SUMMARY OF WIND COMMITTEE REVIEW

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Historical Background

A Request for Information (RFI) with Respect to The Development of Power From an Offshore Wind Energy Facility in Lake Michigan Off The Northern Shore of Evanston was issued May 1, 2010 and responses were received on June 30, 2010 from Mercury Wind Energy and Off Grid Technologies.

On December 6, 2010, the City Council voted to create a committee to review and evaluate the two responses to the City’s Wind Farm RFI and to provide comments to the City Council within 90 days. The committee had two co-chairs and was staffed by the City’s Sustainable Programs Coordinator.

The members were appointed on March 15, 2011 and the committee met four times, March 24, April 27, May 19, and June 8, 2011, plus multiple sessions by four working groups in April and May, 2011.

Reminder of the Purpose of the RFI:

A Request for Information collects information, usually preliminary to (and less formal than) a Request for Qualifications ("RFQ") or Request for Proposals ("RFP"). An RFI is typically used (and was specifically suggested for Evanston) where a government expected to take leadership on a project does not have enough information to promulgate an RFP and seeks to expand its knowledge base. The City of Evanston RFI here stated, as its intent, "to identify potential partners, determine the City’s role and establish a process for the development of a renewable energy facility off Evanston’s Lake Michigan shore."

Both respondents provided a great deal of information at no charge and in a timely fashion and the committee thanks both Mercury Wind Energy and Off Grid Technologies for their effort.

A summary of pertinent information from these responses, and key information the committee recognized while analyzing the responses, is as follows:

General

The two responses varied in detail and content, but provided at least partial useful information on most aspects of the offshore wind farm concept. In some instances, the committee working groups disagreed with projections, assumptions, or assertions of one response, or both.
Committee working groups also attempted to supplement areas where questions were answered partially or not at all.¹

**Information Regarding Equipment and Sizing**

1. Mercury Wind Energy (MWe) proposes a location seven to nine miles from shore, and concludes that a minimum capacity of 100 MW is necessary to achieve economies of scale and profitability.

2. Off Grid Technologies (OGT) proposes the use of vertical-axis magnetic-levitation turbines with an initial capacity of 200 MW. The committee notes that the design appears to be in only a developmental stage, and has not yet been tested at any commercial scale.

3. The committee believes that sizing would affect City role. Commercial economics incentivize building as large a project as possible. Evanston currently does not have sufficient demand to use the full power production capability of a 100MW-200MW wind powered generating system.

4. The committee finds that for a project of this size, the likely location of the grid interconnection will be at Church & Laramie in Skokie, and will involve both the City of Evanston and the Village of Skokie when cable must be routed from the shoreline to that point.

**Information Regarding Overall Timeline**

The committee believes that schedules relative to various environmental studies, interconnection studies, permitting, development of contracts and financing, constructing the necessary factories and infrastructure, and procuring and installing the required specialized equipment, will be significantly longer than those expressed by the respondents. A commercial-scale project, if the first in Lake Michigan, realistically would take at minimum four years, and probably considerably longer.

**Energy Pricing Implications**

The questions "What will the wind farm's generated electricity cost?" and "Who will buy it?" are key to commercial-scale project feasibility but were not explicitly asked in the RFI nor answered in detail.

One necessity for a project of this scale is a power purchase agreement (PPA), a contract between the power producer and the buyer(s) covering, e.g., quantity delivered and the wholesale power price. MWe described many of the considerations applicable to a PPA and these represent useful information, while OGT presented additional examples of provisions the PPA might

¹ As is to be expected in Evanston, committee work revealed diversity of viewpoints as to some aspects of a wind farm project. Not every participant may embrace every statement in this report or in the working group reports. However, efforts were made to report strong majority sentiment if not consensus.
contain. Respondents only briefly mentioned in passing potential PPA buyers for the wind farm's electricity.

The committee finds that:

1. The retail price of energy for Evanston’s electric energy users currently is not determined by any single power generating facility. Unless the community so chose, the wind farm likely would not affect the price to Evanston customers, with the impact depending on the differential at time of delivery between wind farm-produced power and other sourced power, and upon how much of the wind farm was included in Evanston's power mix.

2. The price of electricity is in flux, with possible large impacts from domestic and international political, economic, and natural occurrences, well beyond Evanston's control. Likely and possible scenarios as to possible electricity price, including demand for renewable energy credits, need more study.

3. Guaranteeing a specific price to Evanston residents is only possible if:
   a. Evanston forms a municipal utility (which it has in the past seriously considered but ultimately declined to do) or
   b. Evanston sets itself up for municipal aggregation of residential and small commercial electric accounts in the city. Note that under this model of City role, customers also might have the ability to opt out.

**Involvement of Government**

The committee found that the lack of a state and local framework is a disincentive to developers to prepare serious proposals. Governmental leadership is key to progress on offshore wind generally.

1. Federal
   a. It is important to recognize that current federal policy, including financial support, strongly favors offshore wind development.
   b. Federal regulatory approval for the first U.S. offshore wind project is now complete.
   c. National policy documents on the future of offshore wind power repeatedly speak to the critical role of state and local leadership.

2. State of Illinois
   a. The State has a renewable [energy] portfolio standard (RPS), which aids wind power project development generally.
   b. The State owns the lakebed and has started the legislative process to establish a framework for leasing the lakebed and regulating offshore wind.
3. City of Evanston
   Evanston has multiple role opportunities:
   
   a. Evanston has helped spur the State of Illinois to consider offshore wind development.
   
   b. Development of the Lake’s strong wind is likely. If the City doesn’t take an active role, it loses its chance to influence any proposed project.
   
   c. The City has limited inherent authority, such as permitting the landing point of the cable from the wind farm.
   
   d. The City can and should foster education and transparent discussion on the subject, and assess public opinion.

   These roles are consistent with the City’s Climate Change Action Plan accepted by the City of Evanston in November 2008.

Recommendations to the City for Next Steps

Accelerate our leadership:

1. Encourage, facilitate and follow the State’s activities for leasing and regulation of offshore wind. Specifically, the City should promptly request that an Evanston representative be the "local government official" on the expected Lake Michigan Offshore Wind Energy Advisory Council.

2. Act in harmony with residents. The City should redouble its efforts to promote awareness and foster transparent discussions.

3. Encourage and facilitate establishment of a meteorological station for obtaining data on which a developer can assess its potential energy production and revenue stream on which to finance the installation and its long term operation. This step is essential for project feasibility, now or in the future. Collaboration with other interested partners, such as Northwestern, will minimize or eliminate direct expenses by the City.

4. Identify the benefits and negative effects of an offshore wind farm. These should include environmental, social, and financial considerations that impact the City and its residents, its commitment to the Climate Action Plan, the University and local business.

5. Encourage, facilitate and follow other key studies that can sufficiently address project feasibility, including avian and other environmental concerns.

6. Identify grants, tax benefits, and other means to demonstrate to developers and lenders a favorable environment.

7. Follow other initiatives that indicate potential models for sharing leasing revenue and the ability to generate tax revenue. The current activities in Ohio may represent one of the possibilities. The City will want to have a leasing agreement, fee or other contractual mechanism for a developer to bring cables onshore and route through City rights-of-way.
8. Actively explore and select the City’s role(s) in the project, including whether the City can or should consider itself a potential direct buyer of a portion of the power produced. The role(s) chosen will drive Evanston’s participation in an RFP. An RFP would be necessary only if the City chooses its role as owner, producer or buyer of the electricity.

9. Identify master planning concepts and imminent projects that may interfere, limit or find synergy with aspects of such a wind farm installation.

10. Promptly designate a committee, board, or commission to work on the above, especially the critical aspect of role determination.

11. Explore and collaborate with potential partners in one or more of the above to minimize or eliminate direct expenses by the City. Explore potential partnerships with local governments, institutions, and other entities that may be interested in sharing costs and aggregating roles.
MAYOR'S WIND FARM COMMITTEE

OWNERSHIP, OPERATIONS & MAINTENANCE WORKING GROUP

Members: Joel Freeman, Fred Wittenberg, Rachael Bisnett, Diego Klabjan

Summary

In reviewing the responses to City’s Request for Information (RFI) for an off-shore wind turbine concept, the two responses provided partial information on the various aspects of ownership, operations and maintenance. The working group shares another working group opinion that the RFI language might have been clearer in order to elicit the desired information from the responses.

Ownership of the generating equipment was acknowledged in both responses: The developer in one, Mercury Wind Energy, LLC (MWe) and the turbine manufacturer, Regenedyne, in the other.

Ownership of the various points on which new equipment will reside and the implications to the City was not well acknowledged. However, where details were provided, some appeared contradictory.

The interconnection between the wind farm installation and the local electric transmission system did not contain adequate assessment to match the power production with the potential points of receipt of that power. This will impact the extent of the City’s involvement in routing cable from the shoreline to the interconnection point.

Both respondents indicated subcontracting of operations and maintenance (O&M) services. However, useful information regarding O&M was only provided by MWe. The staging facilities suggested by MWe included locations at Winnetka’s utility dock, Wilmette Harbor and Evanston’s beachfront dock, possibly tied to a new Evanston marina. Lakefront access will be needed for servicing by water and helicopter access needed to address unscheduled maintenance when lake ice prevents boat access.

Ownership of the power needs further clarification. One of the prerequisites to developing and operating a project of this scale involves a contractual agreement between the power producer and the buyer(s), the power purchase agreement, or PPA. With the term of the PPA spanning decades, the PPA becomes a key step. Most power production guarantees, limitations, obligations to perform, verification, remedies for non-compliance, etc., become articulated in the terms and conditions of the PPA. And as such, they become contractual issues between the buyer and seller. Speculation as to potential buyers in this arrangement receives only brief passing, leaving a key player virtually unaccounted for. Because the PPA will also include the price of this wholesale power, it was the opinion of this working group that the likely impact on the retail electric energy costs for Evanston consumers appeared misleading, highlighting the need for additional clarification on this topic.
The topics reviewed by the working group each contain the following components:

- Excerpts from the City’s RFI in which the topic is referenced, implied or appears related.
- Excerpts from the Mercury Wind Energy (MWe) response which address the topic directly or appear to be related.
- Excerpts from the Off Grid Technologies (OGT) response which address the topic directly or appear to be related.
- Comments and observations by the working group which summarize the responses, offer clarification to certain points of interest and pose questions that may be pertinent in future steps.

Each excerpt includes the page number(s) of the applicable document from which the excerpt was obtained. Some excerpts are abbreviated while others are presented in their entirety. Related illustrations and diagrams were not included.

This working group has made no recommendations to the City at this time. It is believed that development of recommendations will follow final review of all working group reports as a collaborative process between all members of the committee.

OWNERSHIP

For an offshore wind turbine installation ownership takes multiple forms. It includes the equipment built in the lake and the lakebed itself, the power cables brought onto land and the land itself, the connections to other existing equipment and the actual power produced. Ownership of each aspect will be implied, in part, by the level of control exerted over each portion.

Excerpt from the City’s RFI

“Anticipated Roles of the Project Partner – It is anticipated that the developer(s) would assume all responsibility for siting, permitting, constructing…the offshore wind energy facility…and would assume all development…risks associated with the project.” (p. 2)

Response of Mercury Wind

“1.2.3 The City of Evanston’s Role
   A. The role the city can play in the proposed offshore Evanston Wind Farm is aiding the preferred developer in: obtaining land lease rights, obtaining permits from the FAA, obtaining governmental permits, setting contract requirements, and aiding the developer in obtaining electrical interconnection permits.
   B. Specifying and outlining what the developer, the city, and the current electrical provider are responsible for.
   C. Helping with obtaining construction permits and right of way easements to bury electrical interconnection cables under city streets as they are installed from the offshore wind farm to the substation.” (p. 18)

“3.0 General Planning and Predevelopment Considerations
   3.1 Regulatory Approval Process
   Mercury Wind Energy believes that the most difficult aspect of constructing an offshore wind farm for the City of Evanston will be in obtaining the regulatory permits. These regulatory permits from local government, state government, and the Federal government will be the most difficult aspect of the project. As of this moment, no offshore wind farms have been constructed in the U.S. Therefore, there are many uncertainties (sic) as to navigating the permit process. The first step is for the City of Evanston to
award a development contract to construct an offshore wind farm. The second step would be getting the approval at the state level. The third and final step would be getting approval at the Federal level. The city’s roll (sic) throughout this process is petitioning the State and Federal government to grant the regulatory approval to the preferred developer. The key uncertainties that are not known at this time are:

A. Who grants approval at the local level?
B. Who grants approval at the State level?
C. Who grants approval at the Federal level?
D. Which entity receives the tax revenue from the wind farm?
E. Who grants the leasing rights and determines the length of the leasing rights in Lake Michigan?
F. What entity receives the annual leasing fees of Lake Michigan?”  

Response of Off-Grid Technologies

“3. Capital Requirements, Financing & Indicative Pricing

The following projections were developed using the NREL modeling system...

Wind Farm - Project Data Summary based on model default values

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“Tax Parameters

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Land Lease Parameters

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“...the cost efficiency of having the manufacturer as the developer...”  

“We look to establish a close relationship with the city of Evanston to insure proper permitting and agreements on staging areas, land facilities and transmission lines during construction.”  

Comments and Observations by Working Group

1. Ownership for the various locations of construction and equipment interfaces generally lacked sufficient definition and detail.

2. MWL appears to assume that the City controls more than it does. There is acknowledgement that construction permits and use of City rights-of-way are the City’s jurisdiction. However, the State of Illinois owns the lakebed and would be responsible for its leasing arrangements. The City owns the point of “landfall.” There’s an assumption that the City can affect the outcome of processes by other State agencies, Federal agencies and electrical system operators. Neither FAA permits nor interconnection permits would rely on City involvement.

3. OGT appeared to identify most key areas in which the City would have jurisdiction: staging areas, land facilities and transmission lines. OGT used modeling software that estimated certain
costs related to leasing and property taxes, implying an element of ownership by others, but does not identify the entities with whom these financial arrangements would be made. Some of the modeling parameters do not appear applicable to an offshore installation.

4. The State currently has no leasing protocol for an offshore wind turbine installation. Apparently, existing lakebed structures, such as, intake cribs and marinas have different arrangements not applicable to a wind turbine installation. Rep. Gabel’s bill currently awaits final approval in the State legislature for a wind energy council to determine the State’s leasing arrangements.

5. Q: Does the City have a leasing agreement, fee or other contractual mechanism for a developer to bring cables onshore and route through City rights-of-way?

INTERCONNECTION

The electrical interconnection represents the point where the power generated is delivered into the transmission system “grid” at the compatible voltage and other electrical characteristics. This also represents the point at which the wholesale buyer identified in the PPA receives the power purchased.

Excerpts from the City’s RFI

“Anticipated Roles of the Project Partner – It is anticipated that the developer(s) would assume all responsibility for … the offshore wind energy facility, including the interconnection to an onshore receiver station…” (p. 2)

“B. Technical and Infrastructure Considerations

1. Interconnection – Please provide information related to the design of the overall electrical interconnection system. Address the need for one or more offshore substations, the preference for, and viability and availability of, AC or HVDC cables for interconnection, location of converter stations (HVDC option), lake floor, routing and landfall considerations, and strategies for interconnection reliability, security, and energy deliverability. In what ways can the City facilitate the interconnection component of the project?” (p. 4)

Response of Mercury Wind

“1.2.3 The City of Evanston’s Role

A. The role the city can play in the proposed offshore Evanston Wind Farm is aiding ... the developer in obtaining electrical interconnection permits....

C. Helping with obtaining construction permits and right of way easements to bury electrical interconnection cables under city under city streets as they are installed from the offshore wind farm to the substation.” (p. 18)

“...Interconnection Facilities also located at: __Emerson & Dewey__....” (p. 29)

“(c) General Design and Construction of the Facility

...The Facility shall be:

(1) Capable of supplying Energy Output in compliance with the requirements of the Interconnection Facilities Agreement;

(2) Capable of operating at power levels as specified in the Interconnection Facilities Agreement;

(3) Equipped with protective devices and generator control systems designed and operating in accordance with the Interconnection Facilities Agreement and Good Utility Industry Practice(s).

5.2 Construction.
(a) Design, Development and Construction. Except as otherwise provided in an Interconnection Construction Services Agreement, as between Buyer and Seller, Seller shall have sole responsibility for the design and construction of the Project and the Project Meter and all related metering and submetering facilities, including the obligation to perform all studies, including environmental studies, pay all fees, obtain all necessary Permits and execute all necessary agreements with Exelon/PJM and Participating Transmission Owners for the Electrical Interconnection Facilities necessary for the ownership, construction, operation and maintenance of the Project and delivery of Seller’s Products in accordance with the terms hereof. All of such design, construction and upgrades shall be consistent with all standards and provisions set forth by FERC, PJM or any other applicable Governmental Authority and the interconnecting Participating Transmission Owner. All Electrical Interconnection Facilities, including metering and submetering facilities must be of sufficient capacity to permit the Project to operate at all times during each month at the Project Capacity. Metering and submetering facilities must meet such additional specifications as set forth in Section 3.8.” (pp. 29-30)

“Regardless of whether Buyer is a Participating Transmission Owner, Seller shall be responsible for all of Seller’s interconnection arrangements” (p. 32)

“(ii) Seller shall construct or cause to be constructed the Electrical Interconnection Facilities at no expense to Buyer such that the Electrical Interconnection Facilities are capable of delivering the maximum quantities of Energy to the Delivery Point as contemplated in this Agreement during each month (in addition to any other output of the Project as the Electric Interconnection Facilities are required to transmit) and shall cause them to be placed into service, in each case, in accordance with the requirements of the interconnecting transmission owner and/or operator, and applicable rules, if any, of FERC, PJM, Exelon, the Commission and any other organization or Governmental Authority charged with reliability responsibilities.

(iii) At Seller’s expense, Seller shall have obtained (and demonstrated possession of) all Permits required for the lawful construction, operation and maintenance of the Project and the Units, inclusive of the Electrical Interconnection Facilities, including all those related to environmental matters, as necessary to permit the Seller to operate the Project at the Project Capacity and for Seller to perform its obligations under the Agreement.

(iv) Seller shall have executed all interconnection and transmission services agreements, including the Interconnection Services Agreement and the Interconnection Construction Service Agreement, all agreements necessary for its use and control of the Site for purposes of the construction, operation and maintenance of the Project for a term at least equal to the Pre-Services Term Period (if a Pre-Services Term Period occurs) and the Services Term, and all other agreements that are necessary for Seller to perform its obligations hereunder, in form and substance reasonably satisfactory to both Buyer and Seller in the case of each interconnection and transmission services agreement, and which agreements shall be in full force and effect as of the Initial Delivery Date.” (p. 34)

“2.0 Technical and Infrastructure Considerations

2.1 Interconnection & Overall Offshore Electrical Interconnection System Design

All existing offshore wind farms without offshore substations are connected to shore at the voltage used within the wind farm (generally 12 - 13.8 kV low voltage, oil and gas platforms also use 13.8kV). However, based upon initial electrical analysis, Mercury Wind has concluded that the Evanston offshore wind farm should have an offshore substation. This substation will take collector voltages of 12kV or 34.5kV and increase them to 69kV or 138kV in the “homerun” cable to shore. In a separate conduit, an interface cable will be installed to enable each turbine to be tripped off in the event of a ground fault on the turbine side of each transformer. Finally, a third conduit will house the fiber optic lines for turbine communication. Interconnection of the wind farm to ComEd’s electric grid will consist of an existing three-phase overhead feeder line. The disconnection of wind farm or isolation to faulty equipment from the utility grid will be controlled by switchgear. Underwater cable laying, internal cable layout in the offshore wind farm, cable layout through the shoreline ground area; landfall and connection to the grid will be disclosed in the Evanston RFP. The submarine cables will be buried 3-4 ft into the lake bottom and encased in concrete or grouted into the lake bottom at the shoreline to avoid damage to the cable by the winter ice. This main
“collector” submarine cable will be connected from turbine to turbine, at the offshore wind farm, until all the turbines are connected electrically like a grid. There will be one “homerun” submarine cable from the offshore wind farm substation to take the wind farm output power, to the onshore electrical substation near the intersection of Dewey and Emerson streets. This onshore substation is located approximately 1.4 miles inland and is owned by ComEd/Exelon. Figures 2.1.1 and 2.1.2 illustrate the system design and location of the proposed offshore Evanston wind farm.... Once the ‘homerun’ electrical cable has reached the shoreline, it must be buried underground for approximately 1.4 miles until it reaches the substation. The underground interconnecting cable burial will require the City of Evanston to allow road construction on Emerson Street for about 1-2 months.” (pp. 50-52)

“E. 1-4 month electrical interconnection feasibility study must be conducted to develop a safe reliable, efficient, and cost effective offshore wind facility.” (p. 66)

Response of Off-Grid Technologies

“2. Business Structure
Phase One: ...
... to provide 200 Mega watts of electricity...
...on shore transmission lines must be analyzed for Kv carrying capacity data and receiver sub-station for power line load capacity, Interconnection Agreements obtained and considered, Sub-station controls & operating facility, maintaining data,...” (p. 11)

“Detailed Wind Farm Project Data Costs

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“B) Technical and Infrastructure Considerations
1. Interconnection
(VAWT OFF SHORE JV) will collaborate with Local and National utilities, Transmission providers, Cities, States, and The United States Government, to determine optimal interconnection design of the first of its kind scalable technology wind power plant system... The Interconnection Customer agrees to construct its facilities or systems in accordance with applicable specifications that meet or exceed those provided by the National Electrical Safety Code, the American National Standards Institute, IEEE, Underwriter’s Laboratory, and Operating Requirements in effect at the time of construction and other applicable national and state codes and standards. The Interconnection Customer agrees to design, install, maintain, and operate its Small Generating Facility so as to reasonably minimize the likelihood of a disturbance adversely affecting or impairing the system or equipment of off shore project.” (p. 17)

“Consideration of Kv line capacity up to lake front substation inverter system to local utility or end user.” (p. 20)
Comments and Observations by Working Group

1. MWe has assumed that ComEd’s transmission substation, TSS47, near Emerson Street and Dewey Avenue has adequate capacity to receive the full power generated by the wind turbine installation. Previous conversations between the Evanston Utilities Commission and ComEd indicated that this location may be inadequate for the wind turbine installation size outlined in the response. An alternative interconnection location for this scale of wind farm capacity may be at ComEd’s Skokie substation located on Church Street near Laramie Avenue, several miles further inland.

2. OGT used modeling software that estimated certain costs related to the interconnection, but does not identify the entities with whom these financial arrangements would be made. Potential interconnection points were not indicated by OGT.

3. The developer owns the equipment up to the transmission interconnection point. ComEd owns the transmission interconnection points under consideration for the proposed scale of installation. Evanston currently does not have an end user large enough to use the full power production capability of the generating systems presented. The RFI responses did not satisfactorily address these considerations.

4. A developer must obtain two levels of PJM feasibility study that evaluate all aspects of interconnection capacity, configuration, monitoring, required upgrades, etc. These details primarily affect the developer. The City will be impacted from a scheduling standpoint as these steps will take time to enter into the queue and to fully transact.

OPERATIONS AND MAINTENANCE (O&M)

O&M is required to perform preventive maintenance, regular servicing and repair or replace worn or malfunctioning components. To keep the facility operational and productive, equipment operations and servicing need management through the allocation sufficient staff, scheduling, supplies and spare parts and budgeting. Special considerations may be needed for the necessary support facilities.

Excerpts from the City’s RFI

“2. Business Structure – Please describe your recommended business structure for the development and operation of an offshore wind facility. Describe the City’s role, if any…” (p. 3)

“4. Operations and Performance – Please provide information related to the operations and performance… maintenance plan, facilities, staffing, spare parts, and response time for unscheduled maintenance, scheduled maintenance procedures and frequency (including periodic turbine overhauls or major component replacement/repair), remote communications, control, monitoring and dispatch systems, documented safety and emergency rescue plans and facilities, anticipation of construction and/or operational curtailment due to bird migration, and any additional items to be considered…” (p. 3)

“3. Infrastructure for Construction and Maintenance – Please provide information related to the infrastructure required to execute the construction and maintenance phases of the facility. Address specialized equipment needs and availability, availability of skilled labor and trained crews, access of appropriate port facilities, laying of cable interconnection, insurance matters, potential weather and other seasonal impacts on… maintenance… and any other issues that should be considered.” (p. 4)
Response of Mercury Wind

“Mercury Wind selects only experienced contractors who plan connection to the grid and arrange for delivery of the energy to customers. Lastly, Mercury Wind secures financing early on in the development process to see the project through from concept to eventual decommissioning. (p. 5)

“6. Mercury Wind is hiring experienced contractors and sub-contractors that have completed onshore and offshore wind farms. Table 0.0 lists a few of the experienced offshore wind farm contractors Mercury Wind will employ for the proposed Evanston offshore wind farm. Approx. 90% of the sub-contracting companies listed in the table have installed and worked on one or more of the 28 offshore wind farms in the world. The rest of the sub-contracting companies have experience with onshore wind farms or an extensive marine resume.” (p. 8)

From “Table 0.0 Partial List of MWe Sub-Contracting Companies”, for “Operations & Maintenance” includes “Global Wind Alliance, Frontier Pro...et al...” (p.8)

“1.2 Business Structure

1.2.1 Development of proposed Evanston Offshore Wind Farm
Mercury Wind Energy recommends to the City of Evanston that a wind developer, namely itself; construct, manage, develop, operate, maintain, and eventually decommission the proposed Offshore Wind Farm for the City of Evanston...”

1.2.2 Operation and Maintenance of an Offshore Wind Facility
Mercury Wind Energy recommends to the City of Evanston that the operation of the proposed Offshore Wind Farm be operated and maintained by a utility company, the developer, or by another privately held experienced offshore operations and maintenance company for the following reasons;

A. The City of Evanston has limited expertise... Therefore, it is much less expensive for a larger energy company, such as ComEd/Exelon, EnXco, PJM, or others to operate and maintain the offshore wind farm.

B. Cost, financial risk, and environmental risk prevent the possibility of the City of Evanston maintaining, building, or owning the wind farm.

C. Contracting out the operations and maintenance of the proposed offshore wind farm to an experienced operations and maintenance company will allow the developer to utilize previous knowledge, experience, and economies of scale. Mercury Wind has already developed a relationship with 2 highly experienced O&M companies that are interested in operating and maintaining an offshore wind farm for Evanston.” (pp. 17-18)

1.5.5 Maintenance Plan/Facilities/Staffing
Figure 5.3 shows Mercury Wind has located 3 ideal port locations from which to perform any operating and maintenance procedures on the Offshore Evanston Wind Farm. These 3 ideal port locations are; Winnetka Electrical Utility dock, Wilmette harbour, or the Evanston dock area currently located near the Church street beach.

...As was stated earlier in this RFI, 2 people are needed to service every 10 – 20 turbines. The turbine controls facility can be located anywhere in Evanston, but it would be best to locate the controls and monitoring facility as close to the wind farm, and boat port as possible. This allows for a faster service and maintenance time from the crews and for decreased issues with faulty or inaccurate communication.” (p. 44)

1.5.6 Evanston Marina
Another O&M facility option is; construct a Marina in Evanston between the Davis/Church and Clark Street beaches. A Marina could be built to include a fine restaurant right on the water, and located on the second floor could be the controls and monitoring facility for the Wind farm. Mercury Wind is in talks now with a well known construction company that just finished building, “The Grand Marlin”. The Grand Marlin is a high end Marina built on the famous white sand beaches of Pensacola, Florida. Here is the URL link to the new Grand Marlin Marina should you care to take a look; http://www.thegrandmarlin.com/
“1.5.7 Spare Parts
When an offshore wind farm is out of commission, 83% of the time it is due to a lack of spare parts. It should be obvious here that the wind farm developer and owner do not make money during a downtime. Therefore, it is in the best interest of the wind farm owner to perform regularly scheduled maintenance and replace turbine parts BEFORE needed. In addition, newer turbines are now made without gearbox’s (transmissions) to reduce maintenance issues. These newer turbines without gearboxes are referred to as, “direct drive” turbines. Since most of the problems and wear and tear was occurring in the gearbox the turbine engineers redesigned the turbines to run without the gearbox. The gearbox is one of the items that Mercury Wind is eliminating in its turbines to reduce maintenance items and turbine downtime.”  (pp. 45)

Other O&M items described include:

“1.5.8 Response Time For Unscheduled Maintenance...” (p.45)

“1.5.9 Scheduled Maintenance Procedures And Frequency
(Including periodic turbine overhauls or major component replacement/repair)...” (p.46)

“1.5.10 Remote & Wireless Communications...
1.5.11 Controls...Communications medium...Voice communications...
1.5.12 Monitoring And Dispatch Systems...”  (pp. 47-48)

1.5.13 Safety And Emergency Rescue Plans And Facilities...” (p. 48)

Response of Off-Grid Technologies
“The maintenance cost of 500 conventional wind turbines over 20 years is tremendous. For newer machines annual maintenance is estimated at 1.5 - 2% of original cost. The annual operation and maintenance of 500 two megawatt commercial wind turbines, using current industry standards is between $26 and $35 million. Over 20 years (which is the life expectancy of a current commercial wind turbine) that comes to $525 million in maintenance costs alone. That is $25 million more than we estimate the cost of a new One Gigawatt Maglev Wind Turbine will be. This brings the creation and maintenance of a like sized wind farm cost to $1.025 Billion versus the Regenedyne cost of $800 Million. The reason the operation and maintenance of the Regenedyne wind turbines is so low is the frictionless power and the lack of wear on the materials as a result of there being no friction.”  (p. 10)

“2. Business Structure
Phase One:
...data and receiver sub-station for power line load capacity, Interconnection Agreements obtained and considered, Sub-station controls & operating facility, maintaining data,... operational risk analysis,...safety analysis,...will be completed to evaluate the potential to deliver power to the market.”  (p. 11)

“Phase Three:
...Monitor system and service to ensure optimal efficiency...”  (p.12)

“3. Capital Requirements, Financing & Indicative Pricing
The following projections were developed using the NREL modeling system...

Wind Farm - Project Data Summary based on model default values
Direct Operating and Maintenance Costs $2,038,000...”  (p.12)
“Wind Farm Annual Operating and Maintenance Costs

<table>
<thead>
<tr>
<th>Labor Personnel</th>
<th>Cost</th>
<th>Local Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Salaries</td>
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<tr>
<td>Administrative</td>
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<tr>
<td>Management</td>
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<td>Fuel (motor vehicle gasoline)</td>
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<td>100%</td>
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<td>Consumables/Tools and Misc. Supplies</td>
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<td>Replacement Parts/Equipment/ Spare Parts Inventory</td>
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</tr>
<tr>
<td>Materials and Services Subtotal</td>
<td>$989,270</td>
<td>(p. 14)</td>
</tr>
</tbody>
</table>

“System will be developed with appropriate maintenance, remote communications, and monitoring to ensure optimal efficiency.” (p. 16)

“3. Infrastructure for Construction and Maintenance

RM (sic) Engineering is a world-class engineering and procurement organization. The engineering arm of J. Ray McDermott, JRM Engineering is a leader in offshore fabrication and installation and offers customers a full range of engineering, procurement, and support services.” (p. 19)

“We look to establish a close relationship with the city of Evanston to insure proper permitting and agreements on staging areas, land facilities and transmission lines during construction.” (p. 24)

“...- Generates Electricity with fewer moving parts
-Major Components located at ground level...
-Minimal Maintenance” (p. 27)

“All key areas 24/7/365 video & SATCOM monitoring.” (p. 33)

“No oil, grease or petro-fuel required.” (p. 33)

Comments and Observations by Working Group

1. MWe and OGT both identified that their design technologies have less servicing and maintenance and, therefore, lower O&M costs than other conventional wind turbine designs. Based on the background experience and new technologies presented, an O&M history will require assurance to the power purchaser.

2. MWe identified a significant list of O&M considerations. Among these consideration are potential lake front staging areas: Evanston’s beachfront dock, Wilmette Harbor and Winnetka’s utility dock.

3. MWe implies an intent to subcontract operations and maintenance of the installation in portions of their response. MWe also lists suggestions for operating the proposed wind farm that do not offer realistic options. Since electric power deregulation became effective in 1999, ComEd has
operated only as an electrical distribution company, not as a generating company. PJM Interconnection manages and coordinates the power generated to match the power use requirements in ComEd’s territory. PJM operates the transmission system to schedule in power from all generating facilities, but does not operate any of those generating facilities. Therefore, neither ComEd nor PJM would likely have the role of operator for any proposed wind farm.

enXco, Inc. does provide a range of O&M services.

4. OGT used modeling software that estimated certain costs related to O&M. OGT implies that JRM Engineering would be contracted to perform maintenance at the facility.

5. OGT’s response indicated no specific requirements for monitoring facilities, only that theirs would be “appropriate.”

6. The developer takes on the responsibility and the ongoing costs for O&M in order to comply with the production provisions of the PPA and sustain the revenue stream from the buyer. The O&M costs presented comprise a portion of the estimated developer’s costs, but there are no costs presented that place specific requirements on Evanston.

7. Q: Have any inquiries been made of the potential locations in Winnetka and Wilmette? Q: Is it necessary to presume a helipad would be part of a monitoring facility location? Q: Is this realistic for these sites? What would be likely alternatives?

8. Q: Would a marina offer a funding mechanism for the facility or would it just blur ownership?

9. Q: Doesn’t an Evanston marina involve similar jurisdictional requirements and aesthetic issues as the wind farm itself? Wouldn’t the concept of a marina generate an undesirable debate that distracts from the primary focus of this installation?

10. Q: Is a local monitoring facility really needed or can monitoring be done remotely?

11. For 40 turbines MWe implies a service staff of 3-4. Due to likely safety protocols with water access and confined spaces, the Working Group initially speculated that this staff level may be underestimated. Q: Does this staffing assume full time for 1 daytime shift, scheduled periodic visits, or something else?

POWER PURCHASE AGREEMENT (PPA)

The PPA gives a detailed articulation of the terms and conditions that form a contractual agreement between the seller of the power generated and the buyer of that power.

Excerpts from the City’s RFI regarding City’s role in the Project

“4. Power Purchase Agreement (PPA) – Please describe your interest in maintaining all or a portion of the project output for sale and address the ideal length of a PPA, terms of service, ancillary services, pricing structures, production and availability guarantees, outages, facility operating criteria, curtailment and start-up and shut-down considerations, insurance and indemnification requirements, default provisions, and any additional information or recommendations for PPA terms and conditions that should be considered.” (p. 3)
Response of Mercury Wind

“...to eliminate risk and establish a hedge against possible downward pressure on commodity prices, Mercury Wind will sign a 20 year PPA....The 20 year PPA is the best strategy to allow wind developers to reduce pricing uncertainty...”  (p.21)

“1.4.1 Interest
Mercury Wind is interested in selling all of the output of the offshore wind farm to the IPA or local utility provider. Mercury Wind prefers to sign a 20 year PPA with the Illinois Power Authority, ComEd/Exelon, PJM, or another local electricity provider....”  (p.22)

“1.4.3 Terms of Service
...Mercury Wind would be responsible for delivering this power under the agreed upon contract terms of the PPA...”  (p.24)

MWe gives detailed language as an example of general terms and conditions of the agreement that include pricing, definition of power delivery point, availability and performance guarantees, metering requirements for power production measurement and verification, financial arrangements for excess power, insurance and financial remedies for non-performance, etc. A turbine performance warranty was noted and can potentially affect performance requirements of the PPA, although this is an equipment performance issue between the producer and equipment supplier.

Response of Off-Grid Technologies

“Regenedyne turbines are self sufficient and grid ready, and the excess energy will be sold back to the municipalities in which they operate.”  (p. 11)

“Phase Two:
...Complete the negotiation & submission of Power Purchasing Agreement (PPA) to local utility or corporate end user...”  (p.12)

“4. Power Purchase Agreement (PPA)
It will be the desire of VAWT Off-Shore JV to maintain all or a portion of the power from the proposed project output for sale. Ideally, the power output will be negotiated and sold to a regional utility power company. Basic terms of an agreement will be for a period of 20 years at a price of 18-24 cents per kilowatt hour (kWh). The pricing may remain flat, fixed or may escalate or deescalate over the life of the agreement. Production and Availability Guarantees will be put in place to insure proper operation and maintenance, safe reliable operating conditions in accordance with prudent operating practices. There will also be plans for inspection records available for the buyer. Curtailment provisions will be implemented due to an occasional necessity to curtail the production of wind energy. The request to curtail might come from the Purchaser, Transmission owner, or Transmission Authority for various reasons. Therefore, curtailment calculations will be negotiated depending on the reason and origin of the curtailment. The PPA will require that we, the seller maintain, at our expense, specific insurance policies. In some cases, there will be an option to list the purchaser as an additional insured under the policy. Policies typically required include: commercial general liability insurance; worker’s compensation insurance for seller’s employees; automobile liability insurance; builder’s risk insurance; all-risk property insurance; and business interruption and extra expense insurance. The business interruption and extra expense insurance covers lost revenues or increased expenses needed to resume operations after a claim under the property insurance policy. The PPA will include detailed sections related to ‘events of default.’ Events of default are situations where the action or inaction of one of the party significantly jeopardizes the overall project...”  (p. 15-16)

Comments and Observations by Working Group

1. Both respondents identified a 20-year agreement for the PPA.
2. MWe described many of the considerations applicable to a PPA and these represent useful information. Potential candidates identified for this agreement include the Illinois Power Authority, ComEd/Exelon, PJM or other power provider. (PJM is not a power purchaser.)

3. OGT identifies an agreement with a “regional utility power company”, but indicates no potential candidates for this arrangement. OGT gives some examples of provisions the PPA might contain, such as pricing structure, production and availability guarantees, data access, curtailment criteria, various insurance and events of default.

4. OGT also includes some ideas that initially appear unusual and can be construed as contradictory to other information presented. Therefore, questions arise:

   “…excess energy will be sold back to the municipalities in which they operate.” How does excess energy get generated? How would it get sold to the municipality if a utility is the buyer? If the turbines operate offshore, do they operate in any municipality?

   “…the desire of VAWT Off-Shore JV to maintain all or a portion of the power from the proposed project output for sale.” What would be the strategy for selling only a portion of the power output?

5. The developer owns the power produced as the seller until it’s delivered to the interconnection point where buyer takes possession, according to the PPA. The buyer usually purchases at a wholesale price to resell into a retail market.

6. The terms and conditions of the PPA outlines buyer and seller contractual issues and, for most arrangements, these will not affect the price of Evanston customers. Despite the wholesale price agreement in the PPA, it should be noted that the price of electric energy for Evanston’s electric energy users is not determined by any single power generating facility. Unless the City is the buyer in the PPA, the price of power to most customers will continue to be determined by retail supply contracts or by ComEd’s existing retail procurement auction.

7. Q: If Evanston were to prepare a municipal aggregation arrangement, could it be a potential buyer?

8. Q: How would renewable energy certificates (RECs) become available for this installation?

9. Q: Can Evanston receive or have access to any of the production data? Could this be a condition of the PPA?

DECOMMISSIONING THE INSTALLATION
When the power production enterprise can no longer be carried out, there need to be provisions for disconnection and removal of equipment and the associated costs.

Excerpts from the City’s RFI

   “3. Capital Requirements, Financing & Indicative Pricing – Please describe … provisions for decommissioning and removal of turbines ...Describe the City’s role, if any.” (p. 3)

   “…assurance of site decommissioning and restoration at end of useful life.... Describe the City’s role, if any.” (pp. 4-5)
Response of Mercury Wind

“...Mercury Wind... secures financing early on in the development process to see the project through from concept to eventual decommissioning.” (p. 5)

“1.2 Business Structure
1.2.1 Development of proposed Evanston Offshore Wind Farm
Mercury Wind Energy recommends to the City of Evanston that a wind developer, namely itself; construct, manage, develop, operate, maintain, and eventually decommission (sic) the proposed Offshore Wind Farm for the City of Evanston...” (p. 17)

“1.3.5 Decommissioning & Turbine Removal
Mercury Wind accepts full responsibility for the decommissioning and turbine removal of the proposed Evanston offshore wind farm, but asks that a 20 - 50 year offshore land lease be approved by the city of Evanston. The longer the offshore land lease the lease rights, the easier it is for the developer to pay for the offshore wind farm. Mercury Wind has investigated the decommissioning timeline for a wind farm. Estimated site decommissioning has a timeline range from 6 months to 2 years. Based upon additional conservative estimates of tearing down a large scale construction project, Mercury Wind estimates the decommissioning of an offshore wind farm will take approximately 6 months. Site restoration will take anywhere from another 6 months to a year. Total time spent, 1 – 2 years. The faster a wind farm is decommissioned, the cheaper. However, Mercury Wind is committed to the environment and will do nothing to harm the marine ecological structure within Lake Michigan. If the process to decommission turbines and restore the lakebed floor takes longer than initial (sic) estimates, Mercury Wind has budgeted for that.” (p. 22)

“Decommissioning is “estimated” because no companies have torn down an offshore wind farm yet. Every estimate published to date is conjecture. Mercury Wind has spoken with professional contractors and conducted market research on this topic, neither of which was easy because no one in the US has offshore wind energy experience. Mercury Wind in partnership with a sub contractor has developed a proprietary method to decommission an offshore wind farm, quickly and with little environmental effect. This will be discussed in greater detail during the RFP stage.” (p. 22)

“1.4.3 Terms of Service
Mercury Wind is responsible for: delivering power, constructing, maintaining, operating, and the eventual decommissioning (sic) of the wind farm.” (p. 24)

“1.6 Timeline
The proposed offshore Evanston wind farm is expected to be in operation for at least 20~25 years and will consist of; construction, installation, commissioning, operation, and decommission phases...” (p. 48)

“3.3.10 Site Decommissioning & Site Restoration
Mercury Wind has investigated the decommissioning timeline for a wind farm. So far, the timeline’s (sic) range from 6 months to 2 years. Based upon conservative estimates of tearing down a large construction project, Mercury Wind estimates that to decommission an offshore wind farm will take approximately 6 months. Site restoration will take anywhere from another 6 months to a year. Total time spent, 1 – 2 years. Obviously, the faster the wind farm is decommissioned, the cheaper. However, Mercury Wind is committed to the environment and will do nothing to harm the marine ecological structure. So if the process to decommission ends up taking longer, Mercury Wind has budgeted for that.” (pp. 69-70)

Response of Off-Grid Technologies

“We anticipate decommissioning after a minimum of 100 years and should have this revisited on a decade basis.” (p. 24)
“No Decommissioning” (p. 27)

Comments and Observations by Working Group

1. MWe has accounted for the concept of decommissioning the installation in its budgeting and environmental concerns, but states that the lack of case studies for this step currently makes the process more speculative. MWe stated that elaboration on the process would be reserved for a formal proposal.

2. OGT has almost dismissed any need for decommissioning the installation.

3. Q: Can it be assumed that the State will have decommissioning provisions and requirements in its lease?

4. Q: Will the City have decommissioning provisions and requirements in its contractual arrangements for land-based components?

5. Q: Will ComEd have decommissioning provisions and requirements for its interconnection arrangements?

OTHER ITEMS NOTED

The following items were not mentioned in the RFI, nor were they mentioned in either of the developer responses. However, the Working Group found them important when considering the quality of the initial construction and the ongoing operations and maintenance.

- Independent Third Party Oversight during construction - What provisions will be made to insure best construction practices are followed? Will FERC require an oversight committee?
- Performance Bond for Construction - Would the State or FERC require such a bond?
- Independent Third Party Oversight of Operations and Maintenance - What provisions will be made to insure best O&M practices continue?

Glossary

“PJM Interconnection is a regional transmission organization (RTO) that coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia.” It acts as a neutral, independent party, to operate a competitive wholesale electricity market and manage the high-voltage electricity grid to ensure reliability.”

(Source: http://pjm.com/about-pjm/who-we-are.aspx)

The Federal Energy Regulatory Commission, or FERC, is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. For electricity, FERC also:

- Regulates the transmission and wholesale sales of electricity in interstate commerce; reviews certain mergers and acquisitions and corporate transactions by electricity companies; reviews the siting application for electric transmission projects under limited circumstances; licenses and inspects private, municipal, and state hydroelectric projects; protects the reliability of the high
voltage interstate transmission system through mandatory reliability standards; monitors and investigates energy markets;

- Enforces FERC regulatory requirements through imposition of civil penalties and other means; oversees environmental matters related to natural gas and hydroelectricity projects and other matters; and administers accounting and financial reporting regulations and conduct of regulated companies.

- **Areas considered outside of FERC's responsibility include**: Regulation of retail electricity and natural gas sales to consumers; approval for the physical construction of electric generation facilities; regulation of activities of the municipal power systems, federal power marketing agencies like the Tennessee Valley Authority, and most rural electric cooperatives; regulation of nuclear power plants by the Nuclear Regulatory Commission; tree trimmings near local distribution power lines in residential neighborhoods; issuance of State Water Quality Certificates; reliability problems related to failures of local distribution facilities; and tree trimmings near local distribution power lines in residential neighborhoods.

(Source: [http://www.ferc.gov/about/ferc-does.asp](http://www.ferc.gov/about/ferc-does.asp))

The **Illinois Power Agency (IPA)** was established in 2007 “for the purposes of:

- Developing and submitting annual electricity procurement plans to the Illinois Commerce Commission that ensure adequate, reliable, affordable, efficient, and environmentally sustainable electric service at the lowest total cost over time, taking into account any benefits of price stability for Commonwealth Edison and the Ameren Illinois Utilities. The plans are to include electricity generated from renewable as well as clean coal resources.

- Conducting competitive procurement processes according to the procurement plans as approved by the ICC.

- Developing electric generation and co-generation facilities that use indigenous coal or renewable resources, or both, financed with bonds issued by the Illinois Finance Authority.

- Supply electricity from the Agency’s facilities at cost to municipal electric systems, governmental aggregators, or rural electric cooperatives in Illinois.”

(Source: [http://www2.illinois.gov/ipa/Pages/default.aspx](http://www2.illinois.gov/ipa/Pages/default.aspx))
Summary: Both responses to the City of Evanston ("CoE") Request for Information ("RFI")\(^1\) issued a year ago provided considerable information but addressed some public affairs questions incompletely. Federal regulatory process relating to Great Lakes offshore wind development, though details are still in flux, is now fairly predictable, and, while time-consuming, should not ultimately pose an obstacle; indeed, the federal government would be a critical project resource. Current lack of a state regulatory framework, and City lack of site control, by contrast, are barriers to moving forward and disincentive for serious project interest.

City role in public affairs would have more dimensions than the two developer responses outlined and could be substantial. Evanston has multiple models of role to choose between before propounding an RFP. Comprehensive stakeholder engagement will be necessary.

Analysis of the RFI responses and other available information indicates encouraging potential for an Evanston offshore wind farm, but also identifies uncertainties and significant potential challenges for the project. Governmental leadership, including federal financial support, is key to progress on offshore wind generally, and for this project. By maintaining an active interest in the project, participating in state and federal policymaking process, and more clearly defining the City’s role in an offshore wind project, Evanston can position itself to be a major participant in such a project when these obstacles have been overcome and uncertainties have been resolved.

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\(^1\) City of Evanston, Request For Information (RFI) To Develop Power From An Offshore Wind Energy Facility In Lake Michigan Off The Northern Shore Of Evanston (May 1, 2010).
Purpose of the RFI. A Request for Information collects information, usually preliminary to (and less formal than) a Request for Qualifications ("RFQ") or Request for Proposals ("RFP"). An RFI is typically used (and was specifically suggested for Evanston) where a government expected to take leadership on a project does not have enough information to promulgate an RFP and seeks to expand its knowledge base. The CoE RFI here stated, as its intent, "to identify potential partners, determine the City’s role and establish a process for the development of a renewable energy facility off Evanston’s Lake Michigan shore."

Scope of the Public Affairs Working Group report: The first Mayor's Wind Farm Committee meeting on 3/24/11 generated comments and questions relating to permitting (including schedule); the public trust doctrine; the City’s role and responsibility, including options for City role; the political and regulatory processes necessary to implement a wind farm project; resident reaction; and possible litigation. These concerns were assigned to this working group, under "role of the City of Evanston, and politics." The working group tried not only to analyze and list the RFI responses germane to those issues but to supplement those, for the Committee's and the City's use, by identifying the gamut of regulatory, legal, and public opinion issues related to the project. For ease of discussion the name "Public Affairs" is here used.

The working group identified two larger categories: first, the legal and regulatory framework, which was subdivided into federal, state, county, and municipal jurisdiction; and second, the political environment in which such a project would develop. This report addresses primarily the governmental and legal aspects, with most attention to the City's role. For each subtopic, the RFI is compared to the respondents' answers, followed by the group's comments.

With respect to the political environment, work was limited at this point to identifying possible interests. Time and prematurity mitigated against identifying support or opposition at this early phase.

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2 Note that, typically, not responding to an RFI does not preclude a potential partner from later responding to an RFQ/RFP. As examples, see, e.g., City of Chicago, Request For Information (RFI) for Chicago O’Hare International Airport Transit System Expansion (December 31, 2007), www.flychicago.com/PDF/DoingBusiness/Archive/ATS11-9-07.pdf; City of Chicago Department of General Services, Request for Information: Chicago CivicNet (November 2000), www.muniwireless.com/reports/docs/civicnetRFI.pdf.


4 The RFI itself could have been clearer and/or more comprehensive in some of its requests. The following words and phrases do not appear in the RFI: law, legal, regulation, lawsuit, litigation, politics, political, public opinion. The key aspect of regulatory framework is only briefly mentioned.
A. Federal regulation.

Questions: The RFI only asked obliquely about the role of, and interaction with, federal government. Section C(1) asked, "Please identify any issues of concern related to the process of obtaining all anticipated permits and approvals for the development of the offshore wind facility. What key uncertainties are known or anticipated in this process at the federal … level."

Mercury Wind: Mercury states that "the most difficult aspect of constructing [the wind farm] will be in obtaining the regulatory permits, that the "third and final step [after local and state permits] would be getting approval at the Federal level," and that a "key uncertainty[y] not known at this time" is who grants approval at the federal level (emphasis supplied). Mercury lists five federal agencies that have granted permits for other projects, states that permitting can take as little as 6 weeks, and posits a 6-month timetable for federal permitting, concurrent with other jurisdictions (pp. 49, 65, 66), to begin as soon as the decision is made to proceed with the project, although also stating that "obtaining permits can take anywhere from 6 weeks to 6 years!" (p. 50)(exclamation point in original).

Off Grid: OGT identifies 13 federal agencies and correctly details some studies expected to be salient in obtaining federal permits (pp. 11, 19-20). No timeline is set.

Comments: In Lake Michigan, the United States Army Corps of Engineers will likely take the lead on federal permitting and any joint federal-state permitting process. The Department of Energy in a very recent 2011 report lists statutes and agencies involved in offshore wind. The DoE report draws on the 240-page 2010 NREL offshore wind report that devotes an entire chapter to permitting and states that the U.S. "is still establishing the regulatory pathways for offshore wind." That NREL report charted a timeline of approximately 18 months for all federal permitting. In April, 2011, the final permitting was issued for the Cape Wind offshore wind project in the Atlantic Ocean off Massachusetts.

Federal permitting in the Great Lakes isn't new. The universe of actors is known.

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8 Musial/Ram 2010, n.7, at 133.

Stakeholder opposition to permitting, or a federal lawsuit, are potential delay factors. The DoE recognizes that "the long and uncertain permitting processes" are slowing offshore wind deployment. However, multiple sources document federal intent to streamline permitting. That process is underway, and the knowledge base is growing. It is important to recognize that current federal policy strongly supports offshore wind development.10

B. State regulation.

Questions: The sole RFI question about state role occurs in the same §C(1) quoted above with respect to the federal role.

Mercury Wind: Mercury, as noted, identifies permitting as "the most difficult aspect" of the wind farm project. As with federal permits, Mercury identifies state permitting issues, including who even grants state approval, as "key uncertainties not known [sic] at this time." Mercury lists several state agencies as likely to be involved, and posits a 6-month timetable for "provincial" permitting, concurrent with federal permitting (pp. 49, 65, 66), to begin as soon as the decision is made to proceed with the project. Mercury also identifies the ownership and duration of leasing rights as issues.

Mercury devotes some discussion to Illinois ports. Mercury also notes that production tax credits are most effective in states that offer other support, but does not delve into Illinois's support mechanisms or discuss the impact of the state renewable energy portfolio standards.

Off Grid: OGT identifies limited state agencies or issues (pp. 11, 19-20). No specific timeline is identified. Off Grid offers little other discussion of state issues.

Comments: The RFI responses yield little information on state permitting, interaction with the state, and agencies involved. That said, the various federal reports (see notes 5, 7, and 10, supra) speak to the need for the states to take leadership on offshore wind, and especially in the Great Lakes, but Illinois has thus far failed to act. Although regulation sometimes can develop ad hoc, driven by developer initiative, the lack of a framework here is a disincentive to developers to spend time on serious proposals, given other (primarily economic) challenges. Without a framework in place, any developer faces the prospect of having to win approval for their particular project in both houses of the General Assembly, plus the Governor.

Assuming that Illinois eventually codifies a path for applications, likely the Department of Natural Resources, Department of Commerce and Energy, Illinois Commerce Commission, Illinois Power Agency, and Attorney General will have the most involvement in rulemaking and in administration of that process.

Evanston’s interest in this project is driving the State of Illinois to consider all of the issues raised by offshore wind development. Legislation is pending in the General Assembly to establish an Offshore Wind Energy Council to assess the opportunities and barriers to offshore wind in Illinois waters, and to recommend state policies and actions to develop the wind energy resource. Because the State owns the lake bottom, it could assert control over the process.

including any revenues produced by offshore wind projects. Evanston has a key advantage in having been first to propose such a facility. Sustaining that interest will be key if Evanston is to retain the option of control and participation in an offshore wind farm as the State develops its policies and approach to offshore wind energy development.

Meanwhile, the following Illinois statutes need study and impact a potential project:

**Illinois electric power generation, transmission, sale, and taxation statutes:**

- 220 ILCS 5: Public Utilities Act
- 20 ILCS 3855: Illinois Power Agency Act
- 65 ILCS 5 11-119.1-1 et seq.: Illinois Joint Municipal Electric Power Act

**Lake Michigan regulation statutes:**

- 5 ILCS §§ 605/0.01 to 605/02 (Submerged Lands Act of 1937)
- 20 ILCS §§ 801/3 to 801/5-5 (Office of Water Resources)
- 70 ILCS §§ 1815/2.5, 1820/2.14, 1821/2.14, 1835/2.14, 1845/2.14, 1850/2.14, 1855/2.14 (“navigable waters” “usable for water commerce” for port purposes)
- 70 ILCS § 1835/18 (permitting on obstruction of the navigable waters)
- 525 ILCS §§ 45/1 to 45/7 (Water Use Act of 1983)
- 615 ILCS §§ 5/4.9 to 5/30 (Rivers, Lakes, and Streams Act (esp. 5/7))
- 615 ILCS §§ 10/0.01 to 10/28 (Illinois Waterways Act)
- 615 ILCS §§ 20/1 TO 20/5 (Navigable Waterways Obstruction Act)

**C. State Regulation: Public Interest Doctrine**

**Questions:** The RFI did not specifically ask about the impact of the public interest doctrine, but the topic arose at the first meeting of the Wind Farm Committee, and the Public Affairs working group undertook some analysis.

**Mercury Wind:** Mercury, proactively, identifies the following "key uncertainties":

"E. Who grants the leasing rights and determines the length of the leasing rights in Lake Michigan?"

"F. What entity receives the annual leasing fees of Lake Michigan?" (p. 65)

**Off Grid:** OGT does not discuss the public trust doctrine.

**Comments:** Site control, the right to develop on a specific property, is key to any project. Unlike a land-based wind farm which is usually on private property, the wind farm and the transmission lines to shore, as well as, likely, a substation, necessarily are on lake bottom, which under longstanding common law is held in trust for the public. The "public trust doctrine" forbids alienation of that land to private actors for private purposes, and Illinois has been a particularly strong defender of that doctrine.

As summarized by one commentator, "The signature American public trust doctrine case is Illinois Central Railroad v. Illinois, an 1892 decision of the Supreme Court, in which Justice Stephen Field authored a majority opinion for the Court that held that the state could not
privatize most of the Chicago harbor without violating the public trust doctrine.¹¹ The doctrine retains vitality: on April 25, 2008, the trial court in *Protect Our Parks, Inc. v. Latin School of Chicago*, No. 08–CH–14027 (Cir. Ct. Cook Co.) entered a temporary restraining order (TRO) against construction of a semi-private soccer field on lakefront land, based in part on the public trust doctrine.

As noted, strong public policy favors the development of renewable energy, including offshore wind energy. The development of energy resources for the common good is often considered a public purpose. A lease, limited in time, is not the same as a sale, especially where there is little to no exclusion of the public as a result of the lease, and where no filling is to be done in the lake. The transmission cables are likely to be buried, according to the two developers. The impact on most lake uses from the offshore wind farm, at first glance, is far less than for the primarily shoreline conveyances that have run afoul of the doctrine.

CoE involvement may, additionally, strengthen the case against a public trust doctrine argument. Nevertheless, any RFP should require such analysis, because at minimum the issue will require public discussion.

D. County and regional regulation

**Questions:** The RFI did not specifically ask about county or regional regulation or permitting. Neither respondent specifically addressed the issue of county or regional regulation.

**Mercury Wind:** Mercury, proactively, identified "municipalities [other than Evanston] with potential visible impact" as parties that might require approval (p. 65).

**Off Grid:** OGT does not discuss local governments other than Evanston. The visible impact is stated to be less of an issue because of the lower profile of the OGT vertical turbines.

**Comments:** County and regional government are unlikely to be involved in permitting or have much say in the project. If transmission lines or facilities use county or regional rights of way or facilities, there could be involvement. The most likely involvement of other local governments would be if they partner with Evanston in a power district, power purchase agreement, or similar arrangement.

Asking developers to identify the involvement and impact of local governments other than Evanston should be part of any RFP, and the City, if aware of any such parameters, should proactively inquire about them.

E. City of Evanston regulation and role

**Questions:** The Public Affairs working group identified nine areas in the RFI requesting information about City role: (1) business structure; (2) capital requirements, financing &

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This analysis thus commanded most of the working group's attention. These sub-areas are discussed below, in order.

(1) **Business structure.** The RFI asked developers to "describe the City’s role, if any" in "your recommended business structure for the development and operation of an offshore wind facility."

**Mercury Wind:** Some of Mercury's response suggests a limited role for the City in business structure *per se*, recommending that Mercury "construct, manage, develop, operate, maintain, and eventually decommission the proposed wind farm" and that Evanston would not be involved in "maintaining, building, or owning the wind farm" (p. 18). Mercury expects that the City would aid the preferred developer in obtaining land lease rights (p. 18). However, Mercury also ties its discussion of a power purchase agreement to the City of Evanston, saying, "the average price of electricity for Evanston residents can be held constant at 14¢ per kW/h or less for the next 20 years" (p.23). This implies the City or an Evanston-specific entity as the PPA customer or re-seller. Mercury's discussion of a PPA is lengthy and includes sample clauses.

**Off Grid:** No discussion under "business structure."

**Comments:** The RFI advised that the developer would be assuming all responsibility for physical development of the wind farm. Only on closer reading does it appear that the RFI is silent and thus open-ended, and inviting ideas, as to "business structure."

Note Evanston has nothing to ask for in an RFP, and bidders have nothing to bid on, unless CoE is the power purchaser or aggregator\(^\text{12}\) or has effective control of the lake bottom.

The working group identified multiple models of municipal involvement in the business of the project. In all except (A) the City could secure other partners:

A) City has no role in project business (developer gains site control directly from state, finances project with no City involvement, and bypasses City to market the power)

B) Same as (A) but City leases or subleases lake floor access to developer

C) Same as (B) except City participates in a regional entity with one or more other institutions and/or governmental units (similar to Cleveland)

D) City has stake in project (see §E(2), *infra* p.8) and shares in revenue by contract or fee

E) City has stake in project as power purchaser (possibly in partnership with others), aggregator, or municipal utility, contracting for share of power and/or revenue

F) City owns and/or manages one or more aspects of project, e.g., cable

G) City is represented in wind farm management (e.g., on board of directors)

\(^\text{12}\) Guaranteeing a specific price to Evanston residents is also only possible if Evanston forms a municipal utility or sets itself up to aggregate power consumed in the city.
Working group recommendation: The City should actively explore, and ultimately define, its role in the project. No model can be ruled out or decided upon at the present time; City should advocate at state level for maximum flexibility under home rule. Meanwhile, a City committee or board should explore possible models in detail, especially with an eye to those that would facilitate the aggregation of a market for the output of the wind farm, that would address public trust doctrine questions, for which grant funding is available, and/or for which risk-spreading partnerships are possible, and make a recommendation to the City (a) before the City propounds an RFP and (b) in time to have input on establishment of the State of Illinois regulatory framework.

(2) Capital Requirements, Financing & Indicative Pricing. The RFI asked developers to "describe the City’s role, if any" in a section so titled.

Mercury Wind: Mercury stated that, with the City of Evanston being "financially challenged … a project of this scope and size would be highly risky and unadvisable for the city itself to finance." §1.2.1, p. 17.

Off Grid: No discussion.

Comments: The City could have an active role in financing or assuring financial feasibility of the project by (a) using its bonding authority, (b) acting as applicant, sponsor, or other conduit for federal, state, or private grants, especially in the study phase, (c) entering into pricing agreements, or (d) solely, or with other governmental units, acting as a power purchaser, municipal utility, or utility financing district. This discussion is bound up inextricably with the discussion of City role in "business structure." See §E(1) above.

Power purchase – demand at sustainable price -- is typically integral to the economic feasibility of any wind farm or other power plant. Although that calculus will be mainly a developer's, this group discussed it because it affects City role options and public reception. A purely private, market-driven development may not be feasible short-term due to current capital cost and energy pricing. Presently, the regional wholesale electricity cost is relatively low due to abundant coal and nuclear power, and domestic onshore wind, more mature than offshore wind,

17 The New England Wind Power forum has collected a list of federal grant, loan, and tax incentive resources; some potentially applicable to an Evanston project include the Federal Government Loan Guarantee Program, Clean Renewable Energy Bonds (CREBs), and the Renewable Energy Production Incentive (REPI). See also GLWEC Cleveland, supra n.6, ch. 11, esp. §§11.2.6, 11.2.7.9, and at Table 11-17 (p. 11-48 et seq.).
15 GLWEC Cleveland, supra n.6, at 11-24.
16 Current wholesale electricity prices in our region average less than $0.04/kWh, although these costs fluctuate and have been significantly higher. This is a function of supply, demand, and regulatory environment. Currently, the U.S. has a projected excess capacity of up to 100GW through 2013, with the midwestern region including northeastern Illinois accounting for 17GW of that. Bradley, et al., Ensuring a Clean, Modern Electric Generating Fleet while Maintaining Electric System Reliability (Aug. 2010), http://www.mjbradley.com/documents/MJBAandAnalysisGroupReliabilityReportAugust2010.pdf, at 6-7.
now can also offer power for significantly less than estimates for offshore.\textsuperscript{17}

While power costs and wholesale prices from installed plant do not equate 1:1, the offshore development cost clearly needs reduction, through technological progress, subsidy, or both, or there is significant disincentive for private investment on a solely profit-driven basis.\textsuperscript{18} Both government and industry recognize and expect this, and, going forward, price is expected to drop once the "first-time" costs of uncertainty and U.S. industry ramp-up are past.\textsuperscript{19} The Department of Energy has outlined a path to reduce offshore wind costs to 7¢/kWh by 2030.\textsuperscript{20}

Many mechanisms for lowering developer cost involve a role for the state or a local government as a development partner of some sort, although the federal government has the greatest means to subsidize, incentivize, or otherwise impact economics of a commercial-scale offshore project.\textsuperscript{21}

\textbf{Working group recommendation:} The City needs to explore options and then clarify and narrow its preferred choices before propounding an RFP.

\textbf{(3) Timeline.} "Describe the City’s role, if any" in "a timeline for development" and "any uncertainties" in scheduling, potential conflicts, and mitigation strategies.

\textbf{Mercury Wind:} Mercury states that, "The area of obtaining permits is where the City of Evanston can work on behalf of the developer to cut the timeline in half or at least reduce the waiting time." §1.6, at p. 50. Mercury previously mentioned, under its discussion of business

\textsuperscript{17} The EIA in 2010 estimated offshore wind "overnight" capital costs at $4,021/kW, and upped that estimate 49% for 2011, using mainly ocean-based projects. The EIA also boosted capital cost estimates for new nuclear and coal plants by 25%-39%. The EIA's location-based offshore wind cost estimates are currently raw, with the same figure reported for Illinois (Lake Michigan) as for a wind farm in the Pacific surf off of Hawaii. Energy Information Administration, \textit{Updated Capital Cost Estimates for Electricity Generation Plants} (Nov. 2010), http://www.eia.doe.gov/oiaf/beck_plantcosts/pdf/updatedplantcosts.pdf. The EIA did note that capital cost is only one driver of technology choices, with projected utilization rate, existing resource mix, capacity value, government policy, and portfolio diversification also affecting decisions. \textit{Id.}, at 5-6. The Cleveland study analyzed PPA pricings of between 17 and 22 cents/kWh in order to make the small pilot project attractive to investors.

\textsuperscript{18} Philanthropists, foundations, or corporations could conceivably invest for non-pecuniary reasons.


\textsuperscript{20} DoE Strategy 2011, supra n.5, at 15-16

\textsuperscript{21} Financial support could take the form of direct subsidies, tax credits, and/or private grants. See n.12. Additionally, portfolio standards that require utilities to purchase renewable resources raise demand for such power, especially if the standard includes a “carve out” requirement for offshore wind. A carbon tax or cap-and-trade regime would make wind power price more competitive with fossil-fuel-based power.
structure, a CoE role in obtaining FAA and other governmental permits, setting contract requirements, and aiding the developer in obtaining electrical interconnection permits.

**Off Grid:** No discussion.

**Comments:** CoE efforts to help establish a legal framework in Illinois (e.g., representation on a state commission to develop recommendations and/or legislation) would advance the timeline. Identifying ways and means to bridge any gap between current market price and cost of electricity produced by the wind farm also would move the project forward.

Permitting and stakeholder opposition are significant potential delay factors. City proactivity in identifying information needs, local steps, local stakeholders and concerns, and smoothing the path, even before actual response to RFP and choice of developer, could materially reduce contingencies that could adversely affect the development schedule. The City's own initial decisionmaking speed is also, obviously, a key factor.

**(4) Interconnection.** The RFI asked, "In what ways can the City facilitate the interconnection component of the project?"

**Mercury Wind:** Mercury under its business structure discussion refers to "aiding the preferred developer in: obtaining land lease rights... and aiding the developer in obtaining electrical interconnection permits from the local utility [and h]elping with obtaining construction permits and right of way easements to bury electrical interconnection cables under city streets as they are installed from the offshore wind farm to the substation." Under "Interconnection," Mercury discusses a "submarine cable from the offshore wind farm substation ... to the onshore electrical substation near the intersection of Dewey and Emerson streets."

**Off Grid:** No discussion of City role.

**Comments:** The City can expedite interconnection by identifying in advance all properties and rights-of-way likely to be impacted. The City should realize that economics incentivize building as large a project as possible. The working group discussed likely landfall sites as at the foot of Church Street or Lincoln Avenue. When the project moves forward, the City can make land available for the termination of the submarine cable and, if needed, construction of a substation. The City can facilitate the construction of the underground transmission line to the interconnection point, which most likely would be at ComEd's 345kV Skokie substation (Church and Laramie), rather than the 138kV Evanston substation on Emerson. In the interim, the City can avoid potentially conflicting projects.

**(5) Regulatory Approval Process.** The RFI asked, "Please identify any issues of concern related to the process of obtaining all anticipated permits and approvals for the development of the offshore wind facility. What key uncertainties are known or anticipated in this process at the federal, state and local levels and how would they be overcome? Describe the City’s role, if any."

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Mercury Wind: Mercury described CoE role "throughout this process" as "petitioning the State and Federal government to grant the regulatory approval to the preferred developer." See also Timeline, supra ("The area of obtaining permits is where the City of Evanston can work on behalf of the developer to cut the timeline in half or at least reduce the waiting time").

Off Grid: "We look to the City of Evanston to insure proper permitting and agreements on staging areas, land facilities and transmission lines during construction."

Comments: Assuming a developer has lead role in permitting, City sign-offs may be necessary, and will vary with ultimate role in the project. Title 7, ch. 17 of City code governs use of the public ways for electrical transmission. However, the City itself will not be applying for federal and state permits unless it has a formal role as, e.g., pilot project partner or municipal utility. The City may need to apply or be named as applicant if parts of the project are on City-owned land, but this would be very limited, perhaps non-existent.

In terms of expediting the process, the CoE can encourage the state's development of the legal framework for construction of the wind farm, maximizing protections and flexibility for the City and its residents. City sponsorship or partnership of the wind farm might facilitate agency review and approval. City leadership in aggregating and communicating information, enabling hearings, and making facilities available will be a critical factor in managing the known key uncertainty of stakeholder response.

(6) Environmental Issues and Anticipated Studies. The RFI asked, "Describe the City’s role in facilitating these studies and data collection, if any."

Mercury Wind: "The city’s roll [sic] in facilitating these studies and approvals should be two-fold. Granting the developer the necessary permits to collect wind data offshore and approving the correct organization to conduct the environmental assessments and studies that still need to be completed."

Off Grid: No discussion of City role.

Comments: The City might have no significant role in environmental assessments and studies other than minor permitting activity, but could seek grants, e.g., from the Clean Energy Community Foundation,23 possibly in conjunction with Northwestern University and/or one or more local or regional not-for-profit organizations, to complete the wind assessment, avian studies, etc. The City may have superior resources, or may act as a portal, with respect to the local economic impact aspect of environmental impact studies.

(7) Public Outreach and Stakeholder Engagement. The RFI asked, "Describe the City’s role, if any" in this topic.

Mercury Wind: No discussion of City role.

Off Grid: "We will rely on the City of Evanston to relay to the local public all pertinent and necessary information during all phases of this proposed project." See also Developer Expectations of City, infra.

Comments: The City, as representative of and accountable to the public, would play the central role in identifying stakeholders, establishing and maintaining stakeholder involvement and support, and aggregating, communicating, and addressing community concerns. City resources, e.g., as location for meetings and hearings, on its website, in its e-mail communications, and in its print newsletters, would be natural and logical channels for outreach and engagement. See discussion at §§E(3) and E(5), supra, and §E(9), infra.

Note that the City could have considerable support in these efforts. The federal Department of Energy's Wind Powering America program exists specifically as an "outreach and stakeholder engagement initiative" and encourages, via awards and grants, municipal development of wind energy. See generally http://www.windpoweringamerica.gov/

(8) Economic Development Opportunities. "Describe the City’s role in facilitating economic development, if any."

Mercury Wind: "The City of Evanston can aid economic development by giving each developer a list of companies located in Evanston, Chicago, and throughout Illinois that are interested in bidding in on the proposed offshore wind farm. There are many construction companies in Illinois; however, it takes a considerable amount of the developer’s time to seek out all interested subcontractors. However, the city can access this information in many cases much more quickly than a developer."

Off Grid: No discussion of City role.

Comments: Wind farms create many jobs, with the greatest number directly created in the construction period, although the greatest overall impact is in the supply chain. Wind farm construction itself here will likely be staged from a deepwater harbor and one or more large vessels, possibly constructed regionally, given barriers to Great Lakes navigation. The wind farm control center will most likely be combined with its maintenance support facilities, also likely located at a deepwater harbor. Evanston will not benefit directly from deepwater harbor economic development opportunities, but some residents may become employed in the many construction-related jobs a wind farm would create over a number of years.

Manufacture of the highly specialized oversized components for the wind farm and its installation is very unlikely in Evanston. The possibility for light manufacture of the many smaller components of the turbines, or of other aspects of the supply chain, needs to be explored.

Planning, architectural, managerial, and financial work created by the project could conceivably be filled by Evanstonians, and offices located here. Some white-collar personnel could relocate here at least temporarily. Some economic opportunity exists for City businesses and residents relating to the underground transmission cable extending from the lakefront to the interconnection point, including economic activity related to streets work.

Restaurants, hotels, and recreational facilities could all experience positive benefit from the long, ongoing project. While both developers and the CGE FAQ posited the wind farm, if first in Lake Michigan, as a tourism driver, most members of the working group discounted this.

Assessing the economic impact is beyond the scope of this working group; the real question is City role. Evanston at minimum can act as a portal matching suppliers and employers with vendors and materials/labor resources, advocate with project developers and partners to locate offices here, and can use the wind farm as a significant branding tool. Space and a nearby labor force exist for supply chain light manufacturing. The City will have multiple options in choosing how or whether to pursue or leverage the above opportunities.

(9) **Developer Expectations of the City.** "Please indicate the roles of the City that, if not already defined, are desired or required to facilitate the development of the offshore wind facility."

**Mercury Wind:** "Mercury Wind does not currently have any expectations from the city of Evanston."

**Off Grid:** "We would like to consider the City of Evanston as the 'Project Champion' to help facilitate all aspects of the project from feasibility to Development and eventual Operation and to carry out all and necessary task as the Municipal Sponsor."

**Comments:** National policy documents on the future of offshore wind power repeatedly speak to the critical role of state and local leadership. Societal and technological change, positive or negative, as well as its pace, turns on public as well as private support and opposition. Minimizing costs and maximizing desired benefits of the offshore wind facility for all concerned depend at least in part on the degree to which the City takes leadership and guides, at minimum, the public conversation. It is difficult to imagine that such a project could succeed with the City as a disinterested neutral.

A more active role would be more consistent with the inspiration for the wind farm project in the first place. An offshore wind farm was the centerpiece, accounting for the largest proportion of envisioned greenhouse gas emissions reductions (up to 80,379 MTCO2E out of a potential total reduction of 245,380 MTCO2E), in the Climate Change Action Plan, approved by the City of Evanston in November, 2008.25

**F. Stakeholders and public opinion**

As §§A, E(5), E(7), and E(9) above make clear, engagement and communication with stakeholders becomes a key challenge. The more buy-in, the less delay and cost, the more attractive the project is to investors, and the greater the opportunities to leverage benefits such as

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25 Evanston Climate Change Action Plan, November 2008 ["ECAP"] at 9
municipal branding. Perhaps more important, such engagement and communication has great value in its own right to any city committed to the ideals of representative self-government.

The working group identified stakeholders and actors upon public opinion falling into five general sectors: economic interests (commercial and residential); advocacy interests (including environmental, neighborhood, or other municipal interests); recreational interests (boaters, fishers, birders); politicians; and media. Some overlap.

Dozens of stakeholders were initially identified, apart from a media list. This list will expand when and if the City proceeds to the next phase. At this juncture little identified debate has occurred, but Evanston's active citizenry virtually guarantees some diversity of opinion. No political opposition was specifically identified at this point. Some groups, officials, and media have taken positions ranging from mildly supportive to enthusiastic. There have been a few negative editorials and blog posts, and individual comments, with concern or criticism centered on the economics, the aesthetics ("view shed"), or perceived avian threats. Some residents have understandable questions. There is also considerable lack of awareness of the possible project. Some with experience in the power industry have privately expressed skepticism. Again, City leadership and communications will be central to shaping public and private perception.

Other American offshore wind studies have already noted the importance of stakeholder engagement and have collected strategies for engaging stakeholders. While full public engagement may not be productive prior to the receipt of any actual proposal, engagement of at least key stakeholders earlier in the process can facilitate the development of a consensus.

**Working group recommendation:** The City, before propounding an RFP, should amplify the process of public engagement and communication, including the development of simple tools (such as a website FAQ page) for those purposes, and to dispel misinformation.

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26 Preliminary **Evanston stakeholder groups** identified include Citizens for Lakefront Preservation; Citizens’ Greener Evanston; Evanston Coalition for Responsible Development; Evanston Township High School; Northwestern University (administration; faculty; student government; student groups such as ISEN; residence and Greek councils); Business Alliance for a Sustainable Evanston; Evanston Environmental Association; Evanston Interreligious Sustainability Circle; Evanston North Shore Bird Club; Keep Evanston Beautiful; Central Street Neighbors Association; Downtown Residents Association; Southeast Evanston Association; Evanston Chamber of Commerce; Downtown Evanston; League of Women Voters (Evanston); neighborhood business associations. **Statewide or regional groups** include the Illinois Wind Energy Association; Alliance for the Great Lakes; Citizens Utility Board; Sierra Club; Audubon Society, Illinois Chapter; Ducks Unlimited, North Shore Chapter; Great Lakes Sport Fishing Council; Burnham Park Yacht Club; Chicago Yacht Club; Chicago Yachting Association; Columbia Yacht Club; Diversey Yacht Club; Great Lakes Yacht Club; Lake Calumet Boat and Gun Club; Lake Michigan Yacht Club; Lake Michigan Yachting Association; Montrose Bay Yacht Club; Museum Shores Yacht Club; Sheridan Shores Yacht Club; Southern Shores Yacht Club; Waukegan Yacht Club; Winthrop Harbor Yacht Club; American Waterway Operators; Lake Carriers Association. **Other municipalities** include Chicago; Glencoe; Highland Park; Highwood; Kenilworth; Lake Bluff; Lake Forest; North Chicago; Waukegan; Wilmette; Winnetka; Winthrop Harbor; Zion.

27 See the discussion of market barriers and public acceptance at Doe Strategy 2011, supra n.5, at 27-28, and the plan outlined in chapter 12 of the Cleveland study, GLWEC Cleveland, supra n.6, at 12-1 et seq. However, generally, public support for wind energy is high in Illinois. **Public Beliefs and Opinions: Wind Energy in Illinois** (Center for Renewable Energy, June 2010).
<table>
<thead>
<tr>
<th>Statute</th>
<th>Agencies</th>
<th>Impact on offshore wind projects</th>
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<tr>
<td>National Environmental Policy Act of 1969 (NEPA)</td>
<td>All federal agencies</td>
<td>Requires federal agencies to consider the potential environmental impacts of proposed federal actions. For any major federal action that is likely to result in significant environmental impacts, agencies must prepare an Environmental Impact Statement (EIS).</td>
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<tr>
<td>Endangered Species Act of 1973</td>
<td>FWS; NOAA NMFS</td>
<td>Requires federal agencies to consult with the FWS and NOAA NMFS to ensure that proposed Federal actions are not likely to jeopardize the continued existence of any species listed at the federal level as endangered or threatened, or result in the destruction or adverse modification of critical habitat.</td>
</tr>
<tr>
<td>Marine Mammal Protection Act of 1972</td>
<td>FWS; NOAA NMFS</td>
<td>Prohibits, with certain exceptions, the take of marine mammals in U.S. waters by U.S. citizens on the high seas, and importation of marine mammals and marine mammal products into the U.S.</td>
</tr>
<tr>
<td>Magnuson-Stevens Fishery Conservation and Management Act</td>
<td>NOAA NMFS</td>
<td>Requires federal agencies to consult with the NMFS on proposed federal actions that may adversely affect essential fish habitats necessary for spawning, breeding, feeding, or growth to maturity of federally managed fisheries.</td>
</tr>
<tr>
<td>Marine Protection, Research, and Sanctuaries Act of 1972</td>
<td>EPA; USACE; NOAA</td>
<td>Prevents the dumping of certain materials without a permit from the EPA. For ocean dumping of dredged material, the USACE is given permitting authority.</td>
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<tr>
<td>National Marine Sanctuaries Act</td>
<td>NOAA</td>
<td>Prohibits the destruction, loss of, or injury to any sanctuary resource managed under the law or permit.</td>
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<tr>
<td>Coastal Zone Management Act of 1972</td>
<td>NOAA Office of Ocean and Coastal Resource Management (OCRM)</td>
<td>Specifies that coastal states may protect coastal resources and manage coastal development.</td>
</tr>
<tr>
<td>National Historic Preservation Act of 1966</td>
<td>NPS; Advisory Council on Historic Preservation; State or Tribal Historic Preservation Officer</td>
<td>Requires each federal agency to consult with the Advisory Council on Historic Preservation and the State or Tribal Historic Preservation Officer before allowing a federally licensed activity to proceed in an area where cultural or historic resources might be located.</td>
</tr>
<tr>
<td>Federal Aviation Act of 1958</td>
<td>FAA</td>
<td>Requires that, when construction, alteration, establishment, or expansion of a structure is proposed, adequate public notice be given to the FAA as necessary to promote safety in air commerce and the efficient use and preservation of the navigable airspace. Establishes BOEMRE as the lead authority to regulate offshore wind in federal waters. (Note that under the Federal Power Act, per an MOU between DOI and FERC, FERC has the lead role in regulating offshore kinetic energy, such as wave energy devices.)</td>
</tr>
<tr>
<td>Federal Power Act</td>
<td>FERC; BOEMRE</td>
<td>Establishes BOEMRE as the lead authority to regulate offshore wind in federal waters. (Note that under the Federal Power Act, per an MOU between DOI and FERC, FERC has the lead role in regulating offshore kinetic energy, such as wave energy devices.)</td>
</tr>
<tr>
<td>Ports and Waterways Safety Act</td>
<td>USCG</td>
<td>Authorizes the USCG to implement measures for controlling or supervising vessel traffic or for protecting navigation and the marine environment.</td>
</tr>
<tr>
<td>Rivers and Harbors Act of 1899</td>
<td>USACE</td>
<td>Delegates to the USACE the authority to review and regulate certain structures and work that are located in or that affect navigable waters of the United States, including submarine cable systems.</td>
</tr>
<tr>
<td>Outer Continental Lands Act of 1953</td>
<td>DOI</td>
<td>Granted the Department of the Interior with the authority to lease submerged lands on the Outer Continental Shelf. The Energy Policy Act of 2005 amended this act to give DOI the authority to lease renewable energy, including offshore wind, on the OCS. Prohibits the discharge of oil or hazardous substances into waters or adjoining shorelines which may affect natural resources belonging to the United States.</td>
</tr>
<tr>
<td>Clean Water Act FWS; NOAA NMFS</td>
<td>EPA, USCG</td>
<td>Prohibits the discharge of oil or hazardous substances into waters or adjoining shorelines which may affect natural resources belonging to the United States.</td>
</tr>
<tr>
<td>Clean Air Act</td>
<td>EPA, BOEMRE</td>
<td>Prohibits federal agencies from providing financial assistance or issuing approval for activities that do not conform to approved plans for achieving National Ambient Air Quality Standards. Requires the EPA (or authorized state agencies) to issue a permit before the construction of, or major modification to, any major stationary source of air pollution.</td>
</tr>
</tbody>
</table>
Off Grid Technologies and Mercury Wind’s responses address some but not all of the items sought in the City’s RFI. This Executive Summary presents certain highlights of those full submissions. The detailed analysis of the Working Group is submitted along with this summary and should be referred to for a full treatment of the issues. In summary, the responses present the following:

1. **Siting:** Each response proposes a site 7-9 miles into Lake Michigan, directly out from the Northwestern campus in Evanston as stipulated in the RFP.

2. **Size of Wind Farm:** The responses envision an area of approximately 1.5 square miles to accommodate the wind farm. Mercury Wind proposes 30-80 turbines, 600 feet in height, depending on the electricity capacity chosen for the project. Off Grid proposes 20 turbines over only 140 acres of the proposed site.

3. **Power Capacity:** Mercury proposes a capacity of 100-250 Megawatts (MW). Off Grid proposes 200 MW for the initial project.

4. **Visual Impact:** Very little valuable, factual information was presented on this topic. Mercury proposes painting the turbines blue or grey to reduce visual impact. Off Grid states that their proposed turbines would be low profile and therefore would not have a visual impact. Off Grid’s proposed turbines are not fully described nor currently proven in the field.

5. **Wildlife Impact:** Essentially, the responses state that these are to be determined. Mercury states that the turbines tend to serve as reefs for the congregation of fish. Each acknowledges that formal studies will be necessary to determine the impact on birds and bats.

6. **Impact on Boating/Shipping/Aviation:** Mercury states that the turbines would be 2000 feet apart and that barges are a maximum 225 feet wide. Mercury indicates that there will be a 100 foot clearance from the surface of the water to the lowest point of a rotor blade. At seven-plus miles out, interaction with recreational boaters would be infrequent. Emergency equipment will be on the turbines, such as rafts, phones, etc. Aviation likely would not be impacted because the maximum height will be 600 feet above the surface of the water.

7. **Dock Facilities for Construction and Maintenance:** The project would require a deep water port and staging area for construction. The most likely locations would be Port of Chicago on the south side of the city, or locations in Indiana or Wisconsin.

8. **Electric Interconnection:** An off shore substation would be required for each 150 MW of capacity. An underwater cable, buried four feet below the lake bed, would run to a connection point on shore and then continue under the streets to the ComEd high voltage substation at Emerson and Dewey. (In fact, interconnection may need to occur at another location rather than Emerson and Dewey.)
Project Siting and Size of Facility Working Group

A. SUMMARY OVERVIEW:

This working group was tasked with summarizing the siting and facility size information presented by respondents to the City of Evanston’s (“Evanston”) “Request for Information” (“RFI”) for an off-shore wind farm development in Lake Michigan. The Group also has provided comments where it deems appropriate. The respondents to the RFI include:

- Mercury Wind (“Mercury”) and
- Off Grid Technologies (“OGT”).

The two responses varied in detail and content. In some instances the respondents made incorrect or unsupported assumptions, or failed to address certain questions altogether. In others, information outside the scope of the RFI was presented.

Both responses propose wind turbines located within the bounds of the site specified in the RFI. Mercury’s response suggests a project with a capacity of between 100 and 250 megawatts using traditional vertical wind turbines. Mercury proposes a location seven to nine miles from shore, and concludes that a minimum capacity of 100 MW is necessary to achieve economies of scale and profitability.

OGT proposes the use of large, horizontal turbines (10 MW per turbine) that appear to represent novel or emerging technology. OGT proposes an initial development of twenty such turbines that would fill 140 acres of the “796 acre offshore site” located seven miles from shore, with an initial capacity of 200 megawatts. OGT also estimates that the total 796 acre project area could ultimately accommodate one hundred, 10 MW horizontal wind turbines, for a total potential capacity of 1,000 megawatts.

On the subjects of permitting and environmental assessments, both responses indicated that permits and site assessments will be required from various government agencies, but did not identify them with specificity.

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1 The footprint of the project area in the RFI is 1.5 square miles located 6 to 9 miles off-shore. Each square mile contains 640 acres. The total project area of 1.5 square miles, therefore, contains a total of 960 acres.
MAYOR’S WIND FARM COMMITTEE
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Working Group Committee Members:
Nicolai Schousboe; Tom Cushing; Nathan Kipnis; Bill Wagner; and Tom Carey

B. ITEMS TO BE ADDRESSED:

Describe the main components that fall under this topic and the facts as the committee understand them today.

RFI Wind Farm Program Parameters Regarding Proposed Location and Size (RFI Sections II & III):

- Relative close proximity to Evanston with potential to accommodate large scale wind energy development;
- Proposed site area of 1.5 square nautical miles (+/- 1.9 square miles);
- Proposed distance from Shore at 6-9 miles directly east of Northwestern University;
- Assumed available design wind speed of 8 meters/second ("m/s") (+/- 18mph) at 65 meters ("m") (+/- 213 feet) above average lake water level: and
- Assumed water depth at +/- 42 – 98 feet below surface at site area.

I. Siting Information Issues Raised in the RFI (RFI Section IIIA):

1. Address Public Impacts, Including Aesthetics (RFI IIIA.3);
2. Effect on Marine Life, Lake Environment and Fishing (RFI IIIA.3);
3. Effect on Migratory Birds (RFI IIIA.5);
4. Effect on Recreational or Commercial Boating (RFI IIIA.3);
5. Effect on Recreational or Commercial Aviation (RFI IIIA.3);
6. Wake Effects on Production and on Component Fatigue Loads (RFI IIIA.5) (While this may be Siting-dependant it might be more appropriately addressed by the Technology and Equipment Sourcing Working Group.);
7. Need for One or More Offshore Substations (RFI IIIA.1);
8. Location of Converter Stations (HVDC option), Lake Floor, Routing and Landfall Considerations (RFI IIIA.1);
9. Address Availability of Appropriate Port Facilities (RFI IIIA.3);
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10. Other Public Impacts: Property Values, Tourism, Public Safety and Security, Decommissioning and Restoration (RFI IIIC.3);
11. Port Development and Enhancement (RFI IIIC.4); and
12. List of Pre-emptive Site Data Collection & Analysis Supporting Siting Recommendations (RFI IIIC.2).

II. Sizing Information Issues Raised in the RFI (RFI Section IIIA):

13. Address Public Impacts, Including Aesthetics;
14. Technical Limitations: Foundations, Fabrication, Construction Logistics, Existing Distribution and Substation Availability, Economy of Scale, Proven Availability or Dependability in the Market, etc. Size (RFI IIIB.2);
15. Specific Stated Program Requirements: Obtain maximum amount of power, build to a maximum budget, maximize economic return on investment, etc. Size (RFI II);
16. List of Pre-emptive Site Data Collection & Analysis Supporting Siting Recommendations (RFI IIIC.2); and
17. Proposed Incremental Threshold Options and Resulting Pros and Cons.

C. INFORMATION PROVIDED BY RFI RESPONDENTS

The task of this committee was to provide Evanston’s mayor and city council with a summary of the information provided by each of the RFI respondents as they relate to the key components of the RFI as described above.

I. Siting:
1. Address Public Impacts, Including Aesthetics:

Mercury:

- Mercury states that placing the turbines 7 miles from shore will reduce “visual impact by 50%,” and painting them will reduce the visual impact by an additional 20%. No explanation or bases for those statements are given. P66.2
- Mercury states that if visual aesthetics become a red flag issue, mitigation could include using floating foundations at 10 miles. Mercury states that at 10 miles the curvature of the Earth would render the turbines invisible to the naked eye. P 52.

2 The page numbers listed refer to the page numbers in Mercury’s and OGT’s respective RFI responses where the information presented was obtained.
OGT:
- OGT states that there will not be a visual impact due to the “low profile” of their vertical axis design. OGT further asserts that their proposed tower / turbines are “aesthetically pleasing.” P 24.

Working Group Comments:
Mercury’s statement that the visual impact will be reduced by 50% if the turbines are located ±7 miles offshore is unclear, especially in light of the RFI statement that the turbine farm will be located 7 to 9 miles offshore.

Mercury’s statement that placing the turbines ten miles offshore will render them invisible from shore is not borne out by the calculations of the Working Group.

2. Effect on Marine Life, Lake Environment and Fishing:
Mercury:
- While this issue may exist wherever a project is sited in the Lake, Mercury makes a case that the underwater structure tends to provide artificial reef areas for spawning and attracts concentrations of fish based on a referenced study in Europe. Mercury indicates that with lack of net trawling there should be no “significant adverse affect” for either commercial or recreational fishing. P67-68.

OGT:
- OGT provides some general description of the lake bed and location of fish but does not address how to mitigate if there is a problem. OGT further indicates that impacts on fishing and navigation cannot be determined at this time, but will thoroughly research during the feasibility phase of the project. P 21, 24.

3. Effect on Migratory Birds:
Mercury:
- Mercury asserts that the greatest density of birds is likely to be closest to the shore, and “decline dramatically at distances greater than one mile” from the shoreline, concluding that the wind farm would not be damaging to birds. Mercury recommends that a field study be performed when further refinements to the proposed project are completed. Mercury does not indicate how to mitigate potential effects on migratory birds. P48.
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OGT:
- OGT gives an explanation of how Migratory Birds are banded, migration routes are determined, and where general routes occur, but does not address how to assess migratory bird issues and related mitigation steps if necessary. P 21.

Working Group Comments:
No authority is cited by either respondent on this issue. An environmental assessment or study of any project’s potential impacts on migratory birds certainly would be required. The project site reflected in the RFI may pose an issue for migratory birds traveling from Canada south over Lake Michigan. According to Judy Pollack of the Audubon Society, a study has been initiated recently to look into this issue.

Additionally, there is a concern about bat populations which will require study. An initial thought on this is that bats, being land-based, are less likely to be impacted at the site over the water than migratory bird populations.

4. Effect on Recreational or Commercial Boating:

Mercury:
- With regard to recreational boating, Mercury suggests that only a small number of Evanston residents would ever encounter the facility. (“Very few residents will ever boat more than 5 miles off shore. It is estimated that less than 2% of Evanston residents will ever boat on the water.”) P 67.
- On the plus side, according to Mercury, several life saving devices (rafts, lights, ladders, phones, etc.) would be made available on each turbine for boaters needing emergency assistance.
- Regarding spacing, Mercury states that there would be 2000 feet between turbines and that the largest lake barges are 225 feet in width - suggesting that the spacing would “easily accommodate” the largest barges.
- Mercury states that the lowest point of a rotor would be 100 feet above the water level, accommodating 95% of all sailboats.
- Mercury indicates that they have consulted with the Coast Guard regarding the proposed facility and shipping lanes.
- The facility would provide lighted waypoint markers. P 67-68.
OGT:

- OGT states that they will have a close and consistent engagement with all stakeholders regarding commercial navigation. P 20, 24, 25.

Working Group Comments:

The Group tends to agree that it is unlikely that a vast majority of recreational boats typically would venture out seven miles from shore, but wondered about the potential fate of the 5% of sailboats tall enough to encounter the rotor blades.

5. Effect on Recreational or Commercial Aviation:

Mercury:

- Mercury states it has researched FAA requirements and has preliminarily considered private, military, and commercial flight issues. All proposed structures over 200 feet must be evaluated and permitted by the FAA. P 68.
- According to Mercury, the highest point on a turbine blade would be 600 feet from the lake’s surface. Mercury asserts that most small private planes travel above 3000 feet, and concludes that “there should be no problem.”
- According to Mercury, commercial aircraft travel above 35,000 feet until they descend, in preparation for landing, to 3000 feet when they are 15 miles from the airport. P68.

OGT:

- OGT states that they will have a close and consistent engagement with stakeholders regarding aviation. P25.

Working Group Comments:

With regard to potential small aircraft obstructions, perhaps there should be a more definitive answer rather than “there should be no problem.”

While further study will be necessary on this subject, there appear to be no ‘red flags’ showing on this item.

6. Wake Effects on Production and on Component Fatigue Loads (RFI IIIA.5):

Mercury:
Based on “industry standard” and assumed wind speeds, Mercury suggested placing the turbines a distance of a minimum of 7 to 10 rotor lengths apart. Their analysis then suggested placing the turbines 5 rotor diameters apart in the direction perpendicular to prevailing winds, and 10 rotor diameters in the direction facing the prevailing winds. They then calculated the megawatt return per square nautical mile. A final determination will require the collection of all MET data. P42, 43.

OGT:
- No comments from OGT.

Working Group Comments:

*Wake Effect* here refers generally to the reduced speed/energy and altered turbulence of wind caused by its encounter with a turbine.

7. Need for One or More Offshore Substations:

Mercury:
- Mercury recommends an off shore substation for every 150MW of wind turbines and an interconnection location at an on shore utility substation. The on shore interconnection substation is where they suggest that responsibility changes from the wind farm owner to the utility grid owner. P52.
- Mercury made the basic assumption that there would be an off shore substation. P50.
- The on shore electrical substation is assumed to be located at Dewey and Emerson, which is approximately 1.4 miles inland and owned by ComEd / Exelon. The 1.4 mile land based cable will need to be buried underground and would therefore need to be coordinated with the City of Evanston’s roadwork schedule. P52, 53.

OGT:
- The only comment from OGT regarding substations is that the issue will be considered. P20.

8. Location of Converter Stations (HVDC option), Lake Floor, Routing and Landfall Considerations:

Mercury:
- Mercury suggests burying the cables from the wind farm 3-4 feet under the lakebed. The line would come ashore to a small underground cable connection pit and then proceed to the ComEd high voltage substation at Emerson and Dewey. P53.
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- Mercury recommends an AC interconnection. HVDC (high voltage direct current) is not cost effective at a distance of less than 50km, as in the proposed case. P52, P53.

OGT:
- No comments from OGT.

9. Address Availability of Appropriate Port Facilities:
Mercury:
- Mercury states that a ¼ mile lakefront facility is required in conjunction with a deep water port as a staging area for the components. P61-62.
- Mercury Wind suggests either the Evanston shoreline for port development as a staging area or one of three ports investigated in Illinois, Indiana or Wisconsin. P70.
- The Evanston shoreline lacks the rail connection and deep water facility required for the project, although Mercury expressed its willingness to build a marina and port for Evanston at no charge to the city. P 70.
- The option of developing a new marina between Davis/Church and Clark Street beaches for an O&M facility suggested a development synergy for marina and restaurant to support the new monitoring facility. P44, 45.
- For operating and maintenance, Mercury identified three “ideal” port locations from which to perform those functions: Winnetka Electrical Utility Dock, Wilmette Harbor or the Evanston Dock near Church Street Beach; the closer to the Wind Farm, the better. P 44

OGT:
- No comments from OGT.

Working Group Comments:
The Evanston dock is certainly not a deep water facility, and utilizing Evanston, Wilmette or Winnetka lakefront for industrial/construction purposes would dramatically alter the character of those locations. Waukegan, Port of Chicago, Gary, and possibly sites in Michigan could be plausible port locations.

10. Other Public Impacts: Property Values, Tourism, Public Safety and Security, Decommissioning and Restoration:
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Mercury:

- Mercury states that impact on real estate value is completely arbitrary, but believes that property values will increase, based in part on the comparison to Hawaii’s experience, where there are land based wind farms and where property values are high. P 67.
- “[T]he Federal government believes that turbines increase the property value, therefore, they tax it. Mercury Wind is not suggesting that the city raise taxes on lake shore residents, simply noting that property values will increase.” P 67.
- Mercury expects minimal effect on tourism and suggests they would like to conduct tours for a small fee. They cite wind farms in Hawaii for the proposition that turbines do not hurt tourism. P 69.
- Mercury suggests benefits to safety and security from the Wind Farm include guidance, lighting, fog horns, off shore distress phones, off shore inflatable rafts and emergency off shore boat anchorage points. In the event of a catastrophic power outage the wind farm provides continued power. P 69.
- Mercury’s investigation suggests decommissioning would take up to 2 years, with six months for the tearing down of the project and six to twelve months for the restoration of the site. P 69.

OGT:

- OGT states that public safety and security will be thoroughly researched during the feasibility phase, but because of the offshore location OGT believes this will not be an issue. P 20, 24.

11. Port Development and Enhancement:

See responses for item 9. above.

12. List of Pre-emptive Site Data Collection & Analysis Supporting Siting Recommendations:
Mercury:

- Mercury suggests that the number of studies will be as required by the city, state, and federal government, but that this will be mostly related to permitting. They suggest a 6 to 12 month onsite wind study and a 1 to 4 month interconnection feasibility study.

OGT:
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• Reducing data collection costs are noted on page 20. The goal of partnering with another company to study the wind feasibility is noted on page 23.

Sizing:

13. Address Public Impacts, Including Aesthetics:

Mercury:

• Mercury anticipates that the public response to the wind farm will be generally positive, with the exception of a few Evanston residents objecting because of visual impact or bird migration. Mercury states that the developer will engage key stakeholders who may be against the wind farm. P66.

• Mercury would paint the turbines light gray or light blue to blend in with the horizon. P66. See also item C 1. above.

OGT:

• OGT expects that aesthetics and noise will not be a factor because of their unique wind tower / turbine design. OGT further claims that its proposed wind tower / turbine design would be “aesthetically pleasing.” P24.

14. Technical Limitations: Foundations, Fabrication, Construction Logistics, Existing Distribution and Substation Availability, Economy of Scale, Proven Availability or Dependability in the Market, etc.:

Mercury:

• Foundations: Mercury describes the three main types of off shore foundations (monopole, gravity and floating) and suggests that the final decision on which to use will follow a geotechnical survey. They do not recommend a floating foundation as such a foundation is currently not well proven. P59, 60.

• Fabrication: Did not find specific response but is generally built into the rest of the document.

• Construction Logistics: Mercury recommends shipping components by rail is cheaper than by truck, but shipping by barge/ship would be the best method. Any solution would be dependant on the location of an equipment staging area. P60
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- Distribution and Substation Availability: See response to item number 7 in Siting, above.
- Economy of Scale: Mercury shows analysis of various capacity turbines in chart form, ultimately recommending the use of 3 to 3.6 megawatt turbines. P 16
- Mercury discusses the ready availability and dependability of wind power, including offshore wind power, in recent years. P 58, 59. Mercury asserts, “now getting +95% availability out of your offshore wind farm is not unheard of.” P 59.
- Mercury discusses the existing technologies for mounting the turbines, and concludes that under current circumstances installing turbines more than 9 miles offshore is not recommended because of water depths greater than 100-120 feet. P 13, 14.
- Note, a chart on page 15 shows that 88% of all offshore wind farms are using monopile foundations, with 8.5% using gravity types. Floating foundations are an emerging technology.
- Ice is a concern with offshore wind farms in fresh water. However, Mercury’s RFI response states that offshore wind farms in fresh water have demonstrated that foundations can be designed to withstand certain types of ice, using “ice cone’s.” P 17.

OGT:
- They state that the year of construction will be 2012. P 12.
- They state that the giant turbine systems have the capability to reduce the scale of the proposed wind farm by 90%. P 7.
- OGT proposes to deal with icing via geothermal heating of the interior systems at the base of each 10 MW system. P 16.

Working Group Comments
The Group believes there may be only one offshore wind farm in fresh water subject to freezing, and that that is a relatively new wind farm. Icing concerns remain an open question.
Construction completion by 2012 is wildly optimistic.

15. Specific Stated Program Requirements: Obtain maximum amount of power, build to a maximum budget, maximize economic return on investment:

Mercury:
No response from Mercury.
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OGT:
- The maximum power output from 796 acres using a conventional 3.0 MW turbine will require only 12.4 acres of space per turbine, therefore providing a maximum of 64 turbines within the 796 acres. Assuming conventional turbines, this provides ‘only’ 192 MW of power. OGT claims that using their turbines in the same 796 acres would produce 1GW of power using only 100 turbines (from their preliminary data). P8.
- OGT goes on to further state that the largest turbine in the world can produce a maximum of 5 MW, but that one of their large magnetic levitation (maglev) wind turbines can produce 1GW (1000 MW) of power, enough to supply 750,000 homes. P9.
- Their ROI is stated to be ‘extremely favorable’ in class wind zones of 4 and 5. P16.

Working Group Comments
The statement regarding breakthrough gains in power from OGT’s proposed turbine raises real questions given that OGT has no actual installations of this technology. OGT’s assertion that its system will be more than five times more efficient than proven technology should be considered with caution.

It is almost inconceivable that a single turbine that could produce 1 gigawatt (1000 megawatts) of power. This may be a typo in OGT’s RFI response. OGT is stating that their system can produce 200 times the amount of power of a proven system.

Additionally, OGT claims that their proposed system will increase generation capacity by 20%, decrease operational costs by 50%, and enjoy a lifespan of 500 years, ‘far exceeding the 20-25 years of conventional wind turbine designs.” This does not seem plausible without further supporting information.

16. List of Pre-emptive Site Data Collection & Analysis Supporting Siting Recommendations:

See responses to C 12. above.

17. Proposed Incremental Threshold Options and Resulting Pros and Cons:

None noted by either Mercury of OGT in their respective RFI responses.
A. SUMMARY
The Technology and Equipment Working Group was asked to consider the responses to the RFI to judge if technology and equipment questions represent a clear way to distinguish the two responses and if this viewpoint provides suggestions for the City’s next steps.

1. In general, Mercury’s response described standard, commercially available technology. Off Grid specifically promoted technology that has yet to be proven at the industrial level and in a maritime environment. Off Grid claims their technology represents a distinct advantage over conventional equipment. Mercury’s use of widely available equipment and approaches implies they will be able to competitively bid the equipment and construction materials.

2. Both responses are committed to Chicago area job creation, which will help hold down expenses as the cost to transport much of the material is high and thus needs to be manufacturer locally.

3. Both respondents expressed unrealistic schedules relative to constructing the necessary factories, infrastructure and procuring the required specialized equipment.

4. For both RFI respondents and any other developer that enters the discussion, there is no process to specifically analyze the technology to be used, except in relation to construction methods (Army Corps of Engineers) and an indirect analysis of the technology occurs during environmental analysis. Thus, a role for the City going forward is to demand that the technology being considered is thoroughly analyzed.

5. Mercury has provided clear options for construction. Mercury provides much greater detail and proposes using conventional maritime construction techniques.

6. Mercury proposes an offshore sub station and provides much greater detail overall about cabling than Off Grid. Preliminary research by the committee shows cabling strategy needs to be carefully considered as recent European experience has shown this area needs more attention than previously thought.

7. Both proposals recognize the need for a commercial deep water port. The closest to Evanston are the Port of Chicago or the harbor in Waukegan.

8. Both recommend one of the next steps is testing of the wind at the proposed site, both also describe using commercially available technology.

In conclusion, Off Grid’s unproven technology represents a risk such that if Off Grid were to continue in the process, the City should require more stringent analysis than conventional technology such as proposed by Mercury.
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<tr>
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<th>Response of Off-Grid Technologies</th>
<th>Comments and Observations by Committee</th>
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<tr>
<td>General</td>
<td>The City’s intent in issuing this RFI is to identify potential partners, determine the City’s role and establish a process for the development of a renewable energy facility off Evanston’s Lake Michigan shore.</td>
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<tr>
<td>Timeline &amp; new Technology: will the project be dependent upon R&amp;D still to be completed?</td>
<td>Please identify a timeline for development. Address any uncertainties in scheduling, potential conflicts and associated mitigation strategies. Describe the City’s role, if any.</td>
<td>The expected Evanston wind farm construction will commence in 2011, 6 -12 months after all MET tower data is collected if all mandated approvals and permits have been secured. Commissioning of the last turbine will be on or before December 2012. See the itemized activity schedule in Table 6.1.1. The project schedule for major activities is subject to contingency scheduling for potential delays. Mercury Wind has developed a 40-week project schedule outlining all of the major design and construction tasks. (pg 48)</td>
<td>Manufacturing plant can be located in south Chicago area along the lake front and can produce up to four 10.0 MagRay turbines per month once full production is attained with a ramp up period of 12 months or less. Current development estimates for completion of the facility is 36 months after the initial feasibility study is completed. (pg 17)</td>
<td>These are both highly aggressive schedules that are likely unrealistic, given constraints to build a factory and procure the necessary equipment.</td>
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<td>Regulatory Approval Process &amp; Technology: Does the technology require special permits beyond current permitting</td>
<td>Please identify any issues of concern related to the process of obtaining all anticipated permits and approvals for the development of the offshore wind facility. What key uncertainties are known or anticipated in this process at the federal, state and local levels and how would they be overcome? Describe the City’s role, if any.</td>
<td>These regulatory permits from local government, state government, and the Federal government will be the most difficult aspect of the project. As of this moment, no offshore wind farms have been constructed in the U.S. Therefore, there are many uncertainties as to navigating the permit process. The first step is for the City of Evanston to award a development contract to construct an offshore wind farm. The second step would be getting the approval at the state level. The third and final step would be getting approval at the Federal level. The city’s roll throughout this process is petitioning the State and Federal government to grant the regulatory approval to the preferred developer. The key uncertainties that are not known at this time are: A. Who grants approval at the local level? B. Who grants approval at the State level? C. Who grants approval at the Federal level? D. Which entity receives the tax revenue from the wind farm? E. Who grants the leasing rights and determines the length of the leasing rights in Lake Michigan? F. What entity receives the annual leasing fees of Lake Michigan?</td>
<td>General Planning approval by all government agencies Department of Energy, Illinois Department of Energy, Department of Interior, Minerals Management Service, Federal Energy Regulatory Commission (FERC), National Renewable Energy Laboratory (NREL), Council on Environmental Quality (NEPA), U.S. Fish and Wildlife Service (FWS), National Oceanic and Atmosphere Administration (NOAA), U.S. Environmental Protection Agency (EPA), U.S. Army Corps of Engineers, (ACOE) River &amp; Harbor Act of 1899, National Park Service (NPS) Coast Zone Management Act (CZMA), Great Lakes Wind Collaborative (GLWC) committees, other governmental regulatory or Administrative agency, court, commission, department, board, or other governmental subdivision, State Legislature, rulemaking board, tribunal, consideration. (pg 20)</td>
<td>There is no process to specifically analyze the technology to be used, except in relation to construction methods (Army Corps of Engineers) and an indirect analysis of the technology occurs during environmental analysis</td>
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<td>Environmental Issues and Anticipated Studies: Can the technology increase or decrease threats to the environment?</td>
<td>Describe the City’s role in facilitating these studies and data collection, if any.</td>
<td>The city’s role in facilitating these studies and approvals should be two-fold. Granting the developer the necessary permits to collect wind data offshore and approving the correct organization to conduct the environmental assessments and studies that still need to be completed (pg 21)</td>
<td>We would like to consider the City of Evanston as the &quot;Project Champion&quot; to help facilitate all aspects of the project from feasibility to Development and eventual Operation and to carry out all and necessary task as the Municipal Sponsor. (pg 25)</td>
<td>question was not specifically asked of developers in RFI, so response is not available. Clearly the choice of technology can influence the impact of the wind farm on the environment, however a comparison of the two offerings is difficult without having asked the question more directly</td>
</tr>
<tr>
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<tr>
<td>Economic Development Opportunities: Does choosing one technology over another increase the jobs generated in Evanston?</td>
<td>Describe the City’s role in facilitating economic development, if any.</td>
<td>Mercury Wind desires to use as many local experienced companies for the proposed wind farm project as possible. Cranes will be rented locally, electricians, electrical engineers, civil engineers, marine engineers, architects, lawyers, construction companies, barge companies, and many other companies will need to be contracted. Many of the companies that can be hired to complete this project are located in Evanston, Chicago, or the state of Illinois. While Mercury Wind Energy recognizes that some offshore engineering and consulting expertise will be hired from Europe, the majority of the offshore wind farm project can be completed with American Labor. (pg 70)</td>
<td>We expect to develop a turbine manufacturing facility within the state of Illinois. Numerous opportunities will present themselves as a result of a manufacturing facility to supply the Great Lakes wind developments that unfold in the future. (pg 25)</td>
<td>Mercury is more bullish on job creation for Evanston. Both are committed to using a supply chain in the greater Chicago area and Midwest</td>
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## Responses to RFI regarding the Role of the City in the Proposed Off Shore Wind Farm

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<tr>
<td>Footprint of wind farm</td>
<td>Technology Availability and Limitations – Given the facility’s proposed location, please describe any expectations or concerns about technology related items, including the size</td>
<td>1.14 miles x 2.27 miles proposed (pg 51)</td>
<td>MagLev Wind Turbine Technologies (MWTT) advanced design of the giant wind turbine concept of kinetic magnetic levitation systems embodies wind energy acceleration components to provide a higher output of wind into kinetic wind generation for the production of electricity through innovative engineering concepts. The giant turbine systems have the capability to reduce existing wind farms scale of size for large land acquisition by up to 90% making it the most cost effective energy plant in the world. (pg 7)</td>
<td>Off Grid claims a distinct advantage here; that their technology reduces the overall area needed</td>
</tr>
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## Mayor's Wind Farm Committee  Technology and Equipment Working Group
### Responses to RFI regarding the Role of the City in the Proposed Off Shore Wind Farm

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<tr>
<td>Source of turbines &amp; related components. Are the sources local and are there competitors?</td>
<td>please describe any expectations or concerns about...availability, and suitability of commercial offshore wind turbines,</td>
<td>proposes sourcing from Illinois, Wisconsin, Indiana and other local vendors. (pg 70)</td>
<td>OGT and MWTT plans to build a new facility in the Chicagoland area to gear up for the Great lakes off shore development, as well as other parties such as developers, who will wish to purchase our 10.0 MagRay turbine. OGT &amp; MWTT JointVenture will practice supply side manufacturing in the central area for staging of wind turbine onshore &amp; off shore projects. Situating a turbine production plant near a shipping facility eliminates limitations moving giant turbine parts overland to sites with large populations. (pg 17)</td>
<td>no competitors for Off Grid's technology. Mercury proposes to use widely available technology</td>
</tr>
<tr>
<td>Construction and operating method</td>
<td>please describe any expectations or concerns about...special logistical considerations,</td>
<td>lengthy discussion beginning pg 61</td>
<td>has identified a construction partner (pg 17)</td>
<td>Mercury's approach uses conventional technology. Both require specialized vessels for construction that do not exist in the USA.</td>
</tr>
<tr>
<td>Lakebed construction</td>
<td>please describe any expectations or concerns about...foundation requirements</td>
<td>lengthy discussion beginning pg 61</td>
<td>not specifically addressed</td>
<td>Mercury has provided clear options for construction, Off Grid has not.</td>
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<tr>
<td>Cost: does technology choice drive significantly different costs?</td>
<td>please describe any expectations or concerns about…. cost considerations</td>
<td><em>lengthy discussion beginning pg 41</em></td>
<td><em>The giant turbine systems have the capability to reduce existing wind farms scale of size for large land acquisition by up to 90% making it the most cost effective energy plant in the world. (pg 7)</em></td>
<td><em>Off Grid claims distinct advantage due to technology.</em></td>
</tr>
<tr>
<td>Risk of technology choice and support from vendors</td>
<td>please describe any expectations or concerns about….quality, durability and manufacturer warranties of equipment.</td>
<td></td>
<td><em>Off Grid would be a single source supplier due to technology choice. Off Grid specifically mentions the use of rare earth metals, which is an extremely expensive commodity.</em></td>
<td></td>
</tr>
<tr>
<td>Does technology choice influence the infrastructure, including maritime assets for the project?</td>
<td>Please provide information related to the infrastructure required to execute the construction and maintenance phases of the facility.</td>
<td><em>lengthy discussion beginning pg 61</em></td>
<td><em>question is not directly answered (pg 190)</em></td>
<td><em>Mercury provides much greater detail and proposes using conventional maritime construction techniques.</em></td>
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<tr>
<td>Where will the material, labor and ongoing maintenance be sited? Does choice of technology influence port siting choice?</td>
<td>Address specialized equipment needs and availability, availability of skilled labor and trained crews</td>
<td>lengthy discussion beginning pg 61</td>
<td>Chicago area (Pg 17)</td>
<td>Both proposals recognize the need for a commercial deep water port. The technology choice may influence the port operations choice, depending on the skills needed and the size of vessel required for maintenance and repair.</td>
</tr>
<tr>
<td>What technology will be used for interconnections? Is it proven?</td>
<td>Address specialized...laying of cable interconnection</td>
<td>pg 64</td>
<td>......to construct its facilities or systems in accordance with applicable specifications that meet or exceed those provided by the National Electrical Safety Code, the American National Standards Institute, IEEE, Underwriter's Laboratory, and Operating Requirements in effect at the time of construction and other applicable national and state codes and standards. (pg 17)</td>
<td>Mercury proposes an offshore sub station and provides much greater detail overall about cabling than Off Grid. Reviewing European activities, there is growing awareness in Europe to improve the cabling technology and maintenance requirements. This needs to be specifically addressed in the future, but is not an immediate concern</td>
</tr>
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## Responses to RFI regarding the Role of the City in the Proposed Off Shore Wind Farm

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<td>Can the technology be insured effectively? Often new technology carries higher risk premiums.</td>
<td>Address specialized….insurance matters</td>
<td><em>lengthy response pg 35</em></td>
<td><em>estimates on pg 14</em></td>
<td>The working group is unable to address this directly. Insuring a project of this type is both expensive and complex and depends on many variables. Technology selection may and likely would influence the insurance costs by the developer.</td>
</tr>
<tr>
<td>Has the technology been proven to function/operate in our climate?</td>
<td>Address specialized…potential weather and other seasonal impacts on construction, maintenance, production and availability</td>
<td><em>discussed throughout proposal</em></td>
<td><em>not specifically addressed</em></td>
<td>Mercury touches on this, but offshore wind has only been sited in one lake that has significant ice - Lake Vanern in Sweden.</td>
</tr>
<tr>
<td>Testing technology</td>
<td></td>
<td></td>
<td></td>
<td>Both describe the need for testing the wind speed at the site. Both describe reasonable and commercially available technology.</td>
</tr>
</tbody>
</table>
1. CALL TO ORDER / DECLARATION OF QUORUM
A quorum being present, Sustainable Programs Coordinator Catherine Hurley called the meeting to order at 6:02 pm.

2. APPROVAL OF MEETING MINUTES
None

3. COMMITTEE REPORTS
None

4. STAFF REPORTS
None

5. UNFINISHED BUSINESS
None

6. NEW BUSINESS
A. Welcome and review of agenda and meeting goals

Ms. Hurley welcomed all attendees to the meeting and thanked the City Manager, Wally Bobkiewicz and Mayor Tisdahl for joining the meeting. Mayor Tisdahl welcomes the committee members and introduced Robyn Gabel, District 18 State Representative. Representative Gabel expressed her thanks to the committee for volunteering their time and stated that she was excited about the offshore wind development project. Representative Gabel said that the State of Illinois owns the lake bed in Lake Michigan and the State is responsible for the rules to lease out the lake bed.
Working with the Mayor and members of the community, Representative Gabel worked to introduce House Bill 1558 “The Lake Michigan Offshore Wind Energy Council Act” to create a council under the Illinois Department of Natural Resources (IDNR) with the goal of developing a process and legislation to lease the lake bed for offshore wind development. The bill passed out of the House and is now in the Illinois Senate. Representative Gabel will be working through some proposed amendments which are concerned with the public trust and need to proceed responsibly when concerning uses of Lake Michigan. Initial feedback from the IDNR was that they would feel comfortable with the City playing a role in the lease process due to their ability to keep the public trust in mind.

B. Introductions

Ms. Hurley asked that the committee members each introduce themselves and give a brief overview of their background experience and their feedback on the three points presented with the Request for Information materials sent out ahead of the meeting. The three points included one good aspect presented in at least one RFI that should be carried through in future discussions, one aspect missing from the responses to the RFI that should be focused on in future inquires, and one question related to the offshore wind generation project that you hope to learn from the committee during the process.

Summary of feedback/input from the committee during this process is summarized below.

1. Good Aspects presented in at least one RFI that should be carried through in future discussions

   Effort - It was acknowledged that both respondents put forth effort into their documents and subsequent presentation to City Council and their effort was appreciated. In addition, the Mercury Wind response to the RFI was detailed and attempted to address all the elements that were requested.

   Operations and Maintenance – One of the RFI responses provided a pretty thorough description of operations and maintenance considerations. It was acknowledged that an important consideration for this project is thinking about the long-term servicing needs of the infrastructure once it is constructed.

   Decommissioning – The topic of decommissioning was discussed in one of the RFI responses and this is an important aspect of the project that should be considered more fully in the future.

   Feasibility Study – Both RFI responses talked about the need for a feasibility study as an important future step in further development of an offshore wind development project. One aspect of the feasibility study is a wind resource study that would take 1-2 years of data collection to complete. This task is something that could be undertaken early on in the process, potentially with the help of grant money.

   Technology – One respondent recommended a traditional technology while the other recommended an emerging technology. There are advantages of each approach and this
topic of best technology or state of the art technology is one that should continue in future discussions.

2. One aspect missing from the responses to the RFI that should be focused on in future inquires

Cost, Revenue, and Financing – It would be helpful to understand how the offshore wind might generate revenue for the City or for the owner of the project, such as through renewable energy credits. In addition, the costs need to be broken down in similar ways so a clear cost comparison can be made between the two RFI responses. Finally, financing sources for this type of project and the key players that would be involved need to be fully explained.

Pre-development outreach – This was lacking in the RFI responses and needs to be more fully considered and planned out. There are still a lot of people in the community who are not fully aware of the facts and more effort will be needed of this to gain community wide support.

Permitting – The permitting schedule was either not provided or presented over-optimistic permit review and approval times; way too short based on the case studies from other projects based in the United States.

City’s Role and Responsibility – Both of the RFI responses had contradictory statements about the City’s role and responsibility on the project. This needs to be articulated more clearly.

Wind Resource Assumptions - The need for a wind resource assessment during the feasibly phase cannot be over emphasized. Both RFI responses made a lot of assumptions about available wind resources and this needs to be researched in detail before conclusions can be made on the realistic amount of wind available.

Maintenance and Safety – More information is needed on safety procedures and considerations related to the maintenance and operations of the wind turbine equipment. OSHA is in the process of developing safety requirements for wind farms because there have been some past issues with deaths associated with wind farm maintenance activities in the past. In addition, the breakdown of maintenance personnel recommended in one of the RFI responses was not adequate.

Insurance and Risk – There needs to be more discussion on the insurance requirements for this type of project and where the risk and uncertainty lies.

Scope of the Project – There is no discussion about how this project could be expanded beyond the borders of Evanston or increased in size over time.

Equipment Sourcing and Supply Chain – Both RFI responses need to better address the local supply chain and sourcing of the equipment. So many of the parts for this type of project are not being created in the United States and the generation of local jobs or regional impact needs to be considered.

Qualifications and Past Experience - Both companies who submitted a response to the RFI are lacking qualifications to do a project of this magnitude. It would be helpful to hear from the 9 other interested parties.
3. Question related to the offshore wind generation project that you hope to learn from the committee during the process

Benefits - What are the benefits of this project and how would the various parties benefit? Is there an opportunity to tie this project into other improvements along the lake front? We need credible things that will benefit Evanston. Are there benefits to the city playing a larger role as opposed to a small one? In the past, municipal governments have played a larger role in the development of public infrastructure such as water treatment, roadways, etc. where public benefit was clear. What is the public benefit from this project?

Cost - How much is this project really going to cost and how would it be financed? What are the various financing options? Will this lower our taxes? People will still be excited that we are leading the way but may have reservations. Both RFI responses mentioned the Power Purchase Agreement (PPA). What will the PPA mean to the actual end users? What impact will this have on pricing? If it does have an impact, it needs to be communicated.

Implementation - What is the process, both political and regulatory, that would need to be taken to implement this project? What will the environmental impacts be? People will wonder if there are any bad things that could happen as a result from this. What is involved with making the land-based connection? One RFI response mentioned necessary staging space and permanent space needed at the lake front. To what extent will this impact residents? How much space is needed and for how long? What is the time frame for construction once all regulatory requirements and permitting is obtained.

City’s Role and Responsibility - Who are the players involved in this type of project and what would they be responsible for? What are the options for the role that the City of Evanston could play in this project? How far does the City want to go with this project?

Partnerships - Would like to learn more about why Evanston is doing this in Isolation? Can we do this beyond the boarders of Evanston? What other project partners should or could Evanston partner with, such as other lakefront communities (Wilmette, Winnetka, etc.)?

RFI Respondents - Who were the other qualified companies that made inquires but did not submit a response? What could the City of Evanston do to engage them in this process? What was the process used to advertise this RFI? The responses to the RFI were not from companies with extensive experience. This may have been the cause of factual errors, omissions, and incorrect assumptions noted in the RFI responses. Why did experienced firms not submit responses to the RFI? What should be changed in the future for additional inquires? What things could the City bundle into a “carrot” to entice the interest of more experienced developers? In other words, what value added things can the City realistically do to help make the project attractive to developers? Examples might be intergovernmental relationships with state and federal level representatives (e.g. government legislators, the Army Corps of Engineers, etc.).

Could development of this project open the project developer to lawsuits?

What can we learn from Europe and Cape Wind in Massachusetts?

C. Overview of committee goals and expectations
Mr. Siegfriedt stated that the goal of the committee is to review the information provided by the two RFI respondents and provide feedback to the city council. He stated that the committee will probably go a little farther than that and the group will offer recommendations to the City on the path forward. Commenting on the RFI responses is important and a key issue will be to correct or clarify the factual errors that were presented in the RFI responses.

A question was raised about how confident the committee was related to how much wind was available at the proposed project site. Mr. Siegfriedt stated that the question of wind resources was not something that the committee would address specifically. He said that previous Citizens’ Greener Evanston (CGE) indicated that there was likely available wind resources but that this determination was the business of the wind developer. The developer would be responsible for a study to determine wind resources as part of the feasibility process and to help obtain the information needed to secure loan financing. It was also stated that the City could spent money to do a wind resources study however that was an activity typically undertaken by wind farm developers.

It was also asked what are the things that the City could realistically do related to the development of an offshore wind project. For any wind development project you need five main things: land to build the project, power purchase agreement, interconnection agreement, transmission to entity who is going to buy it and money to develop the project. Transmission is not an issue in this case since we are already by a large metropolitan area where the energy can be used. It was stated that the City at this time cannot give the developer the land, enter into a power purchase agreement, or enter into an interconnection agreement. Furthermore, the City does not have the financial resources to loan the developer. So the remaining option is to identify an appropriate “carrot” that could be used to encourage a developer to get involved in the project, if the City was so inclined to do so. For many of these items, the City could work to stop or prevent them from being granted, but the City does not have the ability to grant them to a developer.

D. Overview of past Evanston offshore wind development activities

Nicolai Schousboe, Committee Co-Chair, provided the committee an overview of the past wind development activities. A detailed timeline of past activities is provided as Attachment A to the meeting minutes. Mr. Schousboe reminded the group that the wind farm project resulted from citizen involvement in the preparation of the City’s Climate Action Plan and identification of projects that could help reduce the City’s greenhouse gas emissions.

E. Review of current offshore wind development concept

Nate Kipnis provided an overview of the current offshore wind development concept for the committee. He recommended that all members review the FAQ document that CGE has developed which summarizes the details on the current proposed concept for the offshore wind project.

Mr. Kipnis stated that the CGE Renewable Energy Task Force was looking for projects to lower Evanston’s Carbon Footprint without spending any money. He stated that in the area of renewable, the Task Force reviewed available resources and identified wind as an asset of the community. Mr. Kipnis also stated that the Task Force felt that the City of Evanston was a progressive community with the campus and parks, but only 50 houses on the lake and that an
offshore wind project could be a good answer. The initial size of the proposed wind farm that the Task Force considered was smaller but they were given feedback by Northwestern University that it should be larger, more of a utility scale project.

Mr. Kipnis further expanded on the experience that the citizens groups had as they further researched and investigated the potential for an offshore wind development project. Initial analysis of available information continued to indicate that there could be good potential for generating windpower in Lake Michigan offshore of the City of Evanston and that a site at that location would have advantages, such as a shallow shelf of the lake bed that would decrease the depth of the foundations needed. Mr. Kipnis stated that he believed there is an opportunity to get a data collection from a device off of the water intake cribs at Chicago.

Mr. Kipnis commented that their Task Force always knew that the City of Evanston does not own the lake bed nor does the City want to invest money in the project. However the renewable energy portfolio standard in Illinois makes this project attractive. Mr. Kipnis stated that the Task Force believed the RFI is the only thing that the City was really in the position to do in relationship to the offshore wind project. He also mentioned that when the proposed project was originally publicized, there was a lot of interest but that he expects most developers decided to wait until there was actually an offer of a contract on the table. Mr. Kipnis stated that a developer would probably question why they should spend $30,000 – $40,000 now when there is no legal process to develop offshore wind in Illinois and no project at hand.

Mr. Kipnis told the committee that individually one wind farm is not going to handle peak demand, but said that as part of a larger network one wind farm can be part of the solution. He also added that the Task Force observed that all other offshore wind projects are near large educational institutions so locating it by Northwestern University seemed like a logical idea.

F. Discussion of wind RFI review methodology

Mr. Siegfriedt stated that he believes that the committee should strive to provide the City Council with the best available information surrounding the development of an offshore wind project and suggested that the committee’s first task be to create a list of all of the issues associated with the project and describe how each of the two respondents addressed these issues or topics. In addition, the committee could add details on how the committee understands each of these issues and what steps are necessary to address them.

Mr. Siegfriedt stated that the facts need to be addressed and some realities need to be addressed including the realities of the benefits, costs and impacts. In addition, the goals of the City need to be stated and how the project would address those goals needs to be identified.

Mr. Siegfriedt listed issues or topics that he felt the group could use as a starting point to review and make comments on the responses to the RFI. These include the following: Project siting, sizing of the facility, technology, equipment sourcing, facility ownership, operations and maintenance, role of the City of Evanston, and politics.

The committee was in agreement to move forward with this process and decided to break the large committee into working groups which could meet over the next 30 days to develop a document to address their issue/topic area. Based on the number of people on the committee and number of issues/topics, the committee decided that the issues/topics would be grouped
into sets of 2 and the committee members volunteered to serve on one of the four resulting groups. The resulting working-group composition is outlined below.

Project Siting and Size of Facility: T. Carey, T. Cushing, N. Kipnis, W. Wagner
Technology and Equipment Sourcing: D. Dworak, K. Glynn, K. Landry, T. Patton
Role of the City of Evanston and Politics: J. Darin, V. Hutchen, J. Jaskulski, R. Lanyon, N. Schousboe, J. Smith

The output of each working group is intended to be a document which fleshes out the issues assigned to each group, how each of the RFI respondents addressed the issue and input from the working group on how to further address the issues. A draft document from each of the working groups should be completed by May 1st.

In addition to addressing how the RFI respondents each of the issues listed, it was suggested that an evaluation also be made to determine how each of the organizations would actually be able to complete the work under this project and how qualified they were to meet the project requirements.

Mr. Siegfriedt also suggested that the committee plan a tour to visit an existing land-based wind farm and observe this wind farm from 7 miles away to simulate how an offshore wind project might look from the City of Evanston's lakefront. There is a wind farm located in Indiana that could be visited by the committee following the initial output of the working groups. Ms. Hurley stated that the City Manager mentioned he would be supportive of such a field trip and could help coordinate transportation. The committee was in favor of this type of field trip and Mr. Siegfriedt will coordinate the details.

G. Future Meeting Schedule

Ms. Hurley asked if there were any particular times and days that were best for the committee to meet. Feedback was provided that morning times should be included as an option in addition to later times in the evening.

H. Next meeting agenda and pre-work

Ms. Hurley stated that she will use the doodle tool to schedule the next committee meeting in approximately 30 days from today and she will propose a wide range of meeting dates and times. Mr. Schousboe and Mr. Siegfriedt will coordinate the scheduling of meetings for the working groups.

7. COMMUNICATIONS
None

8. ADJOURNMENT
Meeting was adjourned at 8:15 pm.
Appendix A – Timeline of Activities in Evanston

**Offshore Wind Power Generation on Lake Michigan**

**October 2006** - COE City Council unanimously voted to sign the US Mayor’s Climate Protection Agreement, pledging reduce greenhouse gas emissions 7% from the 1990 levels by 2012.

**May 2007** - Office of Sustainability is created shortly after the City’s Strategic Plan identified environmental sustainability as one of the three guiding values for the City.

**Fall 2007** - COE completed a greenhouse gas emission inventory, which revealed a 13% reduction in Evanston greenhouse gas emissions was needed by 2012 to meet this goal.

**Fall 2007** - City of Evanston partnered with the Network for Evanston’s Future, a local coalition of citizens’ groups, to jointly develop a climate action plan through a citizen-based process. A climate action plan outlines strategies for reducing a community's greenhouse gas emissions.

**Winter 2008** – 9 Task forces formed to research and develop strategies for the Climate Action Plan.

**May 2008** - recommended strategies were presented for community comment at an Earth Day event attended by over 300 people.

**Fall 2008** - ECAP passed by the Evanston City Council with the first version of the Offshore Wind Farm project included.

**November 2008** – The Evanston Climate Action Plan (ECAP), accepted by City Council. Includes recommendation that [the City] “Investigate the feasibility of offshore wind power generation in Lake Michigan.” The development of renewable power at this scale has great potential for reducing Evanston's greenhouse gas (GHG) emissions.

**Calendar Year 2009, 2010** - Implementation of Evanston Climate Action Plan begins – COE working on both City operations as well as collaboration with the community on a variety of projects; during this time COE was also awarded the EECBG and began efficiency projects.

**Spring 2010** – The Citizens’ for a Greener Evanston (CGE), an advocacy group of community members involved in developing the ECAP, has been researching offshore wind generation on Lake Michigan for several years. Based upon CGE’s findings, the Staff recommended City Council approval to issue a Request for Information.

**April 13, 2010** - Evanston City Council unanimously authorized issuing a Request for Information (RFI) to interested parties for the solicitation of information on developing an offshore wind energy facility in Lake Michigan off the northern shore of Evanston.
The purpose of the RFI was to determine the feasibility of offshore wind power generation off Evanston’s Lake Michigan border by identifying potential partners, determining the City’s role and gaining a comprehensive understanding of the steps required for the development of a renewable energy facility off Evanston’s Lake Michigan shore.

**May 1, 2010** – RFI released by the City of Evanston; interested parties have until June 30th to submit a response. The RFI is not a contract offer by the City. The City reserves the right to discontinue or modify the RFI process at any time, and makes no commitments, implied or otherwise, that this process will result in a business transaction or negotiation with one or more responders. Responders are advised that the City will not pay any cost incurred in response to this RFI.

**June 30, 2010** - COE received three RFI submittals before the June 30, 2010 deadline. Two of these submittals were from developers and the third was from a consulting company offering assistance with the project. Since the primary objective of the RFI was to identify interested developers, the consulting firm response is not recommended to be pursued.

**July 2010** - CGE organized a Wind Farm Presentation and forum to share facts and answer questions relative to the proposal. About 100 local residents, business owners, energy professionals and students attended the event.

**September 13, 2010** - Citizens Utility Board (CUB - Illinois) published the results of a survey of Illinois residents regarding the proposal of a wind farm on Lake Michigan. 2,140 people were interviewed by phone or email. [Click here](#) for survey results.

**October 11, 2010** – Presentation by Wind RFI respondents to City Council: Off Grid Technologies, Inc. (OGT) and Mercury Wind Energy (MWe) were asked to make brief presentations about their companies at the October 11, 2010 City Council meeting.

**December 6, 2010** – Rules Committee agreed on the creation of a special community to review the two responses to the RFI and provide feedback to City Council. The committee should include members of the community, including our experts currently serving on our other boards and commissions and community groups.

**December 9, 2010** – City of Evanston announces the solicitation of volunteers for the wind farm committee. The deadline for submitting an application is January 7th.

**January 7, 2011** – Wind Farm Committee application deadline. Over 53 individuals submitted a formal request to serve on the committee.

**January- February 2011** – Mayor Tisdahl reviews the wind farm applicants and selects 21 community members to serve on the committee.

**March 14, 2011**– Wind Farm Committee members are approved at the City Council Meeting.
Spring 2011 - House Bill 1558 and Senate Bill 1314 is introduced by Rep. Gabel and Sen. Schoenberg to create the Lake Michigan Offshore Wind Energy Council as a separate entity within the Department of Natural Resources. The members of this council will be the Director of Natural Resources, the Director of the Illinois Environmental Protection Agency, the Director of the Illinois Power Agency, the Chairman of the Illinois Commerce Commission, or their designees, public members selected by the Director of Natural Resources and House and Senate leadership.

The purpose of the Council is to examine all challenges and possible benefits related to offshore wind energy facilities on Lake Michigan, and report the findings to the Governor and General Assembly by December 31, 2011.

Spring 2011 – City of Waukegan collaborates with City of Evanston, Illinois; the College of Lake County; a four-year accredited educational institution; and Lake County Partners, an economic development organization to apply for a research grant under the DOE Grant titled U.S. Offshore Wind – Removing Market Barriers DE-FOA-0000414. As part of this grant, a non-profit, public-private partnership titled NEIROWI, Northeastern Illinois Regional Offshore Wind Investigation with the goal of creating a coalition to further investigate and advance the development of an offshore wind generation facility on the west shore of Lake Michigan.
1. CALL TO ORDER / DECLARATION OF QUORUM
A quorum being present, Sustainable Programs Coordinator Catherine Hurley called the meeting to order at 6:35 pm.

2. APPROVAL OF MEETING MINUTES
Minutes from the meeting on March 24th were approved by the members present.

3. COMMITTEE REPORTS
Co-Chair Nicolai Schousboe welcomed the group and stated that the first order of business would be for each of the working groups to present their draft findings from the review of the Request for Information (RFI) from each of the two respondents which were Mercury Wind (Mercury) and Off Grid Technologies (Off Grid). The intent is that the working group reports will be finalized by May 8th and this meeting is an opportunity to provide feedback to each of the groups on their initial findings.

A. Project Siting and Size of Facility
Tom Cushing, Tom Carey, Nate Kipnis, Nicolai Schousboe and Bill Wagner made up the working group responsible for focusing on the Project Siting and size of facility. Present members provided a summary of their review of the two respondents to the RFI. In general, the working group stated that the two responses varied in detail and content; in most cases the Mercury response was more detailed and in some cases Off Grid did not respond to components of the RFI. In some instances the respondents made incorrect or unsupported assumptions, or failed to address certain questions altogether. In others, information outside the scope of the RFI was presented.

Both responses propose wind turbines located within the bounds of the site specified in the RFI. Mercury Wind’s response suggests a project with a capacity of between 100 and 250 megawatts using traditional vertical wind turbines. Mercury Wind’s response also concludes that a minimum capacity of 100 MW is necessary in order to achieve economies of scale for the project to be profitable. Mercury Wind’s response proposes a location seven to nine miles from shore.
Off Grid’s proposes the use of extremely large, horizontal turbines (at 10 MW per turbine) that represent a novel or emerging technology. Off Grid proposes an initial development of twenty such turbines that would fill 140 acres of the “796 acre offshore site” located seven miles from shore, with an initial capacity of 200 megawatts. Off Grid also estimates that the total 796 acre project area could ultimately accommodate one hundred 10 MW horizontal wind turbines, for a total potential capacity of 1,000 megawatts.

On the subjects of permitting and environmental assessments, both responses indicated that permits and site assessments will be required from various agencies, but neglected to identify them with specificity. There were also some instances where the respondents stated that no impacts would result from the project, such as impacts on boating, but no factual data was presented to support the statement.

The working group acknowledged that a deep water port would need to be utilized during the construction of this type of project and that the Evanston dock is not a deep water facility. In addition, the group stated that utilizing Evanston, Wilmette or Winnetka lakefront for industrial/construction purposes would dramatically alter the character of these locations. Waukegan, Port of Chicago, Gary and possibly sites in Michigan could be plausible port locations.

B. Technology and Equipment Sourcing

Deanna Dworak, Kevin Glynn, Kristin Landry and Tim Patton made up the working group responsible for reviewing the two RFI responses and considering those responses related to Technology and Equipment Sourcing. Present members of the committee summarized the findings of the working group. Both respondents had optimistic timelines for the project including a very short time frame provided for permitting.

Mercury recommenced using a very traditional wind turbine technology and Off Grid suggested using new technology. A question was raised as to whether there is even a prototype built for the wind turbine proposed by Off Grid. The working group reported that the information presented in the RFI response from Off Grid appeared to be computer generated graphics and did not include pictures of turbines that had been installed at any existing project locations. It was mentioned that the maglev technology is currently being considered for projects in China but there was also concern in the group that the turbine proposed by Off Grid was using rare earth metals.

In terms of equipment sourcing, a project would likely have the equipment parts transported via water and might not touch land until the point where they were being assembled.

C. Ownership of Facility and Operations & Maintenance

Rachel Bisnett, Joel Freeman, Diego Klabjan, Tim Schwartz and Fred Wittenberg made up the working group responsible for focusing on the evaluation of the RFI responses based on ownership of facility and operations and maintenance issues. Present members of the committee summarized the findings of the working group.
The first item mentioned by the working group is that the State of Illinois does not have a protocol set up to allow the leasing of the lake bed for development of offshore wind projects. Representative Gable has introduced a bill which is moving through the State Legislature. One question that was posed by the group is how does the City of Evanston currently have rights to the water intake structure and associated intake pipe?

Another ownership point discussed by the working group is that ComEd owns the interconnection point to the electrical grid. There is a formal process to request an interconnection with ComEd and several layers of studies are needed to complete this process. Neither of the two respondents to the RFI made mention of this process. It was mentioned that the ComEd Substation closest to the lakefront is not large enough to handle the power from the currently envisioned project (approximately 100 MW in size).

The question of required oversight was brought up and what required oversight would be needed. The Federal Energy Regulatory Commission was mentioned as a resource/potential player in the area of oversight.

The entity that purchases the power in the form of a Power Purchase Agreement (PPA) will be important to secure financing for a project of this size and the PPA will also determine where the reduction in carbon emissions can be calculated. Technically anyone connected to the electrical grid would buy the power generated from the wind farm but the energy would cost more the farther the energy would have to travel.

D. Role of the City of Evanston and Politics

Jack Darin, Victoria Hutchen, Richard Lanyon, Joe Jaskulski, Nicolai Schousboe, and Jeff Smith made up the working group responsible for focusing on the evaluation of the RFI responses based on the Role of the city of Evanston and political issues. Present members of the committee summarized the findings of the working group.

The working group concluded that both responses to the RFI addressed public affairs questions in the RFI incompletely, although the RFI itself could have been clearer and more comprehensive in some of its requests. The following words and phrases do not appear in the RFI: law, legal, regulation, lawsuit, litigation, politics, political, public opinion. Federal regulatory and intergovernmental aspects, though details are still in process, are fairly straightforward, and while time-consuming, should not pose an obstacle; indeed, the federal government may prove an important project resource.

The current lack of a state regulatory framework, and City lack of site control, is a barrier to moving forward and disincentive for serious project interest. City role in public affairs would have more dimensions than outlined by the two responding developers. Governmental leadership is key to progress on offshore wind, and, absent more persuasive explanation by respondents of their project economics, the information gleaned from the RFI responses suggests that governmental partnership of some form is probably required.

One area where the working group stated that the City could have the most influence is related to the interconnection point. If a substation was needed on land at the beach, this could be an opportunity for the City to help facilitate the identification of a location and access to the developer for the site.
Stakeholder outreach was mentioned as a very important step to determining the public support or lack thereof for this project. It was suggested that the City could help facilitate a public education and outreach effort to gauge the public interest and determine whether additional City resources should be spent to promote the project.

Because federal and state subsidies and funding opportunities typically require partners and/or municipal involvement, the City and/or governmental entity would likely need to be a partner in the development process. It was discussed by the working group that this type of project typically needs subsidies and/or incentives to make it financially viable.

Joe Jaskulski supplemented the group’s report with some additional feedback he received after making inquiries with his professional contacts at FPL (NextEra), Iberdrola, and Mainstream Renewable Power. A brief summary of the feedback he received from each contact is provided below:

- **Contact at FPL (NextEra)**, which is considered the largest wind developer in North America, said that offshore wind does not make economic sense and that is why they were not interested in doing it. The project does not hold muster or meet the smell test for our capital and G&A. Contact said that he did not know of the RFI but would have ignored it because we do not see offshore wind as a near or medium term vehicle for investment that makes sense. The contact stated that much of the press that gives offshore wind projects attention in the mid-Atlantic and East Coast areas is driven by politics, media and smaller developers who mistake getting ink in the press for having a good business idea/plan. Short answer: offshore wind is a 18-24 cent/kwhr product. Higher if a smaller project (i.e. 25-50 MW). Large financial decisions and large dollar deposits are needed too early in the process to make it viable too. Many of the proponents of it are “two guys and an Avis car” developers. (or perhaps, “two guys and a dingy”)

Why would one spend millions, i.e. $5,000/kw when onshore is $1500-2000/kw (our former colleague Jim Gordon has now spent $45 million dollars just getting his permit on Cape Wind according to press reports for one 200-400 MW project). The wind is roughly the same (i.e. we have plenty of land based sites in the 35-50% NCF [Net Capacity Factor] range in the US. Offshore is 40-50% NCF too.

Cape Wind is still not credit worthy after all of these years, and to move forward and is in the market (again) looking for equity and financing. We will pass on it for many of the reasons above and several others. I respect his dedication to the effort, but from a customer point of view it is flawed fundamentally. No political entity is going to raise rates that much (and live with it for 20+ years) just to do a project that costs this much at the end of the day.

Onshore wind can be done in the windier parts of the Midwest for 2 to 5 cents per kwhr, and delivered to Illinois entities for 4 to 5 cents these days, if built in Illinois. Why would one ever want to buy it in Lake Michigan for 4 or 5 times the cost, just so it is in or within the political boundaries of the buying entity (and can be seen in their locale?)?

- **Contact at Iberdrola**, considered largest wind developer in the world, said that he did read about but did not respond for the following reasons:
1) Too expensive (fixed cost to bring in equipment would be out-of-sight)
2) Too much personal capital involved (better return on people’s time for larger project)
3) Public exposure (no need to put Iberdrola’s name out there and take all the abuse for a small project)

- Contact at Mainstream Renewable Power, considered Europe’s largest off shore wind developer, said that they were aware of the City’s RFI but did not respond because they field the project was uneconomical. The contact did indicate that Illinois land-based wind energy could be purchased for around $0.05/kWh.

4. STAFF REPORTS

Catherine Hurley stated that the Wind Farm Committee was scheduled to present their findings to the City Council at a special meeting on June 20th. The summary document would need to be submitted to City Council the week prior to the meeting for their review.

5. UNFINISHED BUSINESS

None

6. NEW BUSINESS

A. Working Group Summary Document

Co-Chair Nicolai Schousboe asked that the working group chairs take the input and comments from the meeting and finalize their working group reports by May 8th. These reports should be sent to Catherine Hurley. The next step will be to create a summary document that highlights the key outcomes from the Committee’s work and reference the working group reports. A draft of this document will be distributed among the committee for comment and approval and finally presented to City Council.

B. Indiana Wind Farm Site Visit

Co-Chair Bill Siegfriedt informed the committee that he has planned out a trip for the committee to travel to Indiana to visit the Meadow Lake and Benton County Wind Farms. The idea would be to view the wind farms at several distances out including 7 miles and 5 miles. All members of the committee and interested citizens would be invited to attend with the cost covered by the City for committee members who would attend. The group would leave the Civic Center at approximately 3pm and return around 11:30 pm. After viewing the first project location in the afternoon the group would stop for dinner and then visit the second location after the sun goes down. Catherine Hurley will send out information on potential dates via e-mail and committee members are asked to promptly respond. The announcement will be made for the public to participate for those interested.
7. PUBLIC COMMENT

Public comments were provided by the following individuals:
Barbara Janes – 802 Colfax
Ms. Janes asked if the committee was suggesting to City Council that they should move forward with the project? She also inquired if it was in the committee’s purview to recommend that City Council appoint a diverse committee to look at the question of whether or not the project should be pursued.

Carl Bova – 1322 Rosalie Street
Mr. Bova stated that he believed it was key for City Council and the community to be well informed. He suggests that reasonable questions should be developed and posed to City Council for their consideration.

Jeanne Lindwall – 625 Library Place
Ms. Lindwall stated that the discussion about the pricing implications was good and an important part of the discussion. She also stated that the other two important issues are how the power will get onto the grid and connected to the appropriate substation (Skokie) and what is the mechanism to protect the quality of Lake Michigan for example in the event of an oil spill?

Joan Rothenberg – 1575 Ashland
Ms. Rothenberg stated her concern about the environmental impacts of this project. Have the impacts been studied sufficiently and understood?

Andrew McGonigle – 2526 Princeton
Mr. McGonigle stated that he would like to see the financial, regulator and ownership issues as a preface for the City Council document and not stuck back in an appendix. He recommends that the committee provide City council with an informed set of ideas on the merit of what was received in the responses to the RFI. Mr. McGonigle stated that there is a fundamental issue that the top 3 developers due to cost. He further identifies the following questions that need to be answered related to the proposed off shore wind project: Who owns the electricity generated from the project? Who would be the purchaser of the energy? How would it benefit the residents of the City of Evanston? If the turbine parts are procured from another country, what would be the impacts on the carbon reduction of the project?

8. ADJOURNMENT
The meeting was adjourned at 8:45 pm.
MAYOR’S WIND FARM COMMITTEE
Thursday May 19, 2011, 6:30 PM
Lorraine H. Morton Civic center
2100 Ridge Avenue, Room 2200

Committee Members Present:

<table>
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<tr>
<th>Rachael Bisnett</th>
<th>Libby Hill</th>
<th>Tim Patton</th>
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<tr>
<td>Thomas Carey</td>
<td>Victoria Hutchen</td>
<td>X Nicolai Schousboe*</td>
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<td>Tom Cushing</td>
<td>Joe Jaskulski</td>
<td>X Tim Schwartz</td>
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<td>Jack Darin</td>
<td>Nathan Kipnis</td>
<td>X William E. Siegfriedt*</td>
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<td>Deanna Dworak</td>
<td>Diego Klabjan</td>
<td>Jeff Smith</td>
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<td>Joel Freeman</td>
<td>Kristin Landry</td>
<td>X William Wagner</td>
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<td>Kevin Glynn</td>
<td>X Richard Lanyon</td>
<td>X Fred Wittenberg</td>
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* Committee Co-Chair

Staff Present:
Catherine Hurley, Sustainable Programs Coordinator

1. CALL TO ORDER / DECLARATION OF QUORUM
A quorum being present, Co-Chair Nicolai Schousboe called the meeting to order at 6:35 pm.

2. APPROVAL OF MEETING MINUTES
Minutes from the meeting on April 27th were discussed by the members present. Dick Lanyon provided feedback on three typos to be corrected. Fred Whittenberg requested that the specifics from Joe Jaskulski’s comments at the last meeting regarding the feedback he had received from developers he contacted regarding the City’s RFI be included in the meeting minutes. Joe Jaskulski confirmed that these remarks were provided by his contacts knowing that they would be reported to the committee as a whole and were in agreement that they be included in the meeting minutes. Mr. Whittenberg also stated that he felt the comments provided during citizen comment from Andrew McGonigle should be expanded to more accurately represent his statements. The committee approved the minutes as revised. Ms. Hurley will update the minutes and redistribute to the committee and post on the City’s website.

PUBLIC COMMENT
Co-Chair Nicolai Schousboe announced that public comment would be held at the end of the meeting following the business of the committee. However, he stated that if individuals were not able to stay for the whole meeting but wanted to make a public comment they could so at this time.

Jonathan Nieuwsma stated that he would like to make a comment. Mr. Nieuwsma lives at 1408 Dempster in Evanston and is here as himself although he does have a professional contract relationship with a small wind developer and does some work with the Wind Energy Association. Mr. Nieuwsma made several statements on the current issues facing land-based wind farms including the limited number of remaining sites to develop land-based projects due to set-backs enforced by many jurisdictions. He stated that there is also a capacity issue with land-based wind farms where additional transmission capacity would need to be added for more projects to be built. He mentioned that cost is often an issue cited for off-shore wind farms and that it is true that off-shore projects are currently 2 or 3 times more expensive than land-based. However he stated that the long term outlook indicates that this cost will come down. Land-based wind
development is a much more developed and mature market and the costs for land-based projects have come down in the past few years. Another benefit of off-shore wind projects is that they lend themselves better to larger wind turbines that can generate more energy and are of a size that would not be able to be built on land. The supply curve for off-shore wind projects also offers a better match to the demand curve. This needs to be validated through a wind resources study.

The remainder of public comment will happen at the end of the meeting.

3. COMMITTEE REPORTS

A. Update on finalization of working group reports

Co-Chair Nicolai Schousboe asked if any of the working group chairs wanted to provide any comments on their final reports. Having no comments, Ms. Hurley stated that copies of these working group reports would be posted on the City’s Website.

4. STAFF REPORTS

A. Committee presentation to City Council on findings is scheduled for June 20th

Ms. Hurley stated that the Wind Farm Committee was scheduled to present their findings to the City Council at a special meeting on June 20th. The summary document would need to be submitted to her by Monday June 13th at the latest. She would leave it up to the committee to organize the presentation of this information to the City Council at this meeting.

It was asked by the committee whether there would be a process to collect comments on the working group reports. Ms. Hurley stated that she did not believe it was within the Committee’s charge to elicit input on the working group reports; however this is a recommendation that could be made to the City Council as part of the final report and presentation.

Co-Chair Nicolai Schousboe asked that if anyone on the committee had further comments on the individual working group reports, said comments should be provided those directly to the chairs of the individual working groups.

5. UNFINISHED BUSINESS

A. Committee presentation to City Council on findings scheduled for June 20th

Co-Chair Nicolai Schousboe announced that several members of the Committee and a few citizens traveled on Friday, May 13th to visit some wind farms in Indiana and view them from a distance of 7-miles and 5-miles as well as drive to the base of one turbine and walk around it. The weather on the day of the trip was overcast with scattered rain but the attendees were still able to visit the wind turbine locations.

Several members of the trip from the Committee were in attendance at the meeting and offered their observations. Joel Freeman stated that one advantage of the trip was that the members
needed to drive closer than seven miles to the wind farms to observe them. In other words, it was difficult to see the wind towers at 7 miles or greater with the weather. Most people who would visit an off-shore wind farm would be limited to the distance from the shoreline unless they traveled out by boat. He also stated that the trip was a reminder that the weather conditions are not always ideal for trying to view things at a distance. At night, Mr. Freeman said that the visibility was not good either and that the Federal Aviation Administration (FAA) navigation lights were also not very well visible at night. Mr. Freeman said that he previously went to the Crescent Ridge wind turbines and found the ones visited last week to be much quieter.

Nate Kipnis stated that the FAA lights were very visible when you were right next to the wind turbines. He said that if you were out on a boat right next to a wind turbine at night, the light would be visible, but he thought they were pretty majestic and getting very close them was a good experience. The 2 MW turbine that was visited was 85 m (280 ft.) tall to the center of the hub, with 45 m (150 ft.) long turbine blades. He noted that the wind turbines could not be clearly seen until approximately 5 miles away and he expects this is due to the hazy weather.

Bill Wagner’s impression was similar. When he was directly underneath the wind turbines he could hear the sound from the rotation of the blades. It sounded somewhat like a wave sound machine that you would put on at night. It was not the best weather but Mr. Wagner said you could compare the visual sight with other structures that were on the horizon and he felt the wind turbines were harder to see. At about 3 miles away, it was noticeable that they were moving.

Tom Cushing wanted to know how the visit to the wind farms impacted their view of the visual impact of them. Dick Lanyon stated that it was pretty difficult to see the wind turbines very well at 7 miles away, especially with all of the other things on the horizon. He speculated that if you looked out on the lake under similar conditions as the day of the trip, that the wind turbines would stand out more.

Ms. Joan Rothenberg was one of the citizens who attended the site visit and she was not able to make the meeting but submitted the following observation for inclusion into the meeting record: She said, “My impression from that Indiana Wind Farm Site Visit is singular. Nothing can be said, honestly, in my opinion, about the visual impact from 7 miles away because we all experienced the fact that we just couldn’t see any turbines from that distance due to the dense fog. Having been on that field trip, I can say unequivocally that it does not give anyone the data to say what the visual impact would be from 7 miles away with the exception of how the turbines couldn’t be seen on a densely foggy day. I think the 1730’ tall Willis Tower couldn’t have been seen if it had been 7 miles away that day....the fog was just too dense. From the point of visuals, all that field trip told us is that you can’t see anything through dense fog.”

6. NEW BUSINESS

B. Working Group Summary Document

Co-Chair Nicolai Schousboe stated that he wanted to obtain input from the committee on what main comments should be included in the summary document to be provided to the City
Council. To help facilitate a discussion, he sent the committee four questions for their consideration. They include the following: 1). What is one main point that you believe needs to be in the report? 2). Do you have a cautionary note or warning that you want to share with the City Council? 3). What next steps would you recommend to the City Council? and 4). Are there any main points not addressed in the course of the discussion to date that you want to identify?

He asked that the committee members each take a turn to provide their feedback on the questions above, starting with the first question. A summary of the comments to each of the questions is provided below. It should be noted that these represent opinions of the committee.

**Main points that you believe needs to be in the report**

- **No experienced, qualified wind developers were interested enough to respond to the RFI.**
- **Neither of the two respondents has ever developed, owned or operated a wind generating facility, land-based or off-shore; has ever developed a project of any kind, small or large; included anything that shows it has the financial capacity to complete development of a large-scale project, or is a going concern.**
- **The information provided from the two RFI respondents was helpful but not authoritative. The information developed by the committee during this process provides substantial value.**
- **The respondents to the RFI did not reveal any red flags with regards to this project; however the value of their input is limited.**
- **Despite the responses we received, the City should continue exploring this project in some manner.**
- **The federal government’s backing of offshore wind means it is likely that the first Lake Michigan wind farm will be built for economic development, knowledge-base, and industry cost-lowering purposes, i.e., at an economic “loss” and with substantial subsidy of the development itself.**
- **While there are significant barriers and uncertainties to overcome in order for offshore wind to become a reality in Lake Michigan, the wind resource is excellent and the policy environment is beginning to move to address these hurdles. Evanston’s leadership on this issue, and the fact that it is the first Illinois entity to seriously explore the possibility, is very important leverage for Evanston. It is Evanston’s interest, and our elected officials, that are the impetus for the State to address the issue. If Evanston’s interest and engagement is not sustained, then it is much less likely to be in a position to control or participate in a Lake Michigan wind project in the future.**
- **It is important for the Committee’s report to specifically address the primary task of commenting on the RFI responses and then clearly identify separate findings unearthed during its review. We are all seeing the benefits of this technology to produce clean energy, reduce carbon footprint and conserve by preserving the remaining fossil fuel stores.**
- **While not necessarily part of the report, there were some important questions/concerns voiced by citizens attending the Committee’s meetings and field trip that should be conveyed to the Council for their consideration, so they know what might be asked of them.**
- **The whole wind farm siting process will be lengthy and that at some point the City will need to come to a decision as to whether to proceed or to abandon the project - at least**
temporarily. This process may need the development of a decision tree that would define whether and when the project is either a "go" verses "no go."

- Efforts to increase the use of renewable energy resources should not be at the expense of higher energy costs for Evanston businesses and residents.
- Both respondents emphasized the same point, that an important next step is to determine how much wind is actually out there.
- There are a number of variables at play that need to be resolved for this project to go forward; however it seems like the City should continue to explore the possibility of the project and continue to inform and engage residents.
- The two RFI respondents to not represent typical or even desired developers and there is concern about the ability for these parties to complete this type of project. Their effort is appreciated but we would expect a different outcome if the City were to issue a request for qualifications for developers with which to partner for this project.
- This project could never go forward unless the state does in fact develop the Offshore Wind Committee and establish a process for Lake Michigan to be leased for the use of offshore wind projects.

Cautionary note or warning to share with the City Council

- An RFI should not be confused with an RFQ – Request for Qualifications or RFP – Request for Proposals.
- Failure of Evanston to act on its own does not mean that there will not be a wind farm visible from Evanston, it would just mean that Evanston would have a lot less to say about any such project and little benefit from it.
- Established offshore wind companies did not respond to our RFI not due to technological or cost issues, but due to the lack of an "off-taker" of the wind farm's output.
- The Council should specifically identify the concrete benefits to the City and the Citizens of Evanston. If the Lake is the most appropriate location, benefits need to be part of the outreach effort to gain consensus of the community and our neighbors.
- The Council needs to make sure that whoever is selected to develop this project has the capability and experience to do so and require a detailed “Cost Benefit Analysis”.
- It should be identified how GHG and carbon footprint reduction will be claimed as applied to the Mayor’s Climate Action Agreement and ECAP, since it will be built in the Lake and likely funded, owned and operated by someone other than the City of Evanston.
- Mission creep - The City needs to make certain that it stays within the boundaries of its role in this process - whatever that is decided to be.
- The City should avoid financial expenditures on this low-probability project.
- The law of unintended consequences has not been revealed. There has been a lot of focus on the positive aspects of this project, but not a lot of time has been looking at the potential downsides. We could be opening Pandora’s box with this project with respect to what private developments we allow on Lake Michigan?
- The result of state legislation may be to lessen the influence of municipal initiatives for wind farms in the lake.
- Safety is a concern as well as operations and maintenance. Wind turbines have gained media coverage recently that they are a dangerous place to work for electrical workers.
OSHA is looking at wind turbine worker safety and is in the process of developing safety standards for the industry. Medical and first aid, machine guarding, etc. are items that have to be dealt with for any off-shore wind project.

• Looking at the 30,000 foot level, this project looks like a low probability project. However on the upside, we think there is a great wind resource on the lake and I believe there will be wind developed in the next 10 years. So if Evanston can have our hands on the reigns as one of the leading projects, we could influence how the process happens and impact how it turns out rather than letting other communities lead the way.

• Before any more money is spent, we need to get a handle on the economics of this project. There may be more than one view on this topic but what would real development companies think? Is it realistic to think that companies would want to develop a project like this and what would they say about why they believe it is economical?

• What would the power purchase agreement look like? Is there a real buyer out there for this energy at a price that the seller would be willing to provide it at? City Council needs to look at this in a realistic manner.

• Whether you are for or against the idea of the wind farm process, you should respect the process; or even if there is not a process, respect the fact that it is messy to create a process.

• The issue of private development on Lake Michigan has been around for a long time.

• There is a lot of support for this project but there are also those who are against it or those who just have questions. The City has the responsibility to know enough about the project themselves to educate the public and help people to understand the project. I would caution the City against moving forward with the project at a rate faster than you can educate the public.

• Land based wind projects are more mature than off-shore projects and the cost for off-shore projects will eventually come down. Due to the lack of a formal process with the State of Illinois, the City’s Wind RFI may have been too early for the established wind project developers. It may have been one year early due to the current position we are with the state.

• This is a long term process. Things that seem uneconomical today or dangerous will in fact in 2018 be considered much differently. The prices have come down by 50% for land-based wind projects in the last 7 years, but for some reason the developers are now getting concerned again with initial project costs for the off-shore wind projects.

• When things go bad with a wind turbine, it is much less damaging when it happens off-shore versus on land or relative to other forms of power generation.

• The state may decide to maintain dominance on this issue and this would in-turn reduce the local municipalities’ influence on the process.

**Recommended next steps**

• Meteorological testing would be up to the developer if the project gets to that stage and the state is working on the process of setting up the leasing process for the Lake Bed. So I think a next step would be the public education and outreach efforts.

• This process is long term and I am concerned about the technology. It would be helpful if we can go forward with the paperwork and permitting and then determine the exact technology once we get closer.
• Meteorological testing, creation of a state leasing and permitting process, and communication education and polling seem to be the most logical next steps. Meteorological testing is very key for the developer to understand the potential revenue model with will then in-turn help fund the project.

• Evanston should seriously explore its ability to create a market for the wind farm's output by looking at models to aggregate customers within Evanston and other local governments and institutions in our region.

• Compare all line item aspects with other successfully built projects, learn from their mistakes and benefit from their correct choices. We need to get some hard facts and information that can be used to inform decisions.

• Develop a matrix of logistical, permitting, approval and testing requirements to understand going forward, the true time line for the project.

• Flesh out which federal and state regulatory agencies would likely be involved in the process (e.g. Army Corps - Chicago District; IDNR, U.S. Fish & Wildlife Service, FAA, etc.) and identify contacts. Consider inviting these contacts to a meeting to discuss their respective roles and regulatory requirements.

• The City should apply its resources to projects with greater probability of near and midterm (1-15 year) progress.

• Given the City's tight budget and fiscal position necessary next steps can be undertaken only if affordable. The City should seek grants for these necessary next steps to enhance affordability.

• Logical next step is to get a data base of the wind resource that is available on Lake Michigan. This might cost money and is something that the City will not want to pay for but would be helpful. Perhaps we can get grant money.

• It would also be helpful to bring in reputable developers who could come into the City and talk with us about the project in more detail and have some candid conversations. It would be helpful to have both developers who are and are NOT in favor of this project.

• Next steps should be testing. Most of the wind resource studies being funded now are being done with DOE money and this is something the City of Evanston should look into along with collaboration with Northwestern University.

• The City should seriously consider what their role would be in the development of an offshore wind project. A more thorough cost analysis should also be completed to better understand how the parties would work together to make the project happen.

• Recommend that the City work with partners and the community to help educate everyone on the project. Many residents are already having a hard time paying bills so keeping this in mind is important.

• Need to find out if there is good wind out there. Also, we need to understand the overall process and the critical path. What is the most important thing that needs to be done now that will make or not make it possible to complete the project if we wanted to. One developer
has shown information on the critical process throughout the 7-year process, but this needs to be explored more.

- While we like to say that the developer should be solely responsible for determining the wind potential, perhaps there is some initial, upfront work that we should do to help support the project.

- We should be going after grant money to help fund the next activities and also partnering with Northwestern University to use this as an opportunity to conduct research that also benefits NU students. We should not put this financial burden on the backs of the local community.

- Next steps should include outlining what a true RFQ/RFP would look like, formation of or delegation to, a committee, commission or board to investigate and possibly recommend a role for Evanston about possible options; beginning avian studies now (some advocates want three years’ study); application for Illinois Clean Energy Community Foundation grant for meteorological, avian, and/or feasibility study (applications will be available June 15 and July 14th)

Any main points not addressed in the course of the discussion to date

- Evanston may want to think of building a partnership of entities beyond our borders. There is great potential for collaborate with neighboring towns as well as the University. The shore off of Evanston will not only be seen from Evanston but from surrounding communities as well.

- Some sort of poll of the residents to support this project after presentation of the project’s details would be very valuable.

- Our community is supportive of sustainable efforts and resources, but maintaining a spirit of diversity and not just putting all our efforts into the wind farm. Also, incorporating people across the community will be important in the future, especially the youth and the next generation. We will need to do more than just the wind farm.

- Our discussions have been fairly comprehensive, have covered and uncovered in some cases, potential flaws with an off shore wind farm. Our representative in Springfield has made incredible progress on a potentially major sticking point. While a large number of issues have been raised, the answers will likely reveal others.

- There are a lot of other positive things related to sustainability and outreach and education going on across the City and we are always thinking of ways to get that message out to people.

- Exelon / ComEd potential involvement?? Exelon purchased Deere Wind Energy last August to obtain expertise in developing wind farms and to add clean energy to its portfolio.

- The City should consider purchase of energy from land-based wind farms as an alternative to a wind farm in the lake.

- There is strong general public support of wind power.
Current low retail wholesale cost is function of excess capacity from, largely, coal and nuclear facilities, two sectors under pressure for different reasons.

Effect of a rapid and permanent increase in oil costs on electric demand.

Possibility of partnership with other municipalities should be further discussed and explored (ie. Waukegan).

There has been a lot of on-going discussion on the cost of off-shore wind development. 25,000 MW in our region’s energy grid; our small 2000 MW will not pull up the cost of the entire cost of energy in the region. Energy produced from an off-shore wind farm would have its own specific attributes and value to the grid.

The group discussed the options of how to create the committee's final report. It was agreed that the chairs of the working group would meet to develop a draft. The draft final report would be sent to the entire committee for their review and would be discussed in detail at a final meeting in early June. The report to be included in the packet for City Council's consideration must be done by June 8th.

7. PUBLIC COMMENT

Steve Lavone– Mr. Lavone said that he considered this is a landmark decision. An array of wind turbines out in the lake would be a good addition to our other lakefront assets, such as the Grosse Point Lighthouse. The project would also provide clean energy. We may not see the direct negative aspects of our current energy infrastructure, but 12 miles south of Chicago the negative affects can be seen.

Barbara Sykes – Ms. Sykes said given the sheer magnitude and far reaching effects of this venture, the review and decision making process must be transparent, inclusive, democratic and that resident’s right to vote on the outcome of this proposed project should not be circumvented. She did not feel the process has been transparent, information has not been released in a timely manner or been inclusive of resident’s participation. Her concerns include the City Staff’s initially review and approval for further investigation of the RFIs in 2010, that the RFIs should have immediately dismissed because they were submitted by two inexperienced fledging, startup companies without any prior experience in the construction of a wind farm. In the Mayor’s Wind Farm Committee, this fact was determined, to varying degrees, in the body of the working group reports. But none of the working group summaries mentions it. All of the working group summaries should include that the RFIs were submitted by fledging, startup companies. She commented that the wind industry is unregulated and that full disclosure has been an issue. She stated that last year, Retuers, and numerous other European media, reported that all existing offshore wind farms have a multi-million dollar design flaw and are sliding off their bases and that the industry still hasn’t come up with a solution. The US government is working with wind industry leaders (NREL), in part, to address serious, extremely costly and time consuming to repair outstanding design flaws. Since the beginning, the wind industry continues to be plagued by multi-million dollar gearbox design flaws, extremely time intensive to replace and repair. NREL report includes the industry’s claimed wind turbines 20 year life span is false;
gearboxes alone require replacement every 3 to 5 years cutting done the life span considerable
and escalating the costs exponentially. She also spoke to the need that comprehensive energy
policies, regulations and protections must be in place first before proceeding and every detail
must be carefully scrutinized.

Ms. Sykes wanted to know why there was not a working group looking at the environmental
impacts; including one addressing fresh water lakes. She stated that until late last year, there
were no existing wind farms in fresh water and consequently no existing data on the impacts of
wind turbines in fresh water lakes. Now, only one small one now exists in Sweden. Earlier this
year, Ontario, a world leader in renewable energy, including wind energy, put a moratorium on
all offshore wind turbine projects until the science of environmental impact is clear. She stated
that independent scientific must be done on the impact of wind farms in fresh water lakes that
are comprehensive, objective, independent, transparent, and based on empirical evidence.
Ms. Sykes questioned who is responsible for the bills if anything goes wrong. Ms. Sykes spoke
against the privatization of a public property; constructing a large, privately owned industrial
facility in Lake Michigan, a public property and in the world’s largest fresh water lake, the Great
Lakes. She was concerned about the potential for public domain issues and condemning
privately owned property for the installation of new electric lines in Evanston. Another concern
she mentioned was the wind turbines can give radar false readings and Evanston’s close
proximity to OHare, the largest airport in the world. She is in favor of renewable energy,
including wind energy but only if it is appropriately placed, but she is not for any wind turbines in
any fresh water lakes. She recommends proceeding with caution and close scrutiny. She also
wanted to know when there will be opportunity for residents to be part of the decision making
process.

Andrew McGonigle – Mr. McGonigle commented that he has several questions including the
following: What does the Evanston community get out of this process? Where do we go from
here? What are the long term advantages and what do we get? If money is expended by the
City, how is that money recouped? How can the taxpayers be repaid for the resources spent?
Another area that Mr. McGonigle commented on is the point where the power lines from the
wind turbines would come on shore. There is another project considering an island marina. How
would this project interact or interfere with the other? It seems that there are several issues
outside of the committee’s purview that need to be addressed before a recommendation could
be made. Mr. McGonigle also expressed concern over the City’s ability to manage and/or
regulate the process and the cost that would be entailed to hire a developer to do it for the city.
He agreed with previous statements from the committee that a wind resources study is needed
and that partners and grants would help meet this need. Mr. McGonigle expressed interest in
seeing a copy of the report from the committee with enough time to read it prior to the City
Council Meeting. Is it beneficial for the City to consider buying the wind energy from this
project?

Jeanne Lindwall – Ms. Lindwall commented that she wants to understand how the power gets
from the wind farm to the grid. At a previous meeting there was discussion of a power
transmission line that would need to connect to Skokie and would likely be built as an
underground transmission line. Is it possible and/or cheaper to put the lines overhead? Do we
(Evanston) have a say as to whether the transmission line would get built if the community decides we do not want it going through our town?

8. ADJOURNMENT
The meeting was adjourned at 8:23 pm.
MAYOR’S WIND FARM COMMITTEE
Wednesday June 8, 2011, 6:30 PM
Lorraine H. Morton Civic center
2100 Ridge Avenue, Room 2200

Committee Members Present:

<table>
<thead>
<tr>
<th>Rachael Bisnett</th>
<th>Libby Hill</th>
<th>Tim Patton</th>
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<tr>
<td>Thomas Carey</td>
<td>Victoria Hutchen</td>
<td>Nicolai Schousboe*</td>
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<td>Tom Cushing</td>
<td>Joe Jaskulski</td>
<td>Tim Schwartz</td>
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<td>Jack Darin X</td>
<td>Nathan Kipnis X</td>
<td>William E. Siegfriedt*</td>
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<td>Deanna Dworak</td>
<td>Diego Klabjan</td>
<td>Jeff Smith</td>
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<td>Joel Freeman X</td>
<td>Kristin Landry X</td>
<td>William Wagner X</td>
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<td>Kevin Glynn X</td>
<td>Richard Lanyon</td>
<td>Fred Wittenberg</td>
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* Committee Co-Chair

Staff Present:
Catherine Hurley, Sustainable Programs Coordinator

1. CALL TO ORDER / DECLARATION OF QUORUM
The meeting was called to order by Co-Chair Bill Siegfriedt at 6:35 pm. Present at the meeting were 9 out of 20 committee members.

2. APPROVAL OF MEETING MINUTES
Minutes from the meeting on May 19th were discussed and members of the committee provided comments including a few clarifications on content and some editorial items. The committee approved the minutes as revised. Ms. Hurley will update the minutes and redistribute to the committee as well as post them on the City’s website.

3. COMMITTEE REPORTS
A. Update on Finalization of Working Group Reports
Co-Chair Bill Siegfriedt asked if any of the working group chairs had received follow-up comments on their draft reports. Joel Freeman stated that he received an e-mail with some comments and would review those comments to see if they were content or editorial-related and submit an updated document if necessary. Ms. Hurley replied that she would update the working group reports on the website if there were changes. Otherwise the documents as posted on-line would be considered final. Mr. Siegfriedt said that the product from the working groups was good and that content from these working group reports was incorporated into the summary document.

4. STAFF REPORTS
Ms. Hurley stated that there was no report. It was also mentioned by the committee that since the last meeting, the Offshore Wind Council Bill was passed and is now going to the Governor’s Office for his signature. Kevin Glynn stated that he would recommend that the City of Evanston take a proactive approach in securing the seat on the Council created by the Bill reserved for a municipal representative - since the City has expressed the most interest in considering the development of an offshore wind farm at this time.
5. UNFINISHED BUSINESS

A. Review of Draft Final Report to City Council

Co-Chair Bill Siegfriedt stated that a draft Summary of Wind Committee Review document was developed by the working group chairs. Copies of the report were available at the meeting for review and comment. Mr. Siegfriedt asked the committee if they had any comments on the draft document. Below is a summary of the comments that were made. A revised and completed version of the Summary of Wind Committee Review document is provided as an attachment to the meeting notes.

- Dick Lanyon was unable to attend the meeting, but submitted the following comment on the document.

  I support the draft of the Summary of Wind Committee Review as submitted except for the following paragraph in the opening section on page 1.

  “The committee wishes to point out that this project is almost certain not to be operational for at least four years, and that the process leading up to the first delivery of power from the wind farm could easily take significantly longer.”

  The wording implies an approved project ready for implementation and I suggest revision as follows:

  “The committee wishes to point out that there are many details to be addressed and approvals to be obtained before construction of this project can proceed, and this can easily take at least four years. The process leading up to the first delivery of power from the wind farm could easily take significantly longer.”

  Mr. Siegfriedt stated that the working group chairs were concerned that people would think that the project could be completed in 2 years, so this statement was intended to give the idea of a longer time frame. Mr. Siegfriedt further stated that the project is still very conceptual in nature and not a final project. The committee decided to remove this text from the document to address concerns around defining a timeframe at the stage of the project.

- Bill Wagner commented that he found the document to lack clarity around the difference between what the report was presenting as information obtained from the RFI responses versus the opinions of the committee. The committee decided to clearly state at the start of the document when the information represents beliefs or comments from the committee versus a summary of the RFI responses. Starting on the second half of Page 2, the remaining information in the memo reflects comments from the Committee. It was stated that the working group reports are the best source to review a summary of the information presented from the RFI respondents.

- Mr. Wagner also commented that the reports from the working group contain valuable information and recommended that the summary report referenced those documents and that they are included as attachments to the summary report. The committee agreed and Mr. Siegfriedt stated he would add the reference.

- Bill Wagner suggested that a recommendation be added to determine and list the specific environmental, social and, as well as the relevance of the project to the Climate Action
Plan. The committee agreed and a refined recommendation will be included after Recommendation Number 3 in the document.

- Kevin Glynn stated that he believed the recommendations should be clean and independent.

- Jack Darin commented that the topic of City collaboration with other entities is important and that perhaps one reason why larger wind developers did not respond to the RFI is because the project is not large enough to attract their interest. He suggested that this information could be added to Recommendation Number 7 or created as a new Number 11. The committee agreed to add more detail to the existing Recommendation Number 11 to address Mr. Darin’s suggestion.

- Ms. Hurley suggested adding an introduction section to list the dates of the meetings and provide some context for the work completed by the Mayor's Wind Farm Committee. The committee agreed with the recommendation.

- Jeff Smith commented that the energy pricing implications section is entirely from the Committee’s findings and not a summary of information provided by the RFI respondents. It was agreed by the Committee to add “The committee finds that” prior to the 3 points listed under this section.

- Joe Jaskulski was not able to attend the meeting but provided the following comments in the form of an e-mail.

  I think is the majority view and possibly the unanimous view of our group that neither Mercury Wind nor Off grid technologies is a suitable potential partner for the City. I would like a vote amongst those present and if all or most agree, this should be stated as a primary conclusion. There is little we all agree on, but if we agree on this it should be right there in the first paragraph, as this is one of the three main purposes of the RFI.

  I think we have a duty to report, obvious though it is, that neither respondent has ever built a wind farm, developed a major project of any kind, or shown the financial resources to successfully move this project to conclusion.

  I also believe that the information from FPL/NextEra, Iberdrola, and Mainstream, summarized in the previous meeting notes, should be included in this summary. This information, however late, are additional responses to our RFI, and the Council has a right to know the views of these experienced firms on the contemplated project.

Mr. Siegfriedt stated that he did not believe that the committee has a unanimous view of the respondents’ RFI responses and that the nature of the RFI itself does not require a winner or looser be either selected or announced. Mr. Smith stated that he believed it was premature to make such judgments. Further he stated that the Committee wants to encourage participation in these types of RFI requests. He also commented that even with a Request for Qualifications, there is not a need to make a public statement on respondent qualifications. Mr. Glynn stated that he had no objections to putting in the other developers’ comments into the final report.

Ms. Hurley said that Rachel Bisnnett was not able to make the meeting but submitted comments via an e-mail which were pertinent to the discussion. They are provided below:
I agree with Jeff that it is neither prudent nor necessary to "bash" either Mercury Wind or Off Grid within the context of the committee's report. Ultimately, as has been stated many times, the companies responded to an RFI and provided information, so there is no justification for commenting on the quality of their work. Further, the purpose of the committee is to summarize the information provided, which does not leave room for those types of commentary. To that end, I believe you have done a good job avoiding language of that type.

In regard to the draft report, I am not entirely convinced that at this time the city should put financial efforts into further review of this project as could be implied by point 9 of the Recommendations section. If another volunteer committee were to be assembled - hopefully smaller in size to encourage a more productive working environment from all - I believe it would be an appropriate way to address the issue of the "role of the city." However, the information that has been provided so far, both on the record from RFI responses, and off the record, from non-responding developers, does not lead me to believe that the project is feasible. Ultimately, if the city truly is serious about playing some role in this endeavor, a feasibility/fatal flaw analysis is essential and would cost some money.

As an aside, I wanted to apologize for being unable to make nearly all of the meetings. I ended up being far busier at work than I initially thought I would be when I made the commitment. While I have enjoyed learning more about the potential for a wind farm, I am disappointed that so much individual effort was put forward for this committee to answer questions that it seems had already been done by Citizens for a Greener Evanston. The organization seemed to comprise an unexpected percentage of the committee, and the have done a fair amount of work; their independent report proposed solutions to many of the most obvious questions (e.g. site, size, etc). It has unfortunately left me questioning how essential this RFI really was for the city - aside from the goal of identifying potential partners. I would hope going forward, if another working group is assembled to determine the City's role, that there is more independent thought for the issue at hand, and less reliance on an existing report. The work products of such a committee would be vital to the City's progress toward or away from an offshore windfarm and should be considered from an unbiased perspective.

Ms. Hurley said that Fred Wittenberg also was not able to make the meeting but submitted comments via an e-mail which were pertinent to the discussion. They are provided below:

As far as I'm concerned, even this has no bearing on the purpose of this committee, is that Evanston is like a pendulum swinging on one end with plastic bags, and the other end with wind turbines out on the Lake. Neither of these should be dealt with, as the city lacks the capability of handling these two items with their own staff, as free outside assistance is limited. Environmentally, let the city only bite off what it can chew. Use the KISS principle!

Co-Chair Bill Siegfriedt asked the Committee if they wanted to include Mr. Jaskulski's comments into the summary report. The Committee’s vote was 1 to 9 on the question of whether to include the comments so the additional text will not be included in the report.
In response to Ms. Bisnett’s e-mail, Mr. Smith stated that he believed that Recommendation Number 9 – which suggested a committee or board be designated to continue looking into the offshore wind farm – is a good recommendation. He stated that it is not up to the Mayor’s Wind Farm Committee to make the decision on creating a board or committee but that this recommendation should be provided for the City Council to consider. Co-Chair Bill Siegfriedt asked the Committee if they wanted to remove Recommendation Number 9 and the Committee voted against that deletion.

Co-Chair Bill Siegfriedt asked if there were any additional comments on the draft summary document from the committee. With no additional comments provided, Mr. Siegfriedt asked if the Committee was in favor of the revised Summary Report. The committee unanimously voted to accept the report as final. Mr. Siegfriedt and Mr. Schousboe will coordinate with the working group chairs to finalize the document and submit to Ms. Hurley for her distribution to the City Council.

6. NEW BUSINESS

A. Planning for Presentation to City Council June 20th

Ms. Hurley stated that the Committee would be making their presentation to the Evanston City Council at a special Council meeting on Monday June 20th. The Committee’s presentation can include Powerpoint but should focus on the highlights and be no longer than 10 minutes. The City Council will be given the opportunity to ask questions after the presentation.

Mr. Siegfriedt said that he would take responsibility for getting the slides developed and he would present alongside Co-Chair Schousboe. It was suggested that all members of the Mayor’s Wind Farm Committee attend if they are able to do so. The Co-Chairs would be able to direct questions from the City Council to the appropriate committee member as necessary.

It was asked by a citizen whether it was possible to have public comment after the presentation. Ms. Hurley stated that the City Council sets the agenda and in most meetings the public comment occurs at the beginning.

7. PUBLIC COMMENT

Barbara Sykes – 3007 Thayer

Ms. Sykes expressed her thanks for the work completed by the committee and acknowledged that it was a lot of work to complete in a short amount of time. She also stated that she was willing to ‘agree to disagree’. She said that she has a lot of concerns about putting offshore wind turbines in Lake Michigan and has sent those comments and concerns to the City. She feels that the public comments made in the past have been turned off and ignored. She commented that she did not see the issues reflected tonight in the draft summary report and that she did not get to see the paperwork until she arrived at the meeting tonight. She further commented that she feels the process has been exclusionary. She liked the suggestion to add a recommendation for creating a list of pro’s and con’s for the project but she still feels like the City is charging ahead as if this project is a done deal. Ms. Sykes stated that she agreed with Mr. Jaskulski that the qualifications of the two RFI respondents and the info from the other developers should be included in the summary document and wants to include all of the
previous work that has been completed to date. She believes there is a lot of completed work that is not reflected in the summary document. Ms. Sykes also commented that she was concerned about a statement that was in one of the working group reports that was talking about “key stakeholders” and was concerned that residents were not included as key stakeholders. She wanted to know how residents would be included in the process.

Steve LaVon – 1738 Chicago Avenue
Mr. LaVon stated that he has been impressed with the Committee, including the diversity, openness to comments and discussion with the public. Mr. LaVon considers it a dream to have renewable energy in Evanston. Coal fire power plants have a very detrimental impact on our air and water resources and he really hopes that this project can happen. He stated that he was happy that all the information has been pulled together by the committee including both positive aspects as well as challenges and negative aspects.

Andrew McGonigle – 2526 Princeton
Mr. McGonigle started by thanking the Committee for their efforts and commented that they have done good work. Mr. McGonigle pointed to page 2, paragraph 1, for the timeline and stated that he believed it would be much longer than 4 years before power would be delivered from an offshore wind project in Evanston giving the regulatory conditions. He stated that people need to be informed on the likely duration. On page 4, item 3, he recommended including additional studies to understand the impact of the wave action on the wind turbines. Specifically the rising and falling of the lake water level, which he states acts like a bath tub. He stated that he believes the viability of the project could be determined by the impact of the wave motion of the water. For Recommendation #5 – which relates to identifying grants, tax incentives and other means to demonstrate to developers and lenders a favorable environment – assumes that there is a favorable environment in Evanston for this project. However it does not seem that the work has yet been completed to determine if the environment is favorable.

Barbara Janes – 802 Colfax
Ms. Janes provided a written summary of the comments she made verbally to the committee on the Wind Farm Committee Summary Document. These are attached to the meeting minutes for reference.

Joan Rothenberg – 1575 Ashland
Ms. Rothenberg provided a written summary of the comments she made verbally to the committee. These are attached to the meeting minutes for reference.

8. ADJOURNMENT
The meeting was adjourned at 8:25 pm.
Joan Rothenberg, Comments, 6/8/2011

The Mayor's Wind Farm Committee has clearly done a lot of time consuming study and hard work. Each member is to be appreciated for his or her time, energy and voluntary commitment. As a citizen of this City, I recognize this as well as the earlier years of commitment most members of this Committee have made to the study off shore wind energy for Evanston.

I take very seriously the comments such as (from 5/19/11 Draft of the Committees' meeting minutes):

"Failure of Evanston to act on its own does not mean that there won't be a wind farm visible from Evanston, it would just mean that Evanston would have a lot less to say about any such project and little benefit from it".

The thing that concerns me is that the environmental impact of offshore wind farms on freshwater ecosystems appears to be a big unknown. There is only one such wind farm in the world; Lake Vanern, and this one has been operating for a very short period of time. Of course, we do want to reduce our carbon footprint through alternative-to-fossil-fuel energy sources. But, with the growing preciousness of surface fresh water the world over, are the Great Lakes, our biggest surface freshwater resource here in the U.S., the place to experiment? Should we, perhaps, encourage the appropriate agencies to support a small scale environmental impact study of freshwater wind farms first, before opening this precious resource to the big developers or other entities who may have little or no investment in what actually happens to the benthic, pelagic and coastal environments of the Great Lakes watershed? Had the environmental impact of the Welland Canal been studied prior to its development (and, for example, the impact of ships entering from the ocean discharging their ballast into the Great Lakes), perhaps we would still have a native food resource in the Great Lakes; perhaps we would still be able to get native Great Lakes sturgeon.

I don't think that the fact that wind energy is likely to have a smaller environmental impact than fossil fuels, means that we shouldn't try to know what we're getting into, before we jump in.
Comments To the Evanston Wind Farm Committee

Barbara Janes

June 8, 2011

Having read the report of the Mayor’s Wind Farm Committee from the Public Affairs Working Group I have several comments and questions.

1. It is my understanding that the sole charge of the Mayor’s Wind Farm Committee was to evaluate the RFIs that were provided to the City by Mercury Wind and Off Grid. As I read the Public Affairs Working Group report I am left with the distinct impression that the committee has gone far beyond its charge and is presenting a blueprint on how to make a large wind farm in the lake a reality. That was not the charge to the committee.

2. On p 1

“Analysis of the FFI responses and other available information indicates encouraging potential for an Evanston offshore wind farm, but also identifies uncertainties and significant potential challenges for the project. Government leadership, including federal support, is key to progress on offshore wind generally and for this project. Maintaining an active interest in the project, participating in state and federal policymaking process, and more clearly defining the City’s role in an offshore wind project, Evanston can position itself to be a major participant in such a project when these obstacles have been overcome and uncertainties have been resolved.”

This is only one of many such comments throughout the committee report. To my knowledge no decision has been made to definitely proceed with building an offshore wind farm. I cannot state strongly enough that NO decision should be made until the entire Evanston community has been involved in a series of objective workshops which present the pros and cons of such a project and the myriad of questions that the committee, City Council and residents of Evanston have about such a project have been answered. And the ultimate question that has not even been raised publicly is, What benefit does Evanston get from an offshore wind farm? Until it is crystal clear that there is a direct benefit to Evanston, no wind farm project should proceed.

3. The second point I would like to make relates to the list of stakeholders presented at the very end of the committee report. My initial reaction to the list was that someone sat down and made up a list of any organization they could find that had key words in their name. It was like a school child writing a long answer to a question hoping that the teacher would be impressed with length of the answer and not pay attention to the content. I personally know that a couple of the groups would not have a stake in the
wind farm. Does a yacht club in Michigan have a stake in what Evanston does? I strongly object to declaring that Northwestern students in general and Greek councils are stakeholders in an Evanston offshore wind farm. These students are here for four to five years and focus their attention on campus activities. They are not invested in what is best for Evanston for next 50 years. I find this offensive. It is even more offensive when a group that is NOT mentioned is the citizens of Evanston, in general. They are the ones who will live with the consequences of an offshore wind farm whether it is good or bad. And it will the tax money of ordinary citizens that pays for studies, potential loss of lakefront access, construction hazzles for years and who may never reap any benefits from the project. It is imperative that ordinary citizens be involved in workshops that present the pros and cons of an offshore wind farm so they can make informed decisions as to whether or not such a project is right for Evanston. Then, if the decision is made to proceed to proceed with the project, ordinary citizens should be able to volunteer to be on a committee to oversee the building process.

Until the broader Evanston community is given an opportunity to learn about the pros and cons of a wind farm, NO City money or staff time should be used to further the project. City staff must help to organize information meetings, but not push the project forward. The City is laying off staff and cutting services. We cannot afford to commit staff time to move a wind farm project forward until there has been a city wide dialogue on whether or not an offshore wind farm should be built.