

MEETING OF THE BOARD OF DIRECTORS: ANNUAL MEETING – MEETING NOTES

Commonwealth Edison 440 S. LaSalle St., Chicago, IL – 33rd Floor
June 5th-6th, 2018

Tuesday, June 5th

- 3:00 pm – 3:15 pm **Welcome and Call to Order** (David)
- Call to Order
 - Agenda review
 - Review and approval of May Board Meeting Minutes

Board Meeting Notes (Suggestion for inclusion in the minutes are highlighted)
June 5, 2018

David called the meeting to order at 3:01 p.m. CDT

Roll Call

In person:

Marge Anderson
Mark MacCracken
David Goldstein (called meeting to order and then
took a call for X min)
Brendan Owens
Val Jensen
Guest, then appointed to the board: Dana Bolton
(ComEd visitor) left at 2:50

Ed McGlynn
John Wilson
Nancy Jenkins-Anders
Michael McAteer
Patrick O'Shei joined at 4:13 CDT

Staff:
Ralph DiNola
Amy Cortese Stacey Hobart

On GoToMeeting/phone:

Peter Turnbull (out at 1:30 for 15 -20 min)
Jeff Harris left at 3:00 pm CDT

Review Agenda

Introduce Dana. Val has been promoted from ComEd to Excelon. Dana is Vice President. 10 years, previously with Anderson Consulting, Lucent, Bank of America. Work primarily in IT, new to EE. Experience working with customers.

Michael mentioned that Doug Baston is resigning from the Board of Directors. He spoke with Ed, David and Michael and mentioned how hard George's passing was and how much it made him think. Doug was a founding member of NBI and felt now was the time to retire. Doug enjoyed his time on the board and will miss those that he's worked with to make NBI what it is. Ralph will reach out and the board members are encouraged to share feedback about Doug's long participation on the board.

Board Meeting Agenda, cont.

Peter made a motion to formally welcome Dana. Brendon seconded. All in favor. No opposed. No abstentions.

Val's short time on the board. Val talked about how Dana is a good fit to help ComEd and NBI grow. Val will forge an Excelon EE perspective, which may be different for different regulatory constraints.

Meeting minutes - Ralph would like to streamline the minutes and bring them back in alignment with best practices before the board approves them. They are too detailed, especially attribution. Also, need to add that we would add signatories to the line of credit

NBI's focus has been on energy, but quickly transitioning to de-carbonization of electricity and transition of vehicle integration into buildings.

Michael seeing unprecedented interest from local communities coalescing about climate and carbon reduction. Challenge for all of us is to assemble and control the rapid pace of interest.

Nancy agrees with the shift to GHG. What role does NBI have on the timing issue (price signals, market impact, time of use) which all have a big impact on carbon. Now both behind and in front of the meter.

Brendon wonders whether NBI should be involved in rate making. Concern about residual suspicion of utility companies. Feels like "blue water."

Nancy agrees that ratemaking may be out of the realm, but EE with time of use is more the focus.

State policy leadership in NY and CA.

CA moving more toward GHG.

NBI tracking ZNE Buildings across North America since 2012. 700% increase

Formalized NBI Policy regarding fuels and emissions in 2/2018

3:15 pm – 4:00 pm **CEO Report**

- Core Mission Support Update
- Development Update
- Program Update (with Amy)

Ralph presentation about the past 5 years.

Michael commended Ralph on his leadership in moving the organization forward.

Marge – NBI as a North Star always pointing ahead and has been since 1997. Happy anniversary. Thank you for staying with us. Remarkable recovery. Exactly the direction with the equity. Powerful way to put the human side on the building.

ZEDx Results over the past two years.

Board Meeting Agenda, cont.

Core Mission Support

Ralph reported that we need to build a bigger pipeline.

Marge reported on Seventhwave:

- 65 proposals in last 10 months
- win rate 46 %
- 100% retention of existing clients
- 18% of proposals to new clients; but this only represents 3% of the win revenue
- utility programs are multiyear and good candidates to bring in revenue
- level of effort/capacity/staff time that it requires is enormous

Brendan asked difference between dead and lost in the viability pie chart – dead is we never heard back; lost means someone else got it.

Ralph mentioned the percent of revenue for a “3” might move up from 25%
Ralph encouraged board members to help direct NBI to new opportunities.

Mark reported that Urban Green is seeing more foundations involved in political action and underserved communities.

Program Update

David asked - Has ASHRAE ever payed NBI for something before the multifamily guide?

Michael: utilities just beginning to discover how important the grid optimal metric is. Consider who the metric is for because commercial real estate professionals are not understanding their interaction with the grid. This metric helps address what they are asking for though they don't know this is what they need.

Mark is friends with Sheila at ASHRAE

David's intellectual challenge. Reconcile approach of continual improvement of consumption performance with ZNE goal. Cathy says “nothing better than zero” but maybe there is. Standard of 500001 update – we will need a good answer in a few years.

Mark asked if Grid Optimal is being taken into consideration for the 40% guide

Title 24 battery integration is happening

Marge reported that when lighting goes away for utilities, they will need something else. The EB work might do that.

Michael agreed that we need to integrate financial aspects to understand how to make this affordable. Need new approach to system benefits charge. Need more focus on comprehensiveness but need financial to drive it.

Marge needs a TRM for the program design.

Board Meeting Agenda, cont.

Stacey Communications Update

(Dana and Jeff depart)

Michael – MF is an unfilled need in the utility world – falls somewhere between residential and commercial.

Michael likes the charts about the survey. Think about who the audience when analyzing the results.

David says that we should be proud. He believes that staff presentation skills can be taught.

Brendan Significant market need graph –grid integration at the bottom, but with NBI thought leadership it will be interesting to see it rise in importance.

Brendan – always hear that ZNE is a niche market, but how else do you start market transformation

Patrick – headway on ZNE in LMI and would like to partner; Stacey to follow up.

David – reverse the cost argument

Mark reported that proposal to Ingersoll Rand – federal preemption law – what if we can go to a major manufacturer to get one consistent stretch code – could you get a manufacturer behind it; they make more money on higher efficiency equipment – some discussions starting –
New mission of Ingersoll Rand to “reduce the energy intensity of the world.”

Ralph reported that Ingersoll Rand has a concern when jurisdiction has a unilateral requirement like DOAS in Washington; concern about a slippery slope (will this cause too much increase too fast)

Jim suggests two tiers – standard baseline and improved baseline – would not run into preemption.

Michael interested in the growth plan and NBI’s role. Efficiency and affordability

Meeting recessed at 3:50 to continue at 9 am Central.

4:00 pm – 5:00 pm **Staff Presentations: Part 1**

- Amy: Advanced Jurisdictions, Oregon Case Study, K-12 Schools
- Stacey: Communications, 2018 and 2019 Forum, Surveys

5:00 pm – 5:30 pm **Discussion**

5:00 pm – 5:30 pm **Adjourn – day 1**

Board Dinner: *Sofi Restaurant*, 616 S. Dearborn St.

Wednesday, June 6th

Board Meeting Agenda, cont.

- 8:30 am – 9:00 am **Arrive, Settle In, and Breakfast**
- 9:00 am – 9:05 am **Welcome and Call to Order** (David)
- 9:05 am – 9:15 am **Recap and Discussion of Previous Day**
- 9:15 am – 10:00 am **The State of Play – Board Member Discussion and Perspectives on the State and Direction of the Industry** (five minutes each and discussion)
- Overview of December discussion
 - Current State of Play

Nancy Ander:

- New executive order in CA: EV goals 5M EV's on the road by 2030, including 360k charging stations. Stretch goal + reflection of expectation of growth in this industry. Subtract kW used for charging from ZNE calculation. NBI could keep an eye on submetering for EV so it is not counted against building owner for ZNE calcs.
- Community renewables. Interesting flux in how customers and utilities look at community renewables. "Stupendously unsuccessful" program on community renewables on commercial side because of how CA IOU program has structured it (3 way partnership between customer, utility, developer - too complex.) PGE renewing and improving, Edison abandoning & refiling. Munis like SMUD have a simpler approach with 2 parties - no developer) NBI could look at customer value proposition. Prioritized community renewables first in the loading because of other benefits - not just carbon, but better for communities and other grid incentives.
- Greg providing active support for workforce development at community colleges.
- "Big bold targets" "Big bold goals" E.g. GSA is going for ZNE on every new project and half of existing buildings unless not cost effective.

Peter Turnbull:

- If someone could find a better way to make community renewables work better, that would be helpful.
- Inventory report by NZE Coalition. Came out in April. 70% growth in residential bldgs in last year. Similar story on commercial side. NBI has been talking to WGBC about an international inventory.
- California's 2020 ZNE target. CEC has marched forward. In 2020, you will need to zero out your electrical use under the assumption that it's a dual fuel home.
- Next codes cycle analytical work will be effective for permits after 2023. David - big advancement in efficiency, not just solar. Zero energy outcomes so you can meet it how you want, including driving down demand.
- Up until now, code has compelled people to put in natural gas where available. Going forward, you will have to zero out electric use not for space heating or water heating - won't be penalized for this in future. More level playing field. Relates to NBI's grid optimal initiative.

Brendan Owen

- LEED development, PEER development. Directly involved in and excited about the prospect of grid optimal. Critical piece for LEED and codes to send the right market signals to building designers and operators so that they can make their buildings better assets on the grid and provide decarbonization.

Board Meeting Agenda, cont.

- LEED 4.1 will remove silos/compartmentalization where possible. E.g. EE vs. RE vs. purchased green power. Outcomes of that compartmentalization equals muddled signal to market, sometimes wrong set of prioritized strategies. Trying to cram it all into one credit, remove onsite vs. offsite incentives and weave into EE section of the rating system and move to a carbon metric. Give project teams credit for the outcomes we're looking for - energy, carbon reductions + human health benefits. Brendan interested in any feedback that will help USGBC do this.
- Grid optimal also playing a role in existing buildings - reward outcomes. Carbon. What can rating systems do to send the right market signals to support more progressive jurisdictions and decarbonization.
- Pilot credit for DC power systems in buildings to take advantage of not converting and prep for increased battery use. Intern spending summer on that - is there a "there" there?

Patrick O'Shei

- New York in the middle of aggressive changes in policy. 180 kbtu additional energy savings by 2025.
- Proposed legislation would change role in products, code, benchmarking and labeling of buildings. Moving forward in commercial benchmarking and haven't finalized residential approach.
- Half of the opportunities are metro NYC vs. statewide.
- NYSERDA funding a stakeholder group to look at tall glass buildings. Don't have a clear path plus market "fashion."
- Worked with NBI on a NYC stretch code that builds on 2018 IECC. Proposed legislation moves entire state to 2021 code in 2022.
- Launching "Buildings of Excellence" competition for ZNE in MF sector. 10 \$1M awards per project each year for next 3 years. Plus open enrollment funding. Expecting low income and other market sector participation.
- Economic development regions - 10 - recommending projects from economic development funds. 10 \$1M awards each year for next 5-8 years to fund economic development projects that move to ZNE.
- State buildings - lead by example. For many building typologies, SUNY will go to all new construction ZNE by 2022 and statewide by 2025 and code by 2030.
- Looking at market based carbon value into the grid.
- Looking at details about how to accelerate electrification.
- Patrick recommending additional \$110M to support these efforts (codes, ZNE, etc.)
- Patrick's job is how to operationalize all of this.
- Nancy asked if there's a cost-effectiveness requirement. Patrick - not worked out yet, SUNY will be a model. Labs, etc. don't fit an economic bath to ZNE.
- Ralph wants to talk with Patrick about how to get this level of funding at scale (IL, NY, CA) to support code advancement and energy efficiency with foundations - how do we get other states to get this kind of funding in place - separates leaders from laggards. What can NBI do to support these kinds of big funding efforts?

Michael McAteer

- Policy transformation: executive orders to lead by example. All state facilities 20-25% energy reduction by 2030, including clean energy. 40,000 electric vehicles by 2030. 100 mW new renewable energy (offshore wind, etc.)
- PSC: docket to look at power sector transformation. 1) scaling EE 2) optimizing RE 3) move towards EV + create charging infrastructure 4) advance CHP 5) introduce microgrids 6) introduce DR. Plus modernize "intelligent grid" to accommodate all of those pieces.
- Utility transformation: current framework and structure of EE not adequate to reach these 6 principals. Reorg at NGrid to figure out how to scale.
- Recognition of agenda to secure \$100M of new revenue that will come from EV, CHP, etc. - integration with EE and bring through same portal; quickly evolving bundle of services "The Amazon Approach."

Board Meeting Agenda, cont.

- Ngrid making focus on community initiatives
- Ngrid focusing on multi family to scale.
- Ngrid elevating services to low / medium income
- Rhode Island task force to move all new construction to ZNE
- Need to reinvent utility performance incentives - what would that look like? Working with PSC.

Steve Nadel

- Not a lot happening at federal level, focus on state and local
- NJ just enacted 2% electric target + 7.5% gas target
- Virginia allocated \$1B to EE over 10 years. Details TBD
- Iowa legislation capped spending at half of baseline, opt-out for all. Utilities behind the legislation. Utilities concerned about falling sales. Right turn of legislature.
- More interest by cities in EE. NBI should be thinking about this. Bloomberg to invest \$70M in cities - 20 to receive about \$2M each + TA, staffing, etc. Buildings and transport focus.
- Report coming out on rural energy burdens. Opportunities higher but so are challenges due to geographical distribution.
- Electrification report coming out next month on opportunities in homes. Esp. homes heated with oil and propane.
- PACE and energy service agreements by banks seems to be taking off. NY state doing some creative things to bring energy service agreements to the residential sector.

Jeff Harris

- From the land of "cheap hydropower," unique perspective.
- Very supportive of grid optimal
- Very supportive of getting to a code that supports ZNE in CA.
- How to create more flexible end use loads on the customer side of the meter at very low cost to activate those loads? On west coast, energy virtually free and sometimes negative. RE being curtailed (large scale wind.) Longest ever curtailment of wind power + excess hydro. Arbitration game with CA solar - buying cheap power. Changing dynamics of pricing and power flows. People are rethinking the value of shifting loads around in presence of very cheap energy costs. Capacity now becoming the big thing. Still a dual peaking system - what happens when winter peak comes? Longer time footprint (e.g. 72 hours) Fluctuation in pricing creates interest in incremental pricing in end use loads so that EE can be activated / enabled to be more flexible in timing to support an increasingly dynamic grid. Plays right into grid optimal.
- How can grid optimal go beyond traditional aggregator or DR conversations to create a lot more flexibility - need a deeper conversation about different components of end use. E.g. could water heaters become tiny batteries if we add flexible capabilities - what could we do with buildings that enable them to be dynamically flexible for excess renewables?
- Thermal storage - we need buildings that can ride through a long thermal peak without dropping a lot of temperature during a winter event. Very efficient shell and add additional thermal storage capacity to right size.
- This all plays into resiliency. Northwest planning for "the big one" earthquake. Government, schools and first responder buildings need resilience and self-performance.

David Goldstein

- Getting to scale. All buildings will be ZNE by 2035 if we keep going the way we are :-)
- IPCC looking at how to get to 1.5 degrees. The right answer for developed countries is deep retrofits taking on even more importance. 1.5 degrees deals with cumulative emissions - every year that we don't retrofit is another year of emissions we can't get rid of.
- Echo the points about grid optimal about being more than HVAC controls

Board Meeting Agenda, cont.

- USGBC should look at building + EV + embodied carbon in construction to get to zero

Mark McCracken

- Electrification! No natural gas or oil being burned in NYC and being replaced by "big-ass heat pumps." We have to go this direction and not confident utilities can do that.
- Ingersoll Rand is not making stuff like this but we need to go there.
- Thermal storage: changing from ice storage to thermal battery. Economizer cycles throws away waste energy from today - CalMac can capture this with heat recovery to put that energy back into the skin.
- Thermal will be a big deal on heating and cooling side. Grid optimal needs to stay ahead of this.
- On the cooling side of things, 40% of those electrons going into building batteries are going to operate a compressor. Economics of thermal vs. electric battery are dramatic - hit the thermal loads first! Keep thermal in thermal loop; save batteries for lights, moving air around.

Ed McGlynn

- Grid optimization is the hot topic - move beyond traditional EE. DR programs. Move away from programs and offer solutions.
- A lot of states and utilities in midwest and southeast are really struggling with grid optimization. Big opportunity for NBI to do some training around that, but struggling with funding and attribution.
- Electrification. Increased focus on EV's and charging stations. Also seeing uptake with non-roadway vehicles (airports, ports)
- More focus on diversity and equity - downside is that many of these firms are new to our industry and how we do things. Big need for education because these firms are going to be the voice.

Val Jensen

- We operate at a failed state. In Illinois, policy does not issue forth from policy makers, it issues from the ground up. Has emerged here from utilities and/or stakeholder communities. No statewide institution to support EE - codes are home rule, etc.
- "Grid optimization" is a meaningless topic. We talk about it as if utility has an inherent right to run the grid, when in fact it was built to serve customer needs. How to optimize for customer value? Thermal storage is the example of spare capacity. ComEd / Exelon interested in exploring how customers can optimize value in buildings by trading capacity.
- Hoping to get a new governor to reinvigorate the policy apparatus in IL, otherwise everything comes from City of Chicago.
- Need to "build a new consensus"

Marge Anderson

- Growth - difficulty for small orgs to compete and address cost of core mission support / overhead
- Workforce development esp in buildings - trades, "dirty jobs"
- Equity & diversity suppliers vs. really deep diversity. Really deep diversity requires hyper local strategies and partnering with community based orgs with stretched capacity who don't care about our procurement rules as well as capacity support.
- Growing divide between utilities leading and utilities actively fighting to stay static played out in heartland - Consumers, ComEd vs. (Iowa, MGE)
- 2 Americas - affordability and access - MH characterization
- Municipalities with aggressive goals and no money
- Integration of behavior and technology - "behavior change" has become a synonym for Opower, requires program design and marketing with an understanding of human behavior. Is there some kind of industry scan/benchmarking for NBI in partnership? NBI building a collaboration around behavior with Edelman.
- Capacity and hiring

Board Meeting Agenda, cont.

10:00 am – 10:15 am **Break**

10:15 am – 11:00 am **Election of Officers, Review of Committees**

VOTE: Election of Officers

- President
- Vice President
- Treasurer
- Clerk
- VOTE: Approve Officers

VOTE: NBI Board Committees

- Executive Committee
- Finance Committee
- Governance Committee
- VOTE: Approve Committees

Officer Elections

- Discussion of governance and healthy board structure for future, including succession. Governance/nominations all rolled into one committee.
- Patrick, Marge, Peter volunteered. David ex-officio.
- Seek nomination / volunteer for clerk/secretary and re-nominate/elect current officers. Mark moved, Michael seconded. Motion: Nominate/elect Marge Anderson as clerk/secretary and nominate/elect current officers for Treasurer, Vice President and President. David and Marge abstained. Motion passed unanimously.

Board Committee vote

- David called for a motion to form a governance/nomination committee consisting of Patrick, Marge, Peter and David as ex-officio.. Jeff Harris moved, Mark McCracken seconded. Unanimous acceptance. Marge abstained.
- Marge moved to re-affirm the finance committee consisting of David, Michael, Ed, Steve, and Mark. Brendan seconded. Unanimous acceptance.

11:00 am – 11:30 am **Finance Committee Report and Discussion** (Ed, Ralph, Mary)

- Staff fiscal review and update

11:30 am – 12:00 pm **VOTE: FY 2019 Budget Review and Approval** (Ed, Ralph, Mary)

- Review of FY 2019 Draft Budget
- VOTE: Approval of FY 2019 Budget

Budget discussion

Should we change the fiscal year to calendar year based on cash flow bumps that seem to happen fairly routinely?

Board Meeting Agenda, cont.

- quorum check – yes, we have quorum
- MOTION from finance committee to approve budget –
 - discussion none
 - no opposition
 - no abstention
 - adopted unanimously

12:00 pm – 1:00 pm Lunch Break

1:00 pm – 2:00 pm **Program Review, Staff Presentations: Part 2**

- Jim: Advancing Codes, NYSEDA, VT
- Mark: GridOptimal Initiative
- Cathy: Itron Technology Roadmap, ASHRAE Multifamily
- edelson codes update
 - ny codes and policy
 - erik makela brought on as staff
 - ny stretch code 2015 and 2018 -> 2019 code for nyc
 - technical innovations for ny stretch
 - NY clean energy jobs and climate agenda – proposes move towards carbon focused metrics
 - Multi-task support for nyseda
 - Discussion
 - Model was being worked on for years before political will existed
 - Vermont codes
 - NBI was partner on rfp for 2019 stretch code based on 2018 iecc
 - Residential and commercial
 - NBI engaging to support evolution of federal pre-emption
 - Moving codes forward
 - Guide for cities and states published
 - Discussion
 - electrification is a prime driver behind carbon reduction
 - Bloomberg and nrdc are pushing electrification agenda (follow-on to city energy project)
 - Hasn't paid as much attention to codes as it could have
 - May be a great opportunity for NBI as a result
 - NBI looking at coalition to go after funding that is available for cities carbon work
- Frankel – grid optimal
 - Grid optimal overview – key themes
 - Many opportunities – at many scales for better integration
 - RMI accelerator recap – elevator pitch and work plan developed
 - Workplan overview
 - Methodology framework overview
 - Static
 - Flexible
 - Dispatchable
 - Permanent efficient

Board Meeting Agenda, cont.

- Peak shifting
 - Storage
 - ??
 - Stakeholders and value proposition – overlapping interests support grid integration
 - Buildings
 - Regulators
 - Utilities
 - Research needs
 - Grid
 - Buildings
 - Policy
 - Pilot
 - Discussion
 - Do buildings need to have AMI?
 - Maybe?
 - Grid optimal is a strategy for circuit level problems
 - May need to consider transmission and distribution
 - Need some plan for EV charging and infrastructure
 -
- Frankel – zero cities
 - 40% stretch guide complete
 - Boulder, NYC, Phoenix work
- Cathy Higgins
 - Ashrae multifamily standard and guide
 - Low and midrise
 - Not a prescriptive standard – it's a guide
 - 15-25% savings
 - timeline overview
 - Cec-iron EPIC ZNE technology gap assessment
 - Overview of report
- Strategic Plan review and discussion
 - Carbon reduction
 - Electrification
 - Discussion around fuel wars
 - How to stay out of politics/fight
 - Emissions focused
 - Grid-optimized buildings
 - Advancing codes to zero

2:00 pm – 2:30 pm **NBI Strategic Plan Review and Discussion**

- Review of 2018 KPIs
- Approach for 2019

2:30 pm – 2:45 pm **Break**

2:45 pm – 3:15 pm **Generative Session, Program Approach and Prioritization**

Board Meeting Agenda, cont.

- Conduct generative exercises:
 - Define specific program opportunities for NBI growth
 - Carbon and Carbon Policies
 - Role of Renewables vs EE
 - Grid Optimization
 - ZE Consulting
 - Outline key strategic partnership opportunities
 - Discuss specific NBI and board member organizational partnerships
 - Prioritize activities
 - Define Action Plan

3:15 pm – 3:45 pm

NBI Sustainability and Growth Plan – Review

Review and discuss NBI Growth Plan and Staffing Plan

- Review current growth plan, revenue and staffing
 - Growth plan
 - ZE leadership
 - Building and Program Innovation
 - Advancing codes and policy
 - Strategic Markets
 - K-12
 - Advanced jurisdictions
 - Midwest
 - East Coast
 - Geographic expansion
 - Discussion
 - For grid optimal – we need a prioritization plan
 - Data is needed
 - Should we be setting up grid optimal as a collective?
 - Multi-family deep energy retrofits
 - Electrification guide?
 - Plug loads
 - NZE forum location discussion
 - California – know's how to party
 - Seattle
 - Chicago
 - Chattanooga
 - Consider partnering with existing event to bring nbi technical content and then let gtz be a non-california event
 - Salt lake city is actively courting gtz
 - NBI consulting for product manufacturers
 - General discussion
 - Appearance of conflict vs. real conflict
 - General comments about not being overly concerned
 - Suggestions that by-law review and update would be worthwhile

Board Meeting Agenda, cont.

3:45 pm – 4:00 pm

Closing

- Closing discussion
- Schedule future meetings
- Other Business

4:00 pm

Adjourn Board Meeting (David)

- The meeting was adjourned at 3:56 pm CDT