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## Minutes of the EMC

**Date:** April 14, 2016  
**Time:** 4:00pm  
**Location:** Old Jail Conference Room, 125 E. Court St.

*Attendees:*

Name		Representation
Steve Bissen	E	Town of Dryden
Kenny Christianson	A	At-Large
John Dennis	P	Village of Lansing
Brian Eden	P	Village of Cayuga Heights
Bill Evans	P	Town of Danby
Pegi Ficken	A	Town of Groton
John Hertzler	P	Town of Ulysses
Jim McGarry	P	At-Large
Vladimir Micic	P	Town of Ithaca
Steve Nicholson	P	Town of Caroline 10

Name		Representation
Susan Riley	P	At-Large
Tom Shelley	P	Ithaca CAC
Linda Spielman	P	Village of Dryden
Ron Szymanski	A	Village of Freeville
Roger Yonkin	P	At-Large
<i>Anna Kelles</i>	<i>P</i>	<i>Legislature Liaison</i>
<i>Dooley Kiefer</i>	<i>P</i>	<i>Associate Member</i>
<i>Jose Lozano</i>	<i>P</i>	<i>Associate Member</i>
<i>Scott Doyle</i>	<i>P</i>	<i>EMC Coordinator</i>

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12 **Guests in attendance:** Lance Collins, Joel Malina, Irene Weiser, Sara Hess, Catherine Wagner,  
13 Marie McRae, Joe Wilson, Ed Marx, Kathy Ruscue, Elmer Erving, Marie Terlizzi.

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15 **Call to Order**– The meeting was called to order by Steve Nicholson at 4:04pm.

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17 **Privilege of Floor** – None

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19 **Presentation: Geothermal Energy as a Path to Climate Neutrality – Dean Lance Collins**  
20 **and Joel Malina**

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22 Brian introduced presenters and provided some background on Cornell committee’s work to  
23 date. Joel Malina, VP for University Relations began discussion by outlining the range of options  
24 that Cornell is investigating for addressing GHG reduction goals as well as campus power needs  
25 in addition to helping others around region, state, and world advance technology that could help  
26 address the same issues. Lance Collins, Dean of the College of Engineering, was then  
27 introduced. Dean Collins discussed the concept of “deep geothermal” as a technology they are  
28 investigating to reduce GHG emissions. He noted that effort for addressing GHG is a campus  
29 wide effort involving key entities such as the Atkinson Center and those involved in energy,  
30 environment, and economic development. All efforts are centered on the key issue of how we  
31 collectively help create a sustainable world. He went on to note that the College of Engineering  
32 has an energy institute to develop technologies for addressing energy demand needs. Dean  
33 Collins stressed that this issue is quite beyond just a discussion of technology, and in fact  
34 requires input from disciplines and professionals from across campus. This is evident in the  
35 diverse senior leadership climate action group that has been formed to address how climate  
36 change affects issues across campus. Dean Collins then went on to speak more directly about the  
37 proposed energy strategy of deep geothermal. He stressed that this type of technology is not  
38 inexpensive and has really not been implemented in the way that Cornell envisions anywhere. He  
39 also referred to this concept as “Earth Source Heat”, a play on Lake Source Cooling. He

1 described traditional geothermal as being implemented in areas where it is tectonically  
2 accessible. These are areas that have easier access than we do. 2-4km is more likely the type of  
3 the deep, dry access that we would need to utilize. This would most likely require campus  
4 transition from steam to much more efficient hot water heating systems. He reiterated that this is  
5 a technology that is not widely available. He indicated that if this proved successful it could open  
6 up geothermal energy to a much broader market option for thermal heating which accounts for a  
7 third or half of the energy we currently use. Adding detail to the concept he indicated that hot  
8 water would be injected into rock, a process referred to as “hydroshearing”, which increases  
9 existing fissures in rock. This would be done in a region considerably below levels where  
10 Marcellus Shale occurs. The water would then be pumped up and put through heat exchanger  
11 and through heat distribution system. Campus currently runs hot steam. If this were pursued they  
12 would have to transition to a hot-water distribution system. He compared campus to a “living  
13 laboratory” where this technology could save energy while also helping to educate the student  
14 base. He outlined that many faculty projects are currently examining the challenges associated  
15 with this concept such as: how far down would we need to go?; And How would seismometers  
16 be deployed to assess potential impacts? Dean Collins indicated that Earth and Atmospheric  
17 Sciences (Geology) is uniquely housed under Engineering at Cornell, which could prove useful  
18 in examining potential impacts. He said that Earth Source Heat is exciting, but they are not going  
19 to rely solely on this technology for addressing GHG reduction. Development of this technology  
20 will require passing of a series of “gates” and it may turn out that this is not feasible, so they are  
21 currently examining other alternatives as well. They are very early in the process and a draft  
22 report will come out September 1, 2016 outlining potential paths. Implementation of technology  
23 not likely closer than a decade out. After this report is finalized, Cornell will then clarify path  
24 forward. They would likely need to drill to get a sense of actual conditions and concerns that  
25 may be related. Dean Collins then opened up for questions. Some of those questions included:

- 26 • Tom Shelley noted he’d like to see Cornell keep steam heating system. He asked if you  
27 could utilize technology and still utilize a steam system? Response from Dean Collins –  
28 maybe, but steam isn’t that efficient.
- 29 • John Dennis asked how much heat loss would occur with heat return? He noted concerns  
30 over boring and leaks between layers and exposure to hydrogen sulfide. Suggested that  
31 the team should look at casing longevity, double cases. New intelligent well casing  
32 technology may help address this. Response from Dean Collins – insulated system  
33 casings, some other systems have addressed this. Tony Ingraffea is an active member of  
34 the team and he has starting looking at these issues and is involved in these discussions.  
35 Discussion after this centered around the need to address issues to reduce methane leaks.
- 36 • Anna Kelles asked about what type of water would go through pipes? Response from  
37 Dean Collins – This would likely be a very simple solution and they will be very clear on  
38 what is proposed. Discussion resulted around differences between hydrofracking v.  
39 shearing. Anna asked if there is any history of concern. Response was that this is a  
40 relative unknown and something that needs a great deal of examination of the potential  
41 impacts. They are currently referencing systems in Iceland and the impacts of drilling  
42 and outreach associated with that. Anna noted that she thought the largest issues related  
43 to this would be chemical use and potential seismic activity.
- 44 • Steve Nicholson asked if this heat source is uniform. Response from Dean Collins –  
45 Resource is relatively accessible than in other parts of the state. Nothing like Iceland or  
46 west coast.

- 1 • Marie Terlizzi asked about how much land would be disturbed and that this sounds a lot  
2 like fracking. Response from Dean Collins– Two big differences between this and  
3 fracking – 1) where doing it...far under Marcellus Shale, not releasing methane, not  
4 going to use proprietary fluids, and 2) They don't anticipate releasing added materials. \
- 5 • Brian Eden then noted that other concerns would likely be NORM.
- 6 • Jose Lozano asked if the geology is well known at those depths. Response from Dean  
7 Collins – some general knowledge, but need to drill to understand in greater detail. Rock  
8 plays a significant role in this process.
- 9 • Jim McGarry asking the clarifying question, Water sent down, runs through rock  
10 correct? Response from Dean Collins – yes, not complete closed loop.
- 11 • Bill Evans asked what is closest location where this has been tried? Response from Dean  
12 Collins - Nowhere.
- 13 • Anna Kelles recommended a closed loop be utilized through methane pockets.
- 14 • Linda Spielman asked if there was any knowledge of the solubles acquired in the  
15 process. Response from Dean Collins– rock conditions different in other areas like  
16 Iceland. We have some knowledge, but much different process than existing geothermal  
17 operations.
- 18 • Linda Spielman further asked if they were surveying other global geothermal work.  
19 Response from Dean Collins – yes, looking at host of options, locations, corporations, in  
20 the process of building those connections.
- 21 • Roger Yonkin noted that oil companies know what's "down there"; are you planning on  
22 access this type of information? Responses from Dean Collins – Currently using this  
23 information, though need to obtain more site specific information.

24  
25 **Changes to Agenda and Approval of Minutes** – Roger moves for approval of minutes, Jim  
26 seconded. Minutes approved with minor changes.

## 27 28 **Committee Reports and Member Questions**

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30 **Energy** – Brian Eden reported on the need to advance energy conservation in new downtown  
31 development projects • Irene Weiser, also in attendance, was referenced as a key player on  
32 advancing efforts to reduce need for added fossil fuel infrastructure • Geothermal Tax Credit is  
33 not included in final state and federal budget, referenced the book *Dark Money* as a good source  
34 for added information • Newfield moratorium considered for wind energy facilities • Given the  
35 second fire at Cayuga Power Plant, further investment in the plant would be unwise for both  
36 plant and ratepayers • Discussion of fires at Cayuga Power and sources • Hope to have  
37 discussion of energy model for CU and Maplewood for a future meeting • Heatsmart is gearing  
38 up for added program next year adjusting for policies out of sync for encouraging geothermal  
39

40 **Environmental Review** – John discussed the fire at Cayuga Power, questions about how it  
41 resulted and how first responders were put at risk due to lack of proper maintenance. Discussion  
42 then resulted of Riesling (buyer of Cayuga Power) and their connection to Blackstone group and  
43 history of buying stressed assets. John then discussed Cargill in relationship to adjacent creek  
44 systems. Streams continue to have significant quantities of salt adjacent to Cargill • John then  
45 discussed opportunities for Cornell research to assist in remediating coal ash landfill • DEC has  
46 now responded to request for addressing issues related to landfill • Added discussion of Kite Hill

1 Slope project, Chainworks EIS and class II hazardous waste site. Anna indicated Chainworks  
2 would be doing development in stages with clean up, great site for potential to redevelop and  
3 clean up • April 22<sup>nd</sup> Black Oak EIS statement comments due • LaBella hired to address school  
4 water testing issues locally.

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6 **Unique Natural Areas** – Linda Spielman reported that the UNA committee did not meet this  
7 month, and have not yet taken an observational walk through Sapsucker Woods.

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9 **Plastic Bags** – No added meeting or report.

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11 **Executive Committee** – Discussion regarding the Schyuler County EMC and the proposed  
12 reduction of their roles – added discussed occurred regarding EMC bylaws

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14 **Staff Report** – Scott Doyle reported on updates from the County Planning Department.

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16 Irene then reported on resolution at Town of Caroline board meeting addressing opposition to the  
17 West Dryden pipeline specifically titled “Resolution Supporting Alternatives to Natural Gas  
18 Exploration”. The Caroline Town Board urges the PSC and NYSERDA to recognize that  
19 expanding markets to natural gas runs in opposition to state and local goals of reducing GHG  
20 emissions. PSC and NYSERDA should develop incentive for reducing energy needs. The  
21 resolution passed at the Town Board by a vote of 4-1

22  
23 **Presentation: Citizen Science at the Local Level – Steve Penningroth**

24 Steve Penningroth of the Community Science Institute (CSI) opened the discussion by outlining  
25 background of CSI and their role of empowering citizens with information. CSI is certified for  
26 testing both potable and non-potable water. He noted that CSI is predominately funded by local  
27 governments at about 40%. Annual Budget is about \$224K. He noted that volunteer monitoring  
28 including Synoptic Chemical Sampling, red flag monitoring, and biological monitoring using  
29 BMI (benthic macroinvertebrates). Also, they have investigative locations that aren’t monitored  
30 continuously. Synoptic testing is a certified test for about a dozen chemicals; red flag monitoring  
31 partnerships for field test using tests for temp, pH, dissolved oxygen, conductivity, etc.;

32 Biological monitoring is monitoring that captures benthic macroinvertebrates. Steve then provided  
33 the example of the CSI stream watch volunteer group that conducted studies of Trumansburg  
34 Creek that captured average fecal coliform levels. Volunteers found an average of 52,700  
35 Colonies/100ml of fecal coliform under base flows (allowed levels are 200 Colonies/100ml of  
36 fecal coliform). He noted that the problem is the way DEC requires self-regulating of sewer  
37 treatment plants is a major loop hole. Tom Shelley asked where failures in the plant were that  
38 would create such high levels. Steve wasn’t sure, perhaps UV system failed or perhaps the way  
39 the plant is managed. Jose Lozano indicated they have other potential priorities at play as the  
40 plant is managed as a business. The plant is now in the process of being upgraded at \$6.2M.  
41 Anna Kelles asked if same system is being built. Steve was unsure as to what that upgrade  
42 entailed. Steve went on to discuss 4H20 youth group monitors and then showed how data helped  
43 confirm that Cayuga Lake was not impaired for pathogenic bacteria. DEC took data from CSI  
44 and other resources and that information was effective in de-listing the Lake as impaired for this  
45 purpose. Steve also discussed the Seneca Lake Pure Waters Association (SLPWA) and its  
46 monitoring of tributaries including monitoring of Reeder Creek near Seneca Army Depot.

1 Dissolved Phosphorus was a hundred times higher in this system. Data showed contamination  
2 was groundwater phosphorus. Possible contamination is from burning of munitions of Seneca  
3 Army Depot. Jim asked if John Halfman of the Finger Lakes Institute has been involved in any  
4 of this aspect. Steve said that he is more involved at the lake level. Tom then asked about  
5 monitoring for radioactivity. Steve indicated they haven't found anything. Steve then went on to  
6 describe how Community Science differs from Citizen Science. Citizen Science is usually  
7 conducted from federally funded peer reviewed work. Rather, Community Science is used to  
8 manage local resources based on existing science first, hypothesis testing is secondary. Data  
9 quality is good and is openly accessible. Local governments, private foundations, lab testing  
10 funds help to fund Community Science. The benefit is much more empowering and results in  
11 action. John Hertzler asked about the comparative lack of number of testing locations in Ulysses.  
12 Steve indicated he felt there were quite a few testing locations he could talk to in greater depth.  
13 He then discussed the range of groundwater/drinking water tests versus surface water tests. Brian  
14 Eden then noted they tested for the Hillview Landfill and phosphorus testing and wanted to link  
15 up those testing efforts with CSIs.

16  
17 **Wind Power FAQ Resolution** – Brian Eden updated the group on efforts on the FAQ  
18 document. The group discussed the great value in this document. Brian Eden moved the  
19 resolution and Tom Shelley seconded. Dooley suggested a few minor, friendly comments. The  
20 resolution passed unanimously. Brian then discussed the interest in talking more with the  
21 Planning Department to support local government efforts in advancing greenhouse gas reduction  
22 in our county.

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24 **Member Items** – None

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26 **Adjournment** -- The meeting adjourned at 5:55 PM.

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28 Respectfully submitted,

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30 Scott D. Doyle, Senior Planner  
31 Tompkins County Planning Department  
32 Approved by Council on