pleased to offer this testimony on Int. No. 887, a local law to amend the administrative code of the city of New York, in relation to the creation of a sustainable energy systems web portal. The legislation will create a web-based portal for all renewable energy systems that is accessible to nonprofessionals.

SEIA is the national trade association of the United States solar industry, encompassing all solar technologies, including photovoltaics (PV), concentrating solar power, solar heating and cooling, and other technologies. Through advocacy and education, SEIA and its 1,000 member companies work to make solar energy a significant energy source by expanding markets, removing market barriers, strengthening the industry, and educating the public on the benefits of solar energy. SEIA's membership includes many companies with offices and facilities in New York.

SEIA supports passage of this legislative as its passage will create aid in additional development of renewable resources in the City.

Regards,

Carrie Cullen Hitt
Vice President, State Affairs
SEIA

Re: Sustainable Energy Portal for NYC

Date: 12/17/12

Remarks by: Mickey Bennett ; PV Installer in NYC, NYSERDA Certified PV Installer, NABCEP Certified PV Installer. Cell 516-376-0404. Email: mbennett@solaroneenergy.com

The City Council is taking an innovative look at how to improve adoption of renewable energy solutions. There is still much public support for this as evidenced by a nearly 60% increase in residential PV installations year over year. It is important to note that 85% of that volume was due to PPA's (Power Purchase Agreements) that lower the cost of ongoing electric bills and a third party owns the system. The public gets the benefit and people get cleaner, less expensive energy. We currently have one entity, Sun Run doing this in NYC.

The Goal for this Local Law is : Enabling the public to enable them learn about renewable energy systems how to upgrade are not adequately centralized and this is an impediment.

We are finding that the market is split into two main groups:

1) Residential where the average system is under 5kw and costs about $35,000 in most areas but costs $50,000 in NYC.
2) The fastest growth NYC will experience in terms of PV is the commercial segment, increasingly referred to as DG or Distributed Generation. DG projects modal size is 50kW of less. A 50kW system in most areas would be about $300,000 but in NYC it is at least $350,000.

The reason for Solar adoption being slow is not education. It is the cost to install in NYC. The most painful costs to pass on to the consumer are the soft costs. These are the costs of meeting an overly aggressive set of tangled and repetitive bureaucracies which add no value to the process. They evolved within separate organizations, each of which seemed determined to make sure they would inspect everything. They also seemed determined to ask for things well beyond the scope of their actual responsibility. In addition to forms and tangled and conflicting rules, we have organizations with no tracking, no accountability and no interest in improving the process.

These are not complaints and carping but instead represents true costs borne by the customers or in many cases they help make people turn away because of the cost.

To be clear, these soft costs are so onerous, Steven Chu, the secretary of energy, started the *SunShot* program. The biggest goal of the program is to reduce soft costs.

Today Germany can process a Solar Project in about 8 days for a few hundred dollars. Here is what we have to do right now to install solar on a flat roof on an existing building:

1) File a rebate request with NYSERDA. I cannot order any materials because they reserve the right to change the rebate anytime and we have to release the customer from any obligation if it

changes. So we cannot start order materials until the project is approved from 8-12 weeks from when it was submitted.

2) File an Engineering request with Con Ed to confirm the local grid with thousands of amps can handle the additional 70 amps we might add to the grid if the building we install is totally shut down. This can take about six weeks before you get an Inspector assigned. Then it can take about 6 more weeks of phone calls before someone checks a map in the office and says "the grid can handle it". There is no management interest in Con Ed to support Solar in any way.
3) At some point we get approval that the rebate has been approved. And proceed to buy the equipment
4) Our PE or Architect (as required by the NYC dept of finance) has to prepare drawings and structural calculations. That makes sense. But there are about 20 different documents that professional must file, including all of the paperwork involved with processing the PTA4 forms for the Property Tax Abatement. The hours of work to get all of the required forms filled out and signed by all people involved. They then need to be reviewed with the one solar reviewer in queens. Not only does this take time and add expense, it can take weeks to get an appointment to review project specifics before submitting them.
5) [Note about reducing costs and delays: Because the Dept. of Finance requires a professional to file all tax abatement paperwork, including all of the other forms, several of which are gratuitous. Do we need to pay costly professionals to file administrative paperwork?]

What kind of Duplication and Waste Occurs that a good hub could eliminate?

Authority	Scope of Responsibility	Excess
NYSERDA	Incentive Dollars Are Effectively Invested	They inspect again after Con Ed and After NYC Electric. Every inspection costs money as Master Electrician needs to be there.
Con Ed	Should be "can the PV System Co-Exist with the local Grid"	-They want to review three line drawings and they do not track any submittals so no one cares about solar. We see 8 to 16 weeks to get engineers to review drawings. We cannot speak with engineers. - Con Ed inspects the system again, costs for Master Electrician. - Con Ed will not schedule appointments and they do not care. - They want to be involved in the process in terms of approvals, but they have no resources and no tracking mechanism so months go by. - Con Ed should need to know the Amperage of the system and that's it. They waste more resources just trying to get then to cooperate. - Thye have no standards about labeling and every engineer insists on his or her preferences.

NYC DOB	If there is construction involved then there is building permit filing	Most systems are ballasted, meaning they do not require dunnage or steel supports on the building. Instead, the pieces are assembled on the roof. There is no building. Despite that, every system has to be inspected by the DOB and Signed off within the BIS. The drainage on the roof needs to be drawn in elevation and plan. We aren't changing the roof.
NYC Electrical	Is the Electrical Code Being Followed	The DOB Electrical inspection is the only one that makes sense.
NYC Finance	Can we process the Tax Abatement	Finance determined everything had to be done by 12/31 regardless of other delays from other authorities. Finance requires licensed professionals to fill out all administrative paperwork.
Crane Permits	Safe Permit issuance	No permits issued in NYC after November 13th
NYC Energy Efficiency	I don't see why this is related to Solar or other Renewables?	Has to be filled out and filed by Architect

Real problem with the Dept of Finance:

1) Requiring Licensed Professionals to file unwarranted administrative paperwork raises costs by thousands.
2) The definition of the job being done by 12/31 requires everything to be done including Con Ed by the 31st of December but there is no accountability for timing. You put contractors at risk for their business if I tell people we can offer 20% but can't get all paperwork in by 12/31. You cannot offer the tax abatement after June. I am liable even at that – very unrealistic program.

The portal needs to be engineered to reduce costs, not just provide a centralized reference. NYSERDA has that now, Con Ed has it, DSIRE.org has detailed program and tax incentives for every state, and NYC.

The City Council can act as steward of our environment best by lowering the cost of installing solar and publish tracking number such as for each of the above authorities, can we get a public accounting of how many systems are in process and how long are they in process. Faster throughput will act as a lower tax would – systems will be installed at lower cost and done faster which means more can be installed in NYC. DG is important too because it represents about 80% of the PV production and it only requires reaching 20% of the rooftops. To reach the residential, I propose letting PV installers submit one system that is representative of residential installs below 10kW that can be kept "on file" with the DOB. Right now, we see resident after resident turn down the opportunity for solar because of the inflated costs supported by the inefficiency of those authorities. The inefficiencies add costs in every case.

FOR THE RECORD

TESTIMONY OF TERENCE O'BRIEN BEFORE THE ENVIRONMENTAL PROTECTION COMMITTEE OF THE NEW YORK CITY COUNCIL ON DECEMBER 17, 2012 FOR INTRO. 887

Good Afternoon: My name is Terence O'Brien; Deputy Director of the Plumbing Foundation of the City of New York, Inc. which is a clearinghouse and educational forum for the plumbing industry. The Plumbing Foundation is a nonprofit association of licensed contracting firms, engineering associations, manufacturers, and suppliers whose mission is to ensure the public health through the enactment and enforcement of safe plumbing codes. I am here today to testify in support of Introduction bill 887, in relation to the creation of a NYC sustainability energy web portal.

Since its establishment in 1986 the Plumbing Foundation has worked diligently to ensure that the plumbing industry has as little a "carbon footprint" on New York City as possible. The plumbing industry has historically utilized environmentally friendly materials and technologies. Solar technology, for heating and hot water,

and geothermal are a part of the next wave of innovation that will help the plumbing industry lessen the City's "carbon footprint" making the City more "green".

The Foundation urges the Council to establish this web portal that will hopefully inform the public on the viability and cost benefits of installing renewable/"green" energy, heat, and hot water systems. However, it should be clearly noted that renewable energy installations must require a licensed NYC professional (depending on the system it may be a licensed plumber, general contractor, or an electrician) when applicable. Most of these installations already require a licensed professional to safely install and file the required corresponding paperwork with the City. Nevertheless, that requirement should be clearly stated, numerous times on this portal, so owners have a clear understanding that most of these systems are not "Do-It-Yourself" and trained professionals with licenses and insurance are required to perform work on these renewal energy systems in New York City to ensure correct installation, leading to more efficient systems, and most importantly public safety.

Testimony of Sergej Mahnovski
Before the New York City Council
Committee on Environmental Protection
December 17, 2012

Good afternoon Chairman Gennaro and members of the City Council Committee on Environmental Protection. I am Sergej Mahnovski, Director of the New York City Mayor's Office of Long Term Planning & Sustainability. I am joined here today by Steven Caputo, Senior Policy Advisor in the Office of Long-Term Planning and Sustainability and Alison Kling the New York City Solar Coordinator at the City University of New York (CUNY). Thank you for the opportunity to testify today about Introductory 887 and the creation of an online Sustainability Portal.

Before beginning my testimony I'd like to take a moment to recognize the leadership that you and this committee have shown on energy and environmental policy over the past decade, and in particular since Mayor Bloomberg released PlaNYC in 2007. It was through your work that the City Council passed the NYC Climate Protection Act in 2007 to codify the PlaNYC greenhouse gas emissions reduction goals of 30 percent by 2030 and to require the production of annual reports on its progress. I'm happy to report that the 6th annual Greenhouse Gas Inventory was published last week and we are now more than halfway to achieving the 30 percent reduction goal thanks to a cleaner electricity supply and the increasing energy efficiency of our City.

Since its founding, the Mayor's Office of Long-Term Planning and Sustainability—which I now direct and which the City Council helped to institutionalize in 2008—has had a strong partnership with you on energy, climate, and sustainability issues. We look forward to continuing that relationship. After all, much work remains to be done as we are entering into the last year of both the Bloomberg Administration and your tenure as Chairman of the City Council's Committee on Environmental Protection.

I have had the opportunity to testify before this committee on two occasions: in November of 2011 on the topic of overcoming impediments to solar energy development, and in June of 2012 on the topic of geothermal energy. I am happy to report some significant progress on both accounts. Last November during our solar testimony, we reported that just over 7 megawatts (MW) of solar capacity were installed citywide and that we were about to enter into the last year of eligibility for the City's solar property tax abatement without certainty of the program's renewal. Since then we have increased capacity by over 60% to reach 11.5 MW in operation, and Con Edison reports that another 12 MW are in the permitting and interconnection phase. We also worked successfully with the State Legislature and Governor Cuomo to extend the City's solar property tax abatement for two years at a level of 10% of total project costs.

The City has also made good progress on the geothermal front. The Department of Design and Construction is just days away from releasing its fully revised and expanded geothermal design

manual, which will set the standard for best practices in the design of geothermal systems in New York City. The Office of Long-Term Planning and Sustainability has also examined a number of geothermal and heat-exchanging technologies as part of our study of strategies to achieve an 80 percent reduction in greenhouse gases by 2050, which the scientific community has identified as the necessary target for global emissions reductions in order to prevent the worst impacts of climate change. The 80x50 study will be finalized early next year and I would enjoy the opportunity to return and discuss the results with you, as well as next steps in evaluating the potential for expanding the use of geothermal heat exchange in New York City

Introductory 887 would require the City to create a Sustainability Portal that will serve as a one-stop website for any party interested in investing in renewable energy systems in New York City. The purpose of such a portal is to retrieve information on local, state, and federal incentives; to help building owners and project developers to more easily navigate the permitting processes; and to provide access to resources that would reduce the time and costs of installation of renewable energy systems.

We agree with the goals and objectives of Intro 887. There are many resources available from all levels of government and non-governmental organizations to facilitate the development of renewable energy systems, but these resources are scattered across innumerable locations and they have not been organized specifically for New Yorkers. Building owners and managers seeking to develop renewable energy and distributed generation in New York City may also be hampered by a lack of sufficient information about a complex permitting and interconnection processes.

As I alluded to before, New York City's annual greenhouse gas emissions are 16% below our base year 2005 emissions – over halfway to our 2030 goal. Yet in order to achieve the remaining reductions needed to reach the 30% target we need higher penetration of renewable energy and distributed generation. A sustainability portal that bridges information gaps has the potential to encourage the private investments at a faster rate. Property owners and tenants will be better able to decide which type of renewable and distributed energy system is most appropriate for their home or business, and they will have an easier time identifying and applying for available incentives. And Developers will be better equipped to navigate the permitting and interconnection process. The sustainability portal concept is in line with the Bloomberg Administration's overall desire to make it easier to do business in New York City.

There are two strong precedents for this type of one-stop shop portal. The first is the NYC Clean Heat website, which can be accessed at www.nyc.gov/cleanheat. As you may know, NYC Clean Heat is a program that seeks to improve air quality and save lives by eliminating the use of heavy heating oil and accelerating the adoption of the cleanest fuels. Although fewer than 10,000 buildings in New York City use heavy heating oil—just one percent of the City's buildings—they contribute more soot pollution than all cars and trucks on the road. In January of 2011, the NYC Department of Environmental Protection issued rules to phase out the use of heavy heating oil by 2030. However, regulation alone is not enough to achieve rapid public health benefits.

For this reason, Mayor Bloomberg launched the NYC Clean Heat program in partnership with the Environmental Defense Fund to provide information, technical assistance, and financing to building owners. Information about all of these resources is available on the Clean Heat website. Users can access extensive technical guidance about how to convert from heavy oil and how to navigate the City's permitting process; obtain information about available incentives and financing; identify the location of buildings that use heavy oil on an interactive map; and much more. The Clean Heat website receives thousands of site visits each month and has a regular pattern of increased use during the workweek which demonstrates that this portal is a valuable tool for the marketplace.

Another strong example of a one-stop online portal is the PlaNYC Green Buildings and Energy Efficiency website, which can be accessed at www.nyc.gov/gbee. Like the Clean Heat website, the Green Buildings and Energy Efficiency website is a one-stop shop for general information, technical guidance, and help accessing financing and incentives. More importantly, the website provides a comprehensive guide to understanding and complying with the Greener Greater Buildings Plan, the City's landmark energy efficiency laws which could not have come to fruition without the work of this committee.

The sustainability portal for renewable energy would be a perfect complement to these other online resources and would play a similarly important role in facilitating market activity through better access to information. The portal could bring together and serve as a single point of entry to the valuable online tools that already exist in this space, including the New York City Solar Map (www.nycsolarmap.com), the Department of Buildings' Development Hub and technical guidance related to distributed generation, NYSERDA's eligible installer list, and Con Edison's customer guides pertaining to system interconnection. Through informing the public of the resources available to support renewable energy systems in New York City we will be able to accelerate the rate of investment needed to achieve PlaNYC's ambitious goals for clean energy and carbon reduction.

Thank you for the opportunity to testify and I'll be happy to take any questions.

SIERRA CLUB

FOUNDED 1892

New York City Group
1115 Broadway, 11th Floor
New York, NY 10010

December 17, 2012

Sierra Club New York City Group Comments to the
New York City Council Committee on Environmental Protection
Re: Int. No. 887

Superstorm Sandy has brought death and destruction to our coastal area. Hurricane Irene ravaged our upstate communities. We have to enact immediately all of the preventative measures that have been deliberated over the past 25 years. This proposed Local Law is a very appropriate response to this manmade climate crisis that we are experiencing.

Will there be sufficient financial resources for a massive all-sector public education and outreach campaigns? Hopefully there will be a very visible media campaign that includes postings in the subway, billboards, television, social media and internet.

PLANYC, the NYC Energy Efficiency Corp., the NYPSC's "unwasteny" and Con Ed have been promoting an increase in gas use thru efficiency programs. Expanding the fossil fuel infrastructure via the Spectra and Transco pipelines and the PJM transmission line, is not consistent with our urgent need to reduce our greenhouse gases. There is also a proposed 1000MW Champlain Hudson Power Express transmission line that might connect Queens to destructive dams that have not yet been built Canada.

The impacts of increasing reliance on outsourced supply must be studied and compared with in city deployment of renewable forms of energy. The creation of jobs within the city and economic revitalization must be assessed as well as the economic losses due to imports. Public procurement through power purchase agreements of locally produced renewable energy provides an opportunity to jumpstart a renewable energy economy.

We must meet New York City's energy needs with renewable resources within the city.

For example, there is over 5000MW of solar energy potential from NYC rooftops while there is only 8.5MW of installed solar - there is also solar energy potential using parking lots, roadways, streetlights etc. Other forms of renewable energy such as geothermal, solar thermal, wave technology, run of the river systems are all compatible with our urban habitat.

The proposed NYC Sustainability Portal interactive website for sustainable energy will provide a much needed consolidation of information. There are numerous websites that contain valuable information that do not connect with each other such as NYSERDA, unwasteny, US Dept. of Energy Sunshot Initiative and Resource Center, DSIREUSA, NYC Solar Roofs.

The rapid deployment of renewable energy will be greatly facilitated by Intro.887.

Thank you for the consideration of these Comments.

Annie Wilson

Energy Committee Chair
1.212.388.9780

The New York Solar Energy Society
5270 Sycamore Avenue
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917 974 4606

December 17, 2012
The New York City Council Committee on Environmental Protection
Testimony
Proposed solar website for NYC

Thank you for inviting me. My name is Wyldon King Fishman. I am speaking on behalf of the New York Solar Energy Society (NYSES). NYSES is a 501(c)(3) since March 2008 with a mission to educate children, families and teachers about energy efficiency and renewable energy. We serve as a resource for sound technical information.

NYSES is a chapter of the American Solar Energy Society which is a chapter of the International Solar Energy Society. We are more academic than business to business.

The City's blueprint for the solar website

Beginning with Section 1.

Using renewable energy will not mitigate climate change. We need a crash course in eliminating burning fossil fuels. Climate change is caused by burning too much and stuffing our atmosphere with pollutants like carbon dioxide. Our buildings are using too much fuel and you can see this with the windows left open on the upper floors. Our automobiles and trucks are burning too much fuel as they run on inefficiently powered gas engines. The heat given off by gas engines is indicative of wasted energy.

The way to stop the wasteful burning of fossil fuel is by sealing or weatherizing our buildings, re-cladding them and insulating them. We need to add solar site orientation requirements into the building code so future buildings are zero energy dependent in the first place. Let's build the energy factory into the building. We shall not be mitigating climate change if all we do is invest in solar panels. Most consumers do not know they should first focus on energy efficiency, sealing buildings, insulating at R 56 for the roof and R-22 for the walls. And, then after cutting energy usage to the bone investigate least cost solar such as solar heat, solar hot water and solar cooking. Even awnings and shutters are extremely effective means of dropping the energy usage of a building.

Most apartments have air conditioners hanging out of the windows in the winter. Stopping the wind from stealing the heat is the key to a building burning less fuel. Caulking around baseboards and pipes is a great start. It's our leaky buildings that are causing climate change. Also, a super insulated building does not need much heating or cooling. A truly energy efficient building can produce more energy than it uses, clean its own water and air and be extremely comfortable to live or work in.

Many New Yorkers rent. Landlords collect rent and automatically add utility increases to the rent. How can landlords be incentivized to cut their building's burning of fuel?

The proposed website outline mentions the site should have information on **"geothermal" or ground source heat exchange.** It is fifty-four degrees under this building. That's pretty warm in

winter and pretty cool in summer but, it is important to know we live in large buildings with small footprints and there is not always enough ground under one large building to have enough ground source heat exchange wells. Each well picks up heat in summer and gives that heat back to the building in winter. A weatherized and insulated building needs far less ground source heating and air conditioning.

The proposed outline mentions listing approved **solar installers**. Do we have a special certificate required by New York City for PV installers? Is it the job of the city to list "approved solar installers" and to be required to update the website only every three months?

The proposed outline mentions **listing permitting agencies**. Installers need to know how permits are issued and how to navigate and, unless you envision the homeowner installing solar panels and needing to navigate the process, the installer has to do this as part of their job and training. This is what the installer is trained to do: Draw up the plans. The installer has to know how new the roof is and comply with the fire department regulations. The electric company has to come out and meet with the installer. Currently, NYSERDA gives an installer a certificate upon completion of the solar installer proficiency tests and upon completion of three free installations. (The requirement of working for free on three installations is very onerous on master electricians and master plumbers.)

The proposed outline mentions **solar calculators**. Homeowners need a basic chart rather than utilizing the many solar calculators out there. The rule of thumb is 100 square feet of roof space = 1 kilowatt of solar electricity = $10,000. In New York City permits and inspections can require an expediter so, even though the price of solar modules has come down, costs have not come down as much as in other municipalities. To take advantage of the solar rebates, incentives and taxes, pictures have to be taken of the roof location including no trees or structures blocking the arc of the sun in both summer and winter. An installer knows best how to document the installation.

New York City has the oldest grid in the world. If you make solar electricity and send it to the NYC grid, it can shut the grid down. There are sensors and equipment which look for electricity coming from the wrong direction and shuts the section down. Community solar is limited by this as the warehouses with the sunny roofs need to be connected to where the homes have the trees and shade.

The proposed website mentions **LEED**. It is not a good idea to assume energy efficiency with LEED because LEED buildings do not measure energy usage. Passive House and Zero Energy building techniques measure energy with excellent rating systems.

Financing would be one area for the city to create a page for more information. We would like to see a treatment of Property Assessed Clean Energy (PACE), on bill financing, market-based SRECs, Payment for Power Produced Feed in Tariffs, leasing, Power Purchase Agreements (PPAs), and, also, include banks. Please include a glossary of terms such as escalating clauses and service contracts.

The German success of renewable energy installation was driven by three initiatives: 1) an 800 number for more information, not a website. Two, the Germans had the money for a big media push. And, three, they had k – 12 education. It takes one week to get a solar system. On top of this the utilities pay a little more for solar power produced so the systems are very easy to finance. The amount paid by the utilities for the energy produced is reduced a little at a time.

Each time the rate drops purchasers rush to take advantage of the higher rate. All this solar has saved the utilities more than twice their expenditures. This is called the merit order effect.

Many solar companies are waiting in the wings to enter the NY solar market. The juggernaut surrounding permits and financing dampens the demand for renewables. On top of these difficulties one building owner said he was afraid of vandalism such as spray paint. Another building owner said he had low demand side management electricity rate from Con Edison if he would shut down his factory when they needed the electricity. Another company is paid considerably high rent by Con Edison for a space for a large generator. We continue to burn fossil fuel and create point source pollution and heat on a hot summer day instead of peak shaving with clean renewable energy.

In order to promote the transition to clean renewable energy we need to correct worker compensation rates. Last session the legislature neglected to pass a bill establishing the rate for solar installers similar to linemen and tree climbers. The insurance companies are charging 25% rather than the more customary 6% – 10%.

Our energy demand is loaded with waste. Climate action plans need to focus on undoing the dependency on burning the carbon based fuels stored for millions of years underground. We certainly need more engineers. Sixty thousand are retiring this year. Today's students need the tools and the rigorous math to help engineer the energy future. They are the ones who will design low energy solutions for buildings and transportation.

Super Storm Sandy showed us how we have built up vulnerable areas and put families in harm's way. Zoning remains contentious. Insurance companies may have new requirements. Our political leadership can push through very innovative building codes and jump start the transition to electric vehicles powered by electricity from wind and solar. With education, a media campaign and accessible financing, we can decentralize our grid, employ thousands to build a new micro grid infrastructure and end our dependence on a carbon based economy.

Lastly, as mentioned in the website proposal, NYSES maintains an **easy to understand** website. Our NYSES website has links to almost of all the information you intend to cover except the agencies and installers.

In closing, most people think they have tons of sun on their building. They are living in buildings where the wind steals the heat and the air conditioning. Sealing those drafts is far more critical to curtailing climate change. Reducing the load is key. And, just as a rule of thumb, if a building has an elevator, there is not enough room on the building to make enough electricity to run an elevator. At NYSES we reply to many questions dealing with all of these issues and, unfortunately, misconceptions. Our teachers need better training to feel confident about the science behind climate change as well as renewable energy.

Thank you for your attention. If there are any questions today or in the future, we are here to guide you.

Damascus Citizens for Sustainability

A simple consideration of the importance of leaks of natural gas.

Bryce Payne, PhD----December 2012

Commercial natural is almost entirely methane.

Methane is a potent greenhouse gas (GHG). The accepted minimum relative GHG strength of methane is 20 times greater than that of carbon dioxide.

So, if methane is 20 times stronger than carbon dioxide as a GHG, and all the gas that reaches its destination is burned to carbon dioxide (and water), then how important are gas (methane) leaks from the natural gas production and delivery system?

We can restate that methane as a GHG is 20 times stronger than carbon dioxide by stating that it only takes 1/20 or 5% as much methane to cause as much atmospheric warming as a quantity of carbon dioxide. So, if the gas that makes it to its intended destination and is burned it will form carbon dioxide, then its original form (as methane) does not matter since it is now carbon dioxide. However, if only 5% of natural gas escapes as it moves from within the earth through the production and delivery system, that 5% will have as much GHG impact as the other 95% burned as fuel. In fact, it will have an even more disproportionate impact because a substantial portion of the energy from burning methane is due to the hydrogen present in the methane. So, the methane being burned at the end of the delivery system will actually produce less carbon dioxide than this simple approach suggests, with the consequence that leakage of 5% of the gas causes more GHG impact than all the gas that is not leaked and is burned by the consumer.

So what? This suggests the role of leakage from natural gas systems has a more substantial role in climate change than has been appreciated. Apparently present provisions in utility regulations allow gas companies to charge their customers for up to 2% of their handled gas volume as lost and unaccounted for gas. Presumably this applies to each sector in the gas system separately. That is, the gas production companies can lose 2% and charge their customers for that loss, as can the gas pipeline and the gas utility companies. So, these charge backs allow gas companies to disregard, in fact, profit from losing up to 2% of the gas they handle. Adding up the production, transport, and distribution sectors, presumably up to 2%+2%+2%=6% of gas could be lost by the gas companies and they could still collect all related costs and profits for that lost gas, while it contributes more to global climate change than the gas these companies actually ultimately delivered to their customers. So, this regulatory system actually promotes GHG releases at potentially more than twice the rate due to burning of the delivered gas, allows the gas companies to collect revenues for the gas causing the additional climate effects, and has no provisions by which the costs of the climate impacts can be collected from the gas companies, that is, those costs will also be paid as an additional indirect cost by gas users and non-users alike. This seems to bring the objective and effectiveness of current gas utility regulations into considerable doubt.

City Council hearing on the Sustainability Portal

Focus should be on true sustainable and renewable fuels and how to minimize the City's impact on the global environment. I am speaking here as representative of Damascus Citizens for Sustainabilty, based in the Delaware River Basin - the place most of your water - your wonderful CLEAN water comes from. The conflux of fossil fuel energy sourcing, water, - -and air, also, has been shown repeatedly to yield local environmental damage, and global impacts - local impacts to water, air, land use to global impacts from the carbon released. Where will New York City be when the sea level rises to the place where Hurricane Sandy levels were? This WILL happen unless a radical course change is made. Not a talking change - real change.

Questions are:
Why are we not looking at the total cumulative impacts before we embark on a massive building project to welcome additional fossil fuels to the City? If we don't look, do the cumulative impacts disappear?

How long will the current relatively low subsidized price of natural gas last? What happens when it goes way up again? Can you only consider the "market" price? What is the total price? adding all the damage where the drilling is taking place to water sources, to the value of the homes, businesses, roads and to people's lives (What are they worth?) and where will clean water come from in the future? ...and food? Plants don't grow in chaotic weather - What are you going to eat?

How do the current structures function - the pipelines, meters, etc that are within the City? Are they leaking? how much? Damascus Citizens, a tiny environmental group, did what no large group or ConEd has done - we looked! ...and have a report showing a pattern of generalized leakage resulting in an overall elevated baseline in Manhattan of the main component of natural gas. This component, methane, which is at least 20 times the greenhouse heating potential of CO2, is coming out of vented manholes - much less explosive that way, but a big pollution component. Is this a sustainable way to go?

What should we be doing? Instead of encouraging the investment of millions of dollars to bring MORE of an economically fragile and dangerous supply of an explosive fossil fuel into NYC, why is the City not encouraging the switch to renewables? - through all the tools it has - including the persuation of it being the RIGHT thing to do? This can be done - completely running on renewables by 2030, but only if we start and don't just dig ouselves in deeper. Final question:Are we willing to pay the full future price of this "cheap" fuel?

Study: By 2030, world can run on renewables

by Candace Lombardi

http://news.cnet.com/8301-11128_3-20029784-54.html#ixzz1CIUeLdjn

Scientists from Stanford University and the University of California at Davis have crunched the numbers and come up with a plan for how the world might economically and feasibly make the move to renewable energy in the next 20 to 40 years.

In a two-part paper (Part 1 PDF[1], Part 2 PDF[2]) published in the journal Energy Policy, Mark Z. Jacobson and Mark A. Delucchi show in great detail the who, what, where, and how of implementing a renewable energy-run world. It includes solutions to economic, material, and transport issues.

Jacobson, an atmospheric scientist and professor of civil and environmental engineering, is director of Stanford's Atmosphere/Energy Program and senior fellow at the Woods Institute for the Environment and the Precourt Institute for Energy. Delucchi is a research scientist with a background in economic, environmental,engineering, and planning of transportation systems at the Institute for Transportation Studies at U.C. Davis.

This latest study is an in-depth analysis of a plan originally put forth by Jacobson and Delucchi and published in the November 2009 issue of Scientific American[3].

The most interesting determination made as a result of the team's due diligence to the world of energy creation and use was just how much energy the world wastes producing and transporting other energy.

The scientists estimated that the world could reduce its overall energy demand by as much as 30 percent just by transitioning away from combustion processes to more efficient electric processes for producing energy and hydrogen fuel cells.

Jacobson and Delucchi claim that the world's energy could be originated from 50 percent wind, 40 percent solar, 4 percent geothermal, 4 percent hydroelectric, and 2 percent wave and tidal power. They also agree that financial incentives and management systems aimed at conserving energy during peak demand times would be key.

Much of the plan revolves around the use of electricity and hydrogen fuel cells. That hydrogen would be produced by electricity which could be generated from wind and solar power.

The duo breaks down, step by step, which energy would be most efficient for a given use and how their idea of a world using renewable energy could work:

- Vehicles, train, and boats would run on electricity and hydrogen fuel cells.
- Airplanes would run on liquid hydrogen.
- Home heating and cooling systems would run on electricity.
- Hot water would be heated by solar.
- Commercial processes would run on a combination of electricity and hydrogen.

They address the intermittent nature of wind and solar in their planas well. The study determines that wind and solar really could provide for the bulk of the world's electricity production needs as long as they were connected to a grid with non-variable supplements like hydroelectric power.

But all of this change hinges on one very big component being successful. It's a recommendation that will likely have smart grid hardware and software executives dancing in their chairs when they read about it:

"With a system that is 100 percent wind, water and solar, you can't use normal methods for matching supply and demand. You have to have what people call a supergrid, with long-distance transmission and really good management," Delucchi said in a statement.

The plan drills down into what it would really take to for implemention including: the number of wind turbines and rooftop photovoltaic cells that would have to be manufactured; how many geothermal, hydroelectric, tidal and wave energy, and solar plants would have to be built; how much of each earth element would need to be sourced and mined; and the costs of transmission and kilowatts produced by each source.

"The actual footprint required by wind turbines to power half the world's energy is less than the area of Manhattan," said Jacobson.

Jacobson noted that most wind turbines could be placed offshore, and that others could be implemented on land already used for agriculture as is already the case with many large-scale land wind projects in theU.S.

Jacobson and Delucchi have created an online interactive presentation[4] that explains some of the details of their proposed plan, as well as several other detailed reports, presentations, and a spreadsheet detailing their calculations (Excel file[5]). They can be found here[6].

Links:

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[1] http://www.stanford.edu/group/efmh/jacobson/Articles/I/JDEnPolicyPt1.pdf
[2] http://www.stanford.edu/group/efmh/jacobson/Articles/I/DJEnPolicyPt2.pdf
[3] http://www.scientificamerican.com/article.cfm?id=a-path-to-sustainable-energy-by-2030
[4] http://www.flypmedia.com/issues/plus/23/#1/1
[5] http://www.stanford.edu/group/efmh/jacobson/Articles/I/WWSEnergyPolicy-Spreadsheet.xls[6]
http://www.stanford.edu/group/efmh/jacobson/Articles/I/susenergy2030.html

Jacobson - Delucchi **Study: By 2030, world can run on renewables** Scientists from Stanford University and the University of California at Davis have crunched the numbers and come up with a plan for howthe world might economically and feasibly make the move to renewable energy in the next 20 to 40 years. http://news.cnet.com/8301-11128_3-20029784-54.html#ixzz1CIUeLdjn

The U.S. Geological Survey took a look at some earthquakes that occurred in the vicinity of Youngstown, Ohio, in proximity to deep-well fracking. They found that the seismic activity was most certainly manmade—and there was no manmade activity in the area except fracking. Read more at: http://phys.org/news/2012-12-boom-domestic-natural-gas-production.html#jCp

Fluid and chemicals have leached into groundwater at 421 fracking waste pits in New Mexico. What they cannot dispute is that a peer-reviewed study by Duke University linked methane in people's drinking water wells to gas-drilling operations in surrounding areas. What they cannot dispute is a University of Colorado study published earlier this year documenting that people living within a half mile of fracking and other gas-drilling operations have an increased risk of health problems, including cancer from benzene emissions. Read more at: http://phys.org/news/2012-12-boom-domestic-natural-gas-production.html#jCp

http://www.indybay.org/newsitems/2012/11/21/18726145.php **Climate meltdown: Global Warming heading towards 6 degrees C warns World Bank**

Price WaterhouseCoopers report warned that Business as usual Carbon emissions heading towards 6°C (10.8°F) of global warming this century.

A report published in Nature Climate Change in June projects that on our current emissions path, the sea level will rise 40 inches by 2100 and 7 inches per decade thereafter. At that rate, the sea level would hit the Hurricane Sandy proportions of 9 feet around the year 2200; the five foot rise will occur in just over a century. The same paper notes that even if global warming is held to 2 degrees Celsius, there's a 50 percent probability that the sea level will reach 9 feet by the year 2300—much further out in time.
http://thinkprogress.org/climate/2012/06/26/506225/three-new-studies-on-sea-level-rise-make-clear-we-must-act-now/?mobile=nc

Damascus Citizens for Sustainability

Report on a Preliminary Investigation of
Ground-Level Ambient Methane Levels in
Manhattan, New York City, New York
[This is an initial report subject to revision.]

16 December 2012

Robert Ackley and Bryce F. Payne Jr., PhD
Gas Safety, Inc.
Southboro, Massachusetts

BACKGROUND

There are serious environmental concerns with the development of shale gas and the related new gas industry infrastructure, and recent investigations have raised concerns about the role of cities in assuring the public and environmental safety of natural gas use. In cities gas will be distributed and delivered through existing and new gas lines, almost all buried under city streets and sidewalks. In most U.S. cities the gas lines have been in place for decades. Consolidated Edison, Inc. (ConEd) in New York City, for example, has been installing gas lines underground since the early 1800s and now has a system of 4320 miles of gas pipe.[1] ConEd has installed pipes under almost every street or sidewalk in their service territory (except northern Westchester). The ConEd gas system in the 23-square mile service area in Manhattan delivers gas through 336,000 customer gas meters. All underground pipes, as in the ConEd gas system, are subject to stresses and strains of corrosion, and physical damage during excavation or due to natural forces. It follows that such extensive, complex and largely aged pipe systems will have maintenance requirements and will develop leaks and other problems that have to be managed to prevent explosion hazards and property damage, e.g. to urban trees, and to assure public and worker safety.

In addition to the more obvious concerns about safety, (such as explosions and wasted gas) there is an additional concern that arises from the fact that commercial natural gas is almost entirely comprised of methane. This naturally occurring gas is formed deep in the earth during the geological processes that form oil and coal, and near or at the earth's surface by biological processes, like decay of sewage, or in the gut of mammals. Until recently, CO2 has received most of the attention as a problematic greenhouse gas; yet now there is an increasing awareness of the role of methane, which has an unusual potency as a greenhouse gas. Depending on how it is calculated, methane is 20 to 100 times more potent as a greenhouse gas than carbon dioxide.[2] However, because

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[1] http://www.coned.com/PublicIssues/PDF/GLRP1210c.pdf

[2] Differences in the greenhouse potency of methane compared to carbon dioxide arise from differences in how long these two gases typically remain in the atmosphere. Once released into the air both methane and carbon dioxide are removed relatively slowly, but carbon dioxide disappears about ten times more slowly than methane. Consequently, if compared on a ten-year time frame the

RESULTS

The surveyor was driven over 160 miles of selected roads in Manhattan from 27-30 November and 9 December 2012 (see Images 1-5). Methane measurement functions were normal during the survey. However, in some areas in Manhattan tall buildings block GPS satellite signals. Consequently GPS data was intermittent, with deviations from actual driven paths apparent in the visualization of the data in the Google Earth images in this report. Loss of GPS signal caused the plotted survey course in the images to appear to occasionally randomly curve off roadways (see Images 1-5). Those random deviations are minor location errors in the plotted survey course, had no functional connection or impact on the methane data, and did not impact the reliability of the methane leak survey. The survey generated over 700,000 methane measurements, and associated numbers of time and location data points. Those data are presented visually in Images 1 through 6 in this report.

During the survey the periphery of the island was driven at different times. Also, the surveyor was intentionally left on during GSI travel from and to Southboro, MA. The data collected on the cross-country drives from and to Massachusetts provided reference methane levels for comparison to those measured in Manhattan (see Image 6 and DISCUSSION below). Methane levels measured along the upwind periphery of Manhattan were similar to those measured on the cross-country drives.

Images 1-5. Results for each day of the methane survey of ground level ambient air in Manhattan on 27-30 November and 9 December 2012. The height of the red line (curtain) indicates ambient air methane levels (in ppm) 1 foot above the road surface along the survey course. One or more peaks are labeled with the associated methane level (in ppm) to provide scale. The viewer should be aware of the perspective in the images, i.e., similarly sized peaks will appear smaller at visually more distant areas of Manhattan in the images.

Image 6. Preliminary gas leak survey of Manhattan 27-30 November 2012 and 9 December. This image provides a visual impression of the relative levels of methane in ambient air in Manhattan compared to levels on open country highways travelled to and from Manhattan. The height of the red line (curtain) indicates ambient air methane levels 1 foot above the road surface along the survey course. One or more peaks are labeled with the associated methane level (in ppm) to provide scale.

DISCUSSION

The survey indicated that natural gas leaks are occurring generally throughout the Manhattan Borough (see Images 1-5). This preliminary study was more intense in some southeastern and southern parts of Manhattan. Leaks appeared more common in those areas. A more thorough study would be necessary to definitively discriminate areas that may have more or larger leaks than other areas. The preliminary investigation

results indicated hundreds to thousands of likely leaks in the surveyed parts of Manhattan.

Six methane (natural gas) leaks were tested by inserting a gas probe approximately 6 inches through a valve box cover, pre-existing drill holes, or accessible manhole opening. All of these were likely Grade 2 leaks (in need of repair but not posing immediate danger of explosion) with combustible gas concentrations at the tested locations as follows: 0.35%, 15%, 55%, 55%, 67%, and 70%. Determining the exact location of a leak requires excavation of the probable leaking gas line until the exact location of the leak or leaks is determined. Such efforts were beyond the scope of this methane survey.

Image 6 was prepared from the survey data to provide a visualization of the potential relative importance of the methane leakage from the gas system in Manhattan on a regional atmospheric scale. Further work is needed to determine whether an approximate estimate of the amount of methane being released to the atmosphere can be developed from the data generated by this preliminary methane survey. For this initial report the following table presents a brief comparison of two randomly selected one-hour data sets for Manhattan and an open country drive. The methane measurements in Manhattan indicated many leaks (8.44% of all measurements were >2.5 ppm), some intense (measured levels up to 47 ppm), and almost no measurements at normal background methane levels (only 0.05% of the measurements were ≤2.0 ppm). In contrast, in the open country data, 86.37% of the measured methane levels were ≤2.0 ppm and only 0.03% in a range indicating substantial methane leaks or sources in the vicinity of the measurements.

Date-Time	1129-1959Z	1127-1514Z
Location	Manhattan	Open Country
Methane (ppm)		
Max	47.200	2.484
Mean	2.186	1.858
Min	1.897	1.787
Distribution of measured methane levels		
Total # measurements	13215	13101
% ≤ 2.0 ppm	0.050	86.370
% > 2.5 ppm	8.44	0.03

Work is planned for further analysis and interpretation of the data produced during this preliminary investigation. This report reveals the need and provides a foundation for additional work to better evaluate the apparently substantial amounts of methane being released into the atmosphere from pipeline leaks in New York City.

Image 1. Results of methane survey of parts of Manhattan on 27 November 2012

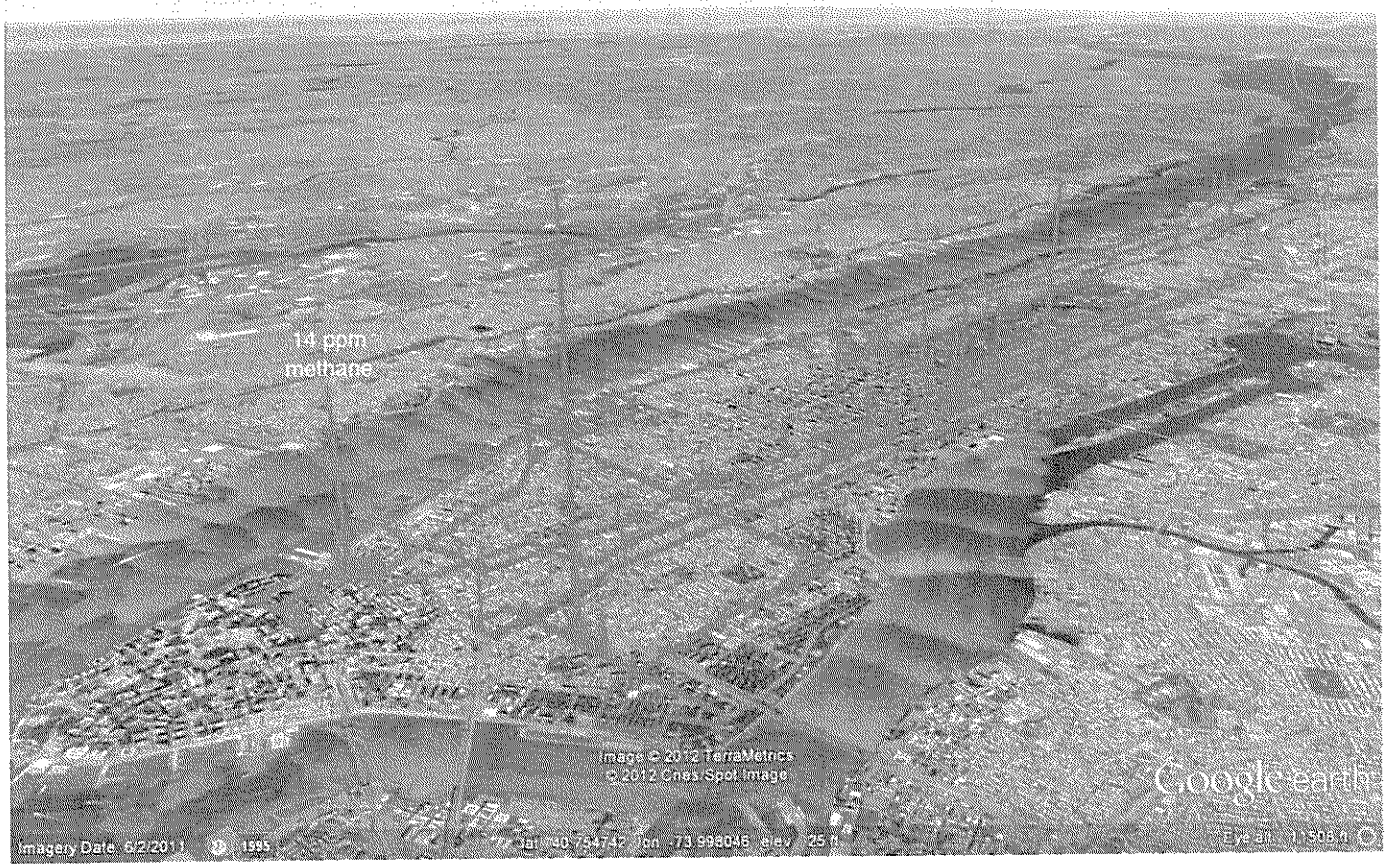


Image 2. Results of methane survey of parts of Manhattan on 28 November 2012

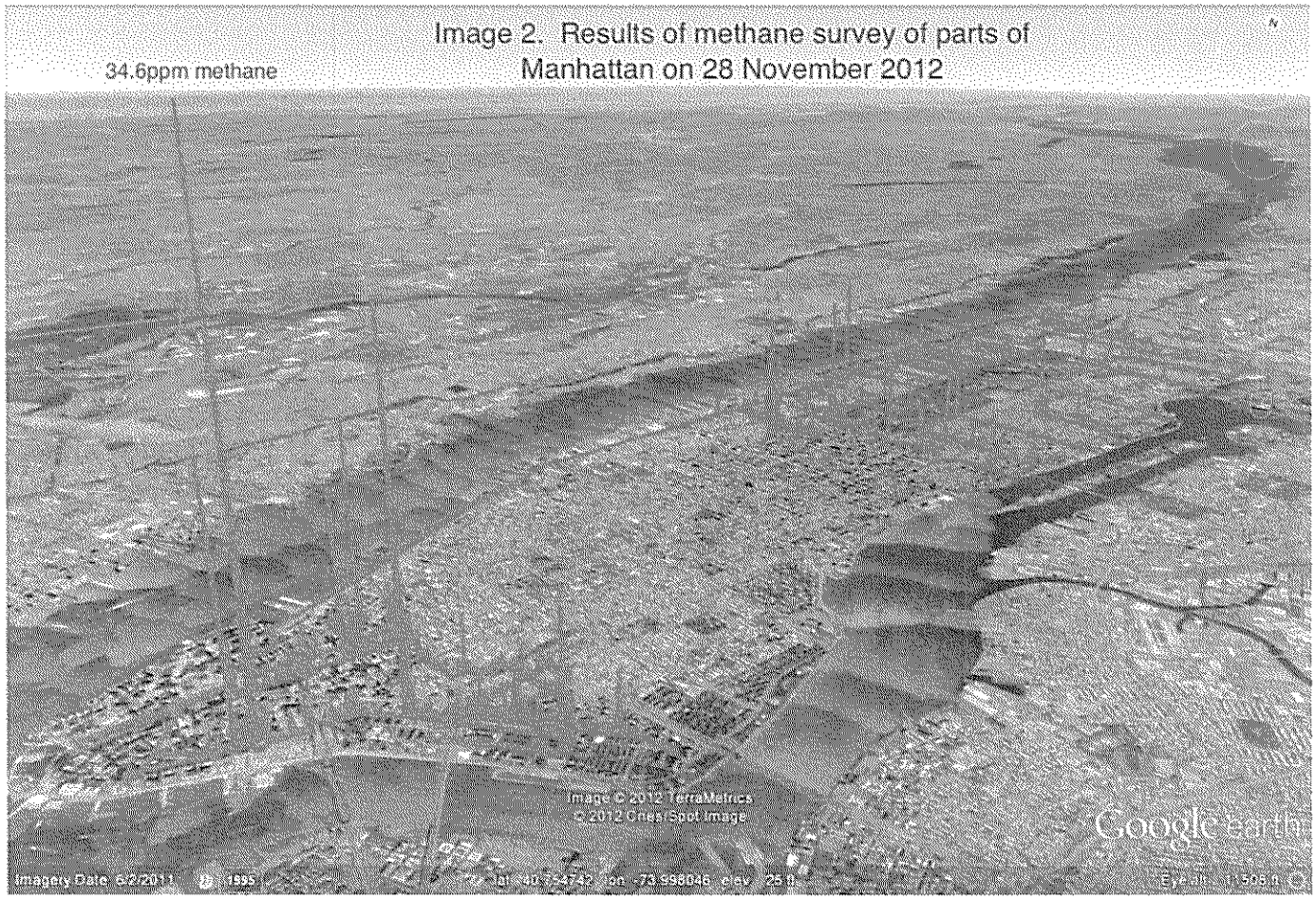


Image 3. Results of methane survey of parts of Manhattan on 30 November 2012

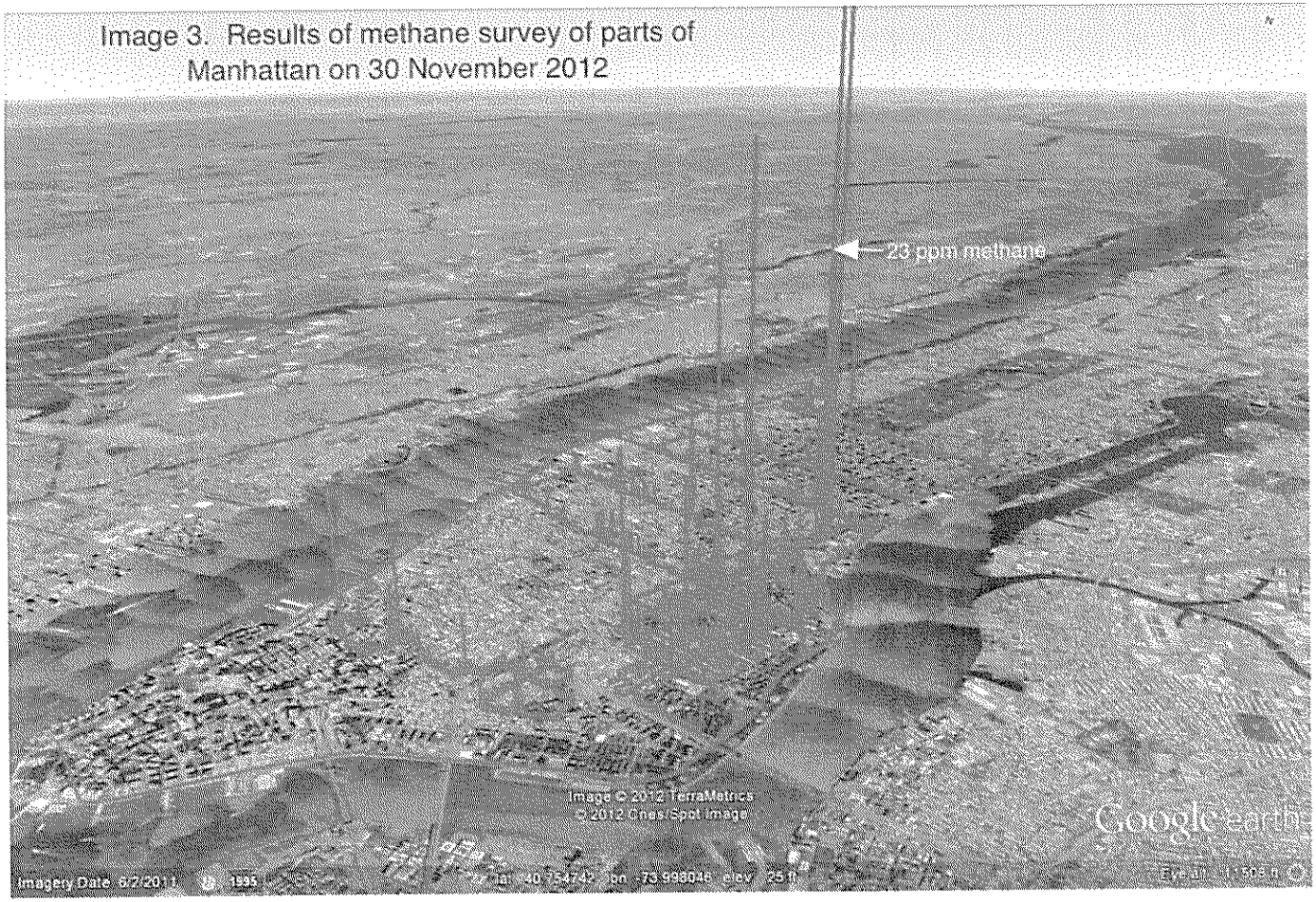


Image 4. Results of methane survey of parts of Manhattan on 30 November 2012

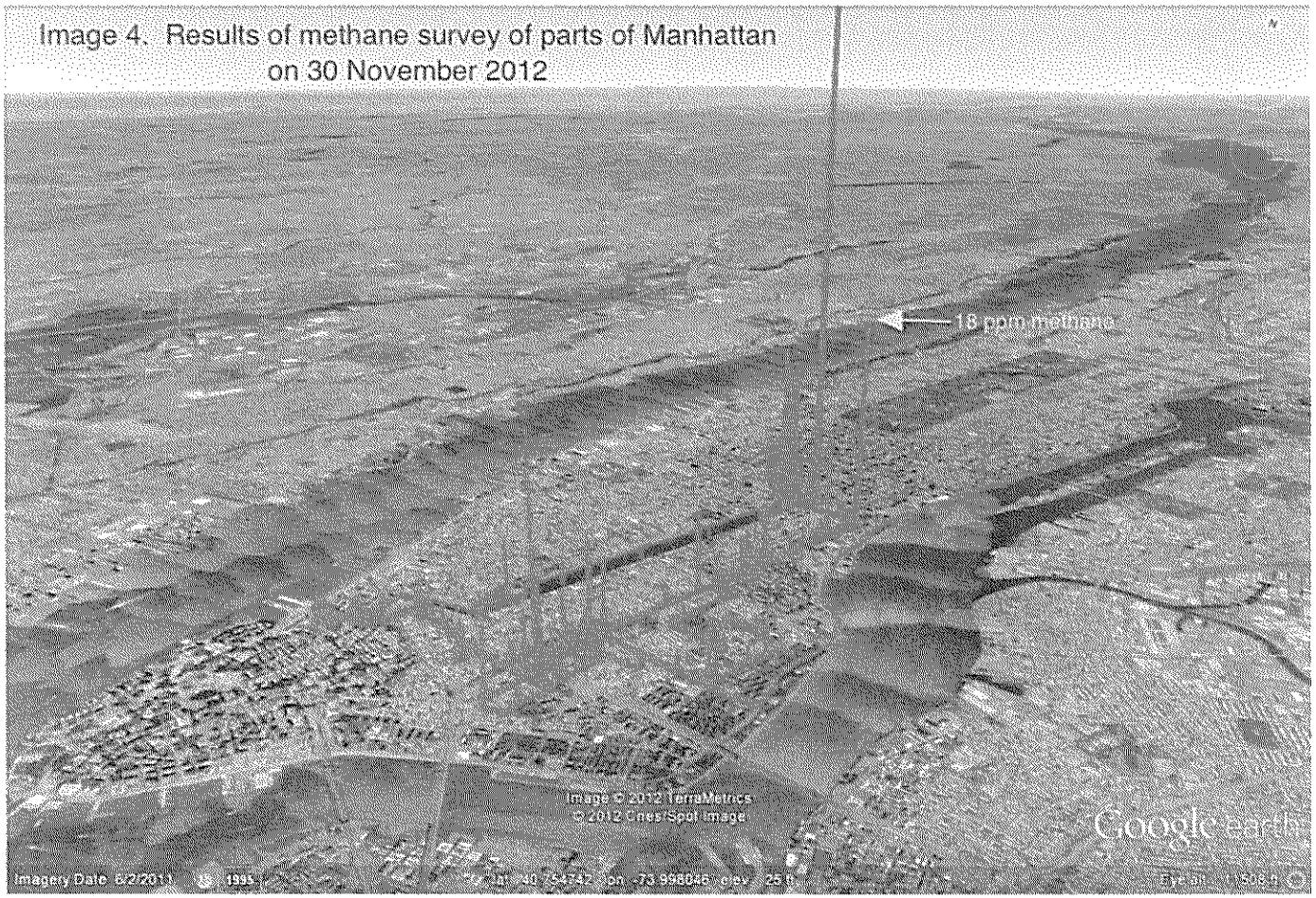
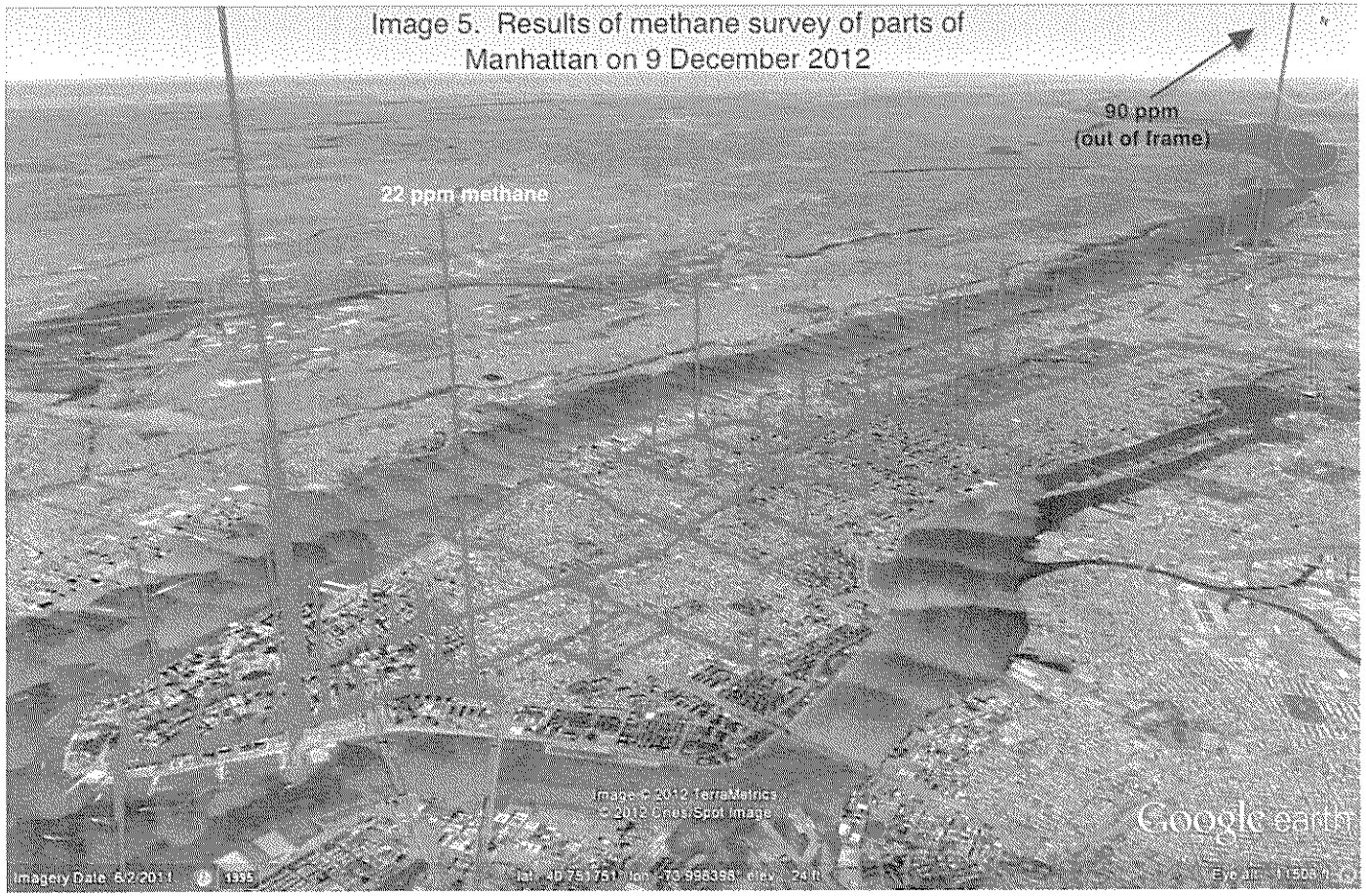


Image 5. Results of methane survey of parts of Manhattan on 9 December 2012



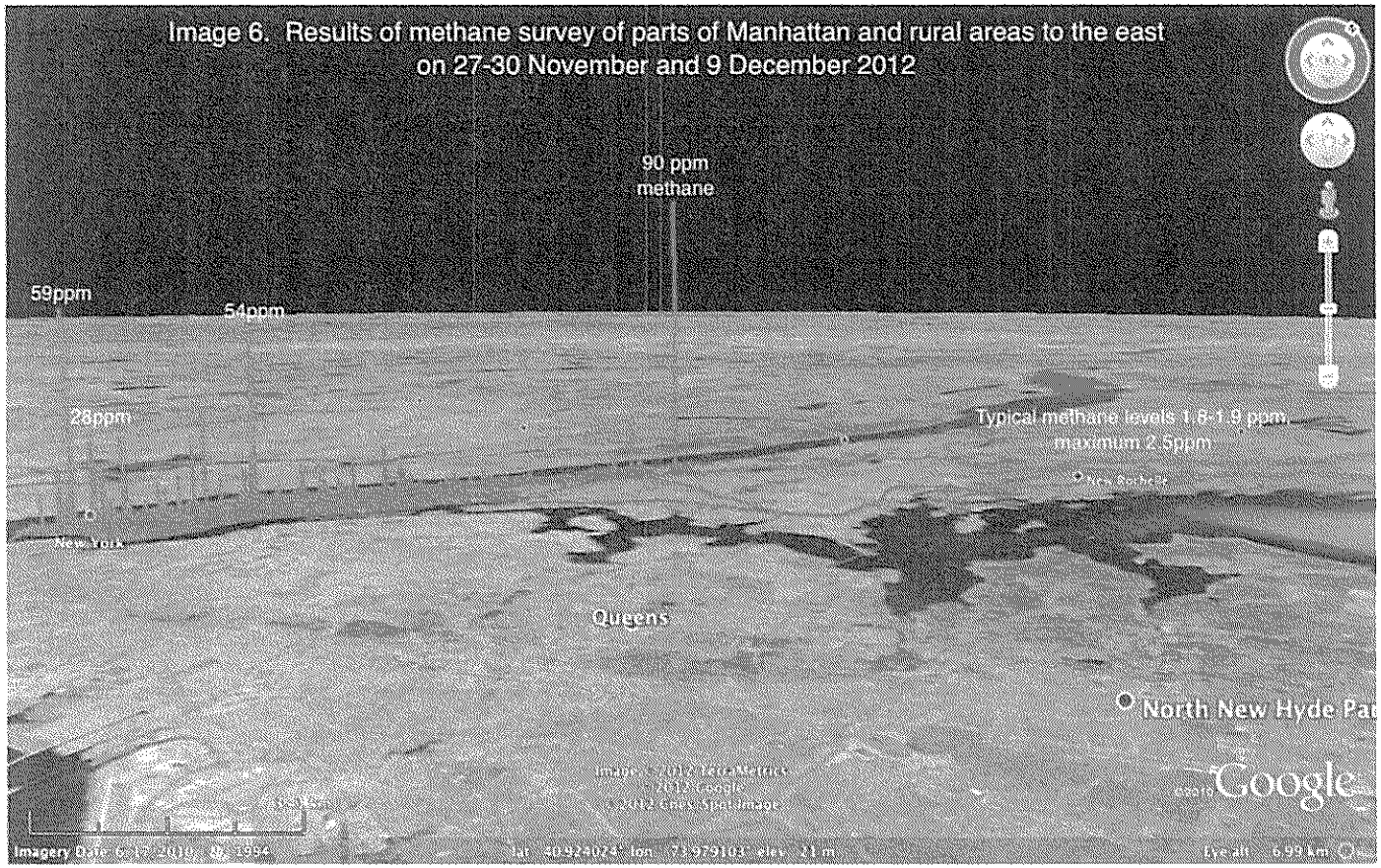


Image 6. Results of methane survey of parts of Manhattan and rural areas to the east on 27-30 November and 9 December 2012
90 ppm methane
59ppm
54ppm
28ppm
Typical methane levels 1.8-1.9 ppm maximum 2.5ppm
New York
Queens
North New Hyde Par
Google

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I represent: _____

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Name: KEN GALE

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I represent: ECO-LOGIC, WBAI-FM

Address: 120 WALL ST NYC 10005

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Name: Wyldon King Fishman

Address: 5270 Sycamore Ave, Bx NY 10471

I represent: New York Solar Energy Society

Address: 5270 Sycamore Ave Bx NY 10471

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