



NextGrid Study Working Groups Draft Report Review and Public Comment Session Agenda

August 20,2018

10:00 am - 3:20 pm

Location: ICC Main Hearing Room, 160 North LaSalle, Suite C-800
Chicago Illinois 60601

WebEx Information:www.webex.com or 1-415-655-0002

Meeting number (access code): 809 677 855

Meeting password: 2zF777At

Meeting Summary

[Note: descriptions of comments and discussion are condensed summaries and paraphrases]

Agenda Item I: Welcome and Overview

Dr. George Gross, Lead Facilitator, University of Illinois welcomed attendees to the meeting, opened meeting under the Open Meetings Act, took attendance and reviewed the meetings agendas.

Attendee List

NextGrid Project Team:

In Person:

- Marty Cohen, *WG 4 Leader and Senior Study Consultant*
- Terrance Garmon, *Illinois Commerce Commission*
- Katharine McErlean, *Illinois Commerce Commission*

WebEx:

- Pete Sauer, *University of Illinois, NextGrid Lead Facilitator*
- George Gross, *University of Illinois, NextGrid Lead Facilitator*
- Lynnea Johnson, *University of Illinois, NextGrid Lead Facilitator*

Working Group Members:

In Person:

- Kristin Munsch, *Citizen's Utility Board*
- Philip Roy, *Commonwealth Edison*
- Jeff Orcutt, *Chapman Energy Strategies*
- Gerard Fox, *Retail Energy Supply Association*
- Andrew Barbeau, *The Accelerate Group*
- Chris Townsend, *NextGrid Coalition*
- Pete Colarelli, *Exxon Mobil Corporation*
- Vanessa Knapp, *Illinois Commerce Commission*

WebEx

- Jim Bluffing, *Ameren Illinois Company*



- Mike Abba, *Ameren Illinois Company*
- Ryan Ellen, *Ameren Illinois Company*
- Rick Welton, *Ameren Illinois Company*
- Anne McKibbin, *Elevate Energy*

Agenda Item II: Introductory Draft Chapter

Draft Introductory Chapter Overview by Marty Cohen, *WG 4 leader and NextGrid Senior Study*

Consultant:

- Draft Chapter is in an early stage. The point of introduction is to set a context for the NextGrid report. Sets a background. Is Illinois specific. Looks at history, how we came to this point.
- Includes regulatory framework, laws that have been passed about regulatory policy. Is a description of what has been done thus far in terms of grid modernization and where we think we are at? I want to stress it is preliminary and subject to change. This meeting is an opportunity for the public to provide input. verbal or written input will be seriously considered to reflect the views of all stakeholders.
- Reviewing the draft of the report.
- Starts with Samuel Insull. Starts with various laws. Starts with Customer Choice Act in 1997. Set Illinois on a different path from neighboring states. Looking at what the future may hold in the NextGrid process. Illinois Power Act is discussed. Another seminal piece of legislation. Energy Infrastructure Modernization Act (EIMA) of 2011. Future Energy Job Act, (FEJA) was enacted in 2017. Some of That law's provisions are being implement.
- Discusses geography of Illinois and characteristics of the state that are impacted by electricity. Describes Illinois and how it is different from other states. Report talks about PJM and MISO which are RTOs. Information about breakdown of supply and demand for the state.
- Information about sources of power by fuel type or generation type.
- Draft has in it a description of the NextGrid Study, what it does, who's involved and its process. An introduction to the seven working groups and a conclusion how we expect this study to be used.
- We are more than open, we are soliciting public input and feedback to the preliminary draft. During the drafting process there will be opportunities for input.

Floor Open for Public Comments:

- Dr. Gross: Input is strongly encouraged.
- Comment 1: NextGrid coalition: Introductory chapter was not discussed, is there any thought to asking the seven working groups to talk about the work that they have done and how to best summarize their working groups.
- Dr. Gross: Working Group Leaders have been so tied up from their work we did not want to take them away from their task. Welcome comments on structure, omissions, submissions. Going to add GridWise comment that Illinois is 2nd in grid modernization efforts.



- Marty Cohen: WG 4 comments suggested that material should be moved to introductory chapter. Those were appropriate comments. Context setting was important. Has not been discussed in each working group.
- Comment 2: Is appropriate to set context and have introductory chapter. Is important to alert the working group members of Introductory chapter. Did not know if there were notices? More important question is going to get opinion of those experts.
- Comment 3: Requested citations from utilities. Can you explain that interaction to date?
- Marty Cohen: ComEd and Ameren have been requested for information about their service territories.
- Dr. Gross: All we can do is ask them. It does not mean that they are going to comply. Best way is to continue with email blasts and hope people respond. There will be future times to review and comment. We have a robust process in getting input.
- Marty Cohen: What input did utilities have into this draft chapter? Utilities were asked for characteristics of their service territory.
- Dr. Gross: Also provided various fillings about Smart grid up to date.
- Marty Cohen: Future input from other parties- we solicit that and want comments and input of what you think should be in the introductory chapter.
- Comment 4: the introductory chapter was not the same process. Did not have a forum to give feedback.
- Dr. Gross- This is the forum to provide comments and questions. If you have certain issues with what the utilities provided, both utilities have representatives in the room, please ask your questions.
- Marty Cohen: All people have an opportunity to submit comments in paper process.
- Comment 5: A lot of data included in the introductory chapter and different perspectives that would benefit from other process in NextGrid. Has been suggested to provide written comments, any sense in the timing associated with that.
- Marty Cohen: There is no formal deadline for the next draft of the introductory chapter, the draft introductory chapter has been released. Will most likely not be until all working groups chapters have been released.
- Pete Sauer: The purpose of the introductory chapter is to set the stage for the entire study. Could explain how working groups were selected. There is always an opportunity to provide input. If someone wants to discuss the introductory chapter, right now is a perfect time. Otherwise will ask WGLs to look at introductory chapter to ensure properly represented their chapter.
- Comment 6: Request set deadlines for revisions to the draft of this introductory chapter. Agree that there are several different issues in the market place to set the appropriate back drop for this report.
- Pete Sauer- Process- if you send any written comments that is fine. If you feel strongly about some content in that introductory chapter, now is a perfectly good time. Today and now and October. We will have a public draft available roughly in October. Everyone will have a chance to comment and could comment on the drafts now. Written comments are the best way. Written comments will be disseminated to Working Group Leaders and the Lead Facilitator.



- Marty Cohen: Today there are numerous public comment sessions. It is an opportunity to hear public comments. As of now the process to comment on the introductory chapter is today for verbal comments and subsequent comments may be written in. Asking for a deadline?
- Comment 7: Introductory chapter is missing several different perspectives. Would like deadlines for comments and revised draft.
- Comment 8: The draft introductory chapter is well done. Provides a good description.
- Comment 9: No comments today but appreciate the opportunity, probably will submit comments by the deadline.

Marty Cohen: Invite additional comments:

- Comment 10: How much do you think there will be shifting around of all the chapters? For example, how stuff from WG 4 belongs in Introductory chapter.
- Marty Cohen: There will not be a lot of shifting around. The intent is to be rather dry and factual. The facilitators at University of Illinois will have a lot to say about what they believe is appropriate for moving material around. There is some redundancy on the same subject matter. No one knows quite yet how voluminous it will be. No one will be editing for content.
- Dr. Gross: University of Illinois will Look at the study from a full report point of view. WGs only looking at chapters from m their own scope. Good example- WG 4 discusses why community and customers are important, a comment requested that moved perspective be moved into the introductory chapter because that is something very important to the report. We want a cohesive study. There will be that kind of movement.
- Comment 11: Introductory Chapter pg. 4- Illinois progress on Grid modernization. How were some of the benefits chosen? Did the Commission check out the benefits? ComEd kilowatts trend below the average price. Have that in report directly related to EIMA.
- Dr. Gross- Our job has not been to make a cost benefit analysis, much longer study and much different budget. Utilities were invited, and this was the response we got to the request.
- Comment 12: Has the benefits been properly looked at?
- Dr. Gross: Will explain information came from the utilities.

Hearing no additional comments.

Meeting Adjourned.

Agenda Item III: WG 1: Draft Report Review and Public Comment

Attendee List

NextGrid Project Team:

In Person:

- Marty Cohen, *WG 4 Leader and Senior Study Consultant*
- Terrance Garmon, *Illinois Commerce Commission*
- Katharine McErlean, *Illinois Commerce Commission*

WebEx:

- Pete Sauer, *University of Illinois, NextGrid Lead Facilitator*
- Dr. George Gross, *University of Illinois, NextGrid Lead Facilitator*
- Lynnea Johnson, *University of Illinois, NextGrid Lead Facilitator*



- Rizwan Uddin, *University of Illinois Lead Facilitator Team*

Working Group Members:

In Person:

- Gerard Fox, *Retail Energy Supply Association*
- Brian, *Citizen's Utility Board*
- Philip Roy, *Commonwealth Edison*
- Daniel Barr, *ITC*
- Judith Gorman, *American Petroleum Institute*
- Jeff Orcutt, *Chapman Energy Strategies*
- Chris Townsend, *NextGrid Coalition*
- Pete Colarelli, *Exxon Mobil Corporation*
- Vanessa Knapp, *Illinois Commerce Commission*

WebEx

- Jim Bluffing, *Ameren Illinois Company*
- Mike Abba, *Ameren Illinois Company*
- Ryan Ellen, *Ameren Illinois Company*
- Rick Welton, *Ameren Illinois*
- Anne McKibbin, *Elevate Energy*

WG 1 New Technology Deployment and Grid Integration Draft Chapter Report Review and Public Comment by Marty Cohen, WG 4 leader and NextGrid Senior Study Consultant:

- Marty Cohen: WG 1 discussion of draft. Working Group leader is Dr. Shahidehpour. Draft was subject to group process and comment and redrafting and now resides in the Lead Facilitator process. Still subject to comment and potential reworking as needed.
- WG 1 Draft Report Comments to draft report: WG 1 report is intended to be primarily descriptive of technology, current and future. Not intended to delve deeply into policy issues.
- There are 15 questions that WG 1 intends to address:
 1. How does Grid operate?
 2. Does Illinois need a modern grid?
 3. What would be a modern grid? How would the grid be different from the one we have?
 4. How are customers' needs changing? A question addressed by all working groups.
 5. What value is provided by distributed resources?
 6. Looked at restructuring and what happened in Illinois and implications of the last 21 years.
 7. How has oversight of electricity supply chain evolved?
 8. What emerging technologies are affecting the distribution system?
 9. What are the effects that they have?
 10. What are opportunities and challenges associated with micro grids?
 11. What is a smart city?
 12. How will electrification of transportation affect the grid and its users?



- a. Electrification of transportation has a lot of implications for the system. Those issues are taken up by several if not all working groups because that is one of the fundamental changes.
13. How is distribution planning affected by DER growth? If proliferation of DERs, both a large load and large source of supply at different times.
 - a. Does the growth of supply side resources such as solar that provides two-way growth? Those affect system planning and profound affect.
 14. What is DERs value to distribution system- also looked in WG 6, 7 and 4, perhaps others. This is a key set of issues the Commission will be taking about by law when solar and PV reaches threshold level. Will change way providers of rooftop solar are compensated.
 15. Discussion of distribution platform concept.
- Report is more than 50 pages. Has been edited by working group members. Is available on NextGrid website and subject to written comments by University of Illinois.

Floor Open for Public Comments:

- Comment 1: Working Group did a good job summarizing challenging the delivery system planning, more time could be spent on the wholesale level and the obligations of transmission planning, feeds up determines needs or lack of needs. Need more efforts to spell out needs of transmission planning of that.
- Marty Cohen: Transmissions issues are eluded too. Not discussed in detail. Given limitations of scope and paper. Intent was to focus on state jurisdictions issues not federal level.
- Comment 2: Look at obligations of distribution planning, that load is a very important piece. At federal level there is a lack of jurisdiction. Maybe the state of Illinois can promote some form of reporting. If we wait until the distribution system changes could be an opportunity.
- Dr. Gross: I view this comment as very important. Second, what Marty stated, the focus of NextGrid, Looking at issues not within federal jurisdiction. ISOs and RTOs do have planning obligations. It is important to note such obligations. Please submit a written comment.
- Comment 3: WG 1 draft chapter is a quite a good manual for delivery and production in end use sectors. Certainly, will be suggestions and a few corrections. Overall, Chapter 1 draft is a pretty good indication of the value that NextGrid has been.

Hearing no further comments, we can recess until 1:00 pm.

Meeting Adjourned.

Agenda Item IV: BREAK

Agenda Item V: WG 2 Draft Report Review and Public Comment

Attendee List:

NextGrid Project Team:

In Person:

- Marty Cohen, *WG 4 Leader and Senior Study Consultant*
- Terrance Garmon, *Illinois Commerce Commission*



- Katharine McErlean, *Illinois Commerce Commission*

WebEx:

- Pete Sauer, *University of Illinois, NextGrid Lead Facilitator*
- George Gross, *University of Illinois, NextGrid Lead Facilitator*

Working Group Members:

In Person:

- Brian, *Citizen's Utility Board*
- Philip Roy, *Commonwealth Edison*
- Daniel Barr, *ITC*
- Judith Gorman, *American Petroleum Institute*
- Chris Townsend, *NextGrid Coalition*
- Pete Colarelli, *Exxon Mobil Corporation*

WebEx

- Dawne Wesley
- Larry Crittenden
- Omarci
- Philip R O'Connor, *PROactive Strategies*
- Rebecca Judd, *Sierra Club Illinois*
- Suzanne Stelmasek, *Elevate Energy*
- John Thistle, *Ameren Illinois Company*

WG 2 Metering, Data and Communications Draft Chapter Report Review and Public Comment by Marty Cohen, WG 4 leader and NextGrid Senior Study Consultant:

- Opening remarks: Call meeting to order under OMA.
- This meeting is for public comments that can be submitted any time to the NextGrid website.
- WG 2: subject on metering, data and communications. Its draft report was submitted several weeks ago.
- Brief introduction to content and its report- Report covered metering, data and communications. Metering, data and communications is part of the move from one-way unidirectional network system, pushing power from several power plants to end users to a distributed system where power flows can be two directional on a single line and multi directional on a network. Concerns remain on power quality, system resilience, reliability. Want to maintain reliability and even improve it. Maintain high power quality and resilience which could have disruptions from equipment and actions from people with benevolent intent.
- WG 2 met 4 times. There was overlap with issues addressed by WG 1 and other working groups. For example, EV charging issues.
- The draft report provides a comprehensive overview of current data collection, frequency, data use by utilities.



- In the metering department, AMI has been almost fully deployed in ComEd's network. Illinois will be fully deployed much faster and quicker than almost any other state. By the end of 2019 will have full deployment. Both utilities have been ahead of schedule. AMI provides interval data. Can be valuable in supporting all kinds of functionalities and options. Including creating rate opportunities, system response and conditions, support for voltage optimization, home area networks.
- These issues are described in some detail in WG report which is about 27 pages long.
- Issues related to meter accuracy in this report. What is a meter? In theory we have competitive metering options. May be a day when competitive metering becomes a business.
- Moving on to data. Issues involve usage, frequency, and data. Data is only useful if can be interpreted analyzed and interpreted into something actionable. The data needs to be accessible. Data portion discusses current data collection practices by Utilities, uses data and availability of the data. This is not a discussion without controversy. What should be the data utilization rule? How should data be collected and stored? What data to collect and frequency? What does it cost to collect data and who should pay?
- Working groups are not attempting to forge a consensus or develop a strategy, issues are meant to be explained and considered so issues are identified when policy makers, regulators and the public want to learn what stakeholders think about.
- WG 2 discusses technology and system wide incentives.
- Issues around access to data. How it is accessible? There are a range of cases. Balance access to data. How authorization is given to third parties by customers to access data? Also discussed in WG 4. Tricky and important issues. Will become more important down the road.
- Final issue- Communications- without communications network, which puts the smart in smart grid. There would be no value in the investment in modernization. There are different ways in which communications can be accomplished. What are the tradeoffs? How do you maximize the bang for your buck to ensure you have a reliable system? Utilities have always had communication systems in place. Issues included discussion of private networks and public networks. Discussion on why utilities have moved into private networks.
- Technology and communications is continually going through improvements. How do you get the most advantageous system with low costs because costs are crucial and paid for by end users?
- Discussion of how and why it's done by utilities in Illinois.
- Security was a big issue, also addressed by WG 3. A whole range of issues considered by WG 2 participants. Looked at ComEd and Ameren networks that deploy different technologies. Also looked at level of household and communications within smart houses.
- Working group examined how network needs would be changing and communication needs of the future.
- Different focus on remote communications, 4G and potentially 5G. Discussed how that would be functionalized and went into engineering standards.
- Discussion about what kind of communications Networks, systems, protocols if we move to transactive network system. All customers have potential to be prosumers both producing and consuming, transacting, potentially buying and selling energy.
- All these new technologies require a communication network.



- All working groups attempted to see around the corner in what we would need in the future to make this future market work. Several other issues such as, right of ways, who gets to move what, when on poles?
- Conclusion: WG 2 was broadly focused on what was needed to deploy and maintain an integrated network with distributed resources and different uses of customers and data as the network grows more complicated.

Floor Open for Public Comments:

- Pete Sauer: one issue we will be looking for is the data from the smart meters, ownership issues, privacy issues. A lot of issues that need to be evaluated.
- Marty Cohen: There are four or five dockets at the ICC. Question of ownership issues? Commission has not granted property rights regarding data. Everyone understands access to data is critical. Question Commission is grappling with how you ensure access to data while maintaining privacy and security. We have green button protocols in place that allow customers to access the data but for third parties to access the data is more complicated issue that needs to be addressed to everyone's benefit.
- Comment 1: Since your talking about infrastructure changes in the grid of the future. It needs to be in notes that this WG report needs to have a cost benefit analysis. Might want to reference the smart grid study. There has been a discussion on whether there will be policy recommendations from this report. Need a lot of work to be done on cost benefit analysis before legislatures can make policy from the NextGrid report.
- Marty Cohen: Cost benefit analysis issue comes up often, the issue of that benefits must exceed the costs is agreed by all participants. Where we get into a lot of discussion is what are the benefits and defining value.
- Comment 2: This dove tails into the conversation about setting the backdrop. There has been substantial benefit into the grid from EIMA. Trying to capture those benefits from EIMA seems to be good subject matter of this report. Going forward need to figure out what the costs are going forward. This is also an opportunity to look backwards. Here is what utilities wanted to do, here is what they did, what are the costs, what are constraints. Then we can look forward.
- Comment 3: WG 2 draft is quite valuable, makes the point that AMI and other communications can be foundation for achieving greater granularity. This notion of granularity has been an important one in other working groups. Is valuable that this draft addresses this question of granularity.
- Comment 4: Request a statement in the introductory section this is not a consensus document. There were enough participants and there was a lot of professional polite disagreement. We did not try to come to consensus. We tried to cover as many ideas as we could.
- Dr. Gross: Our process was not a consensus building process. We encourage WGLs to state specifically were there was agreement and were there was disagreement. Not the intent of the process to build consensus, that would have been a different process.

Hearing no further comments, we can take a 10-minute recess.

Meeting Adjourned.



Agenda Item VI: WG 3 draft Report Review and Public Comment

Attendee List:

NextGrid Project Team:

In Person:

- Marty Cohen, *WG 4 Leader and Senior Study Consultant*
- Terrance Garmon, *Illinois Commerce Commission*
- Katharine McErlean, *Illinois Commerce Commission*

WebEx:

- Pete Sauer, *University of Illinois, NextGrid Lead Facilitator*
- George Gross, *University of Illinois, NextGrid Lead Facilitator*
- Dr. Govindarasu, *WG 3 Co-Leader*
- Rizwan Uddin, *University of Illinois, NextGrid Lead Facilitator Team*

Working Group Members:

In Person:

- Philip Roy, *Commonwealth Edison*
- Daniel Barr, *ITC*
- Chris Townsend, *NextGrid Coalition*
- Pete Colarelli, *Exxon Mobil Corporation*

WebEx

- Dawne Wesley
- Larry Crittenden
- Omarci
- Philip R O'Connor, *PROactive Strategies*
- Rebecca Judd, *Sierra Club Illinois*
- Suzanne Stelmasek, *Elevate Energy*
- John Thistle, *Ameren Illinois Company*

WG 3: Reliability, Resiliency, and Security Draft Report Review and Public Comment presentation by Dr. Govindarasu, WG 3 Co-Leader

- Dr. Govindarasu- Co- working group leader. Working group is lead myself and colleague, Dominic Saebeler.
- First walk through the key components, process we followed, and primarily focus on the content of the report.
- This is a draft report posted on the NextGrid website. Today will focus on high level over view and happy to answer questions.
- Report – table of contents sets up context and background, then goes into thematic areas, technology and people and so on. Finally makes some discussion and a conclusion at the end.



- WG 3 Report Introduction: Laid out introduction, reliability, resiliency and security are the focus and how it is important in context to NextGrid. What is the focus.
- WG 3: Three key aspects of working group focus of the study. We had presentations from industry experts, academia focusing on grid reliability, resiliency and cyber security.
- Definitions came from DOE. These are not separate issues but interconnected.
- Thematic areas include technology, people, process, regulation and compliance. Came up with a holistic approach. It is not just a technology issues. The themes of the working group are laid out in gears and they should align to have a holistic system.
- Every piece of the puzzle is important when it comes to cyber security and resiliency of the grid.
- Held working group meetings and heard from experts to present on themes and then followed up on discussions. Then defined challenges, solutions through discussion.
- After discussion through email and other forms drafted reports through process from University of Illinois.
- Technology: Focus on content of report itself. Section on technology started with a 4-quadrant chart. Identified for thematic area, what are the challenges? What are the opportunities when dealing with challenges? What are the potential solutions and finally, key action items.
- For example, some of challenges- the pace of IIT and OT deployments. IT needed in four years to five years change. On the other hand, operation technology, according to SCADA, and people managing the grid are changing every five to ten years. The converge of IT OT departments may be a challenge.
- The chart is also a narrative, describing issues and implementation.
- For example, when it comes to opportunities, there are several enabling technologies such as IOT. There are opportunities but also present some challenges such as privacy. For example, the cloud, how to utilize infrastructure of the cloud and then there are cyber security challenges.
- Potential action items- to be proactive rather than reactive. Solutions on the left side bottom quarter. Apart from chart, a narrative describes each chart.
- People- 2nd thematic area. One idea, how do we confront the knowledge gap. What are needs from work force of IT specialists managing the grid and as well consumers using the grid.
- Process- 3rd thematic area. What are challenges with process? How do you prioritize what needs to be done consistent with business model? How to ensure the right metrics and methodologies as part of the process? Questions about risk-based approach in cyber security as opposed to looking at everything, look at what are potential risks? A lot of good publications such as the NIST standards.
- Finally, Regulation and Compliance: here, have several issues when it comes to regulation, what kind of system, distribution system may have different rules. Key is to have security, risk-based model, risk- based security, compliance process provides a baseline and need to go beyond the baseline. Utilities system go beyond the base line. Action items in distributed energy resources, integration, demand side, what are interest when generation side is also on demand side.
- Efforts to have partnership with consumers, utilities and various stakeholders in various levels of the ecosystem. Having a degree of familiarization is important, can be a part of the process.
- Once we had the 4 thematic areas discussion, have the conclusion, summarizes what is in the report.
- Then we also have a presentation of cross-cutting issues. Cross-cutting issues are important in other working groups such as cloud computing and machine learning for example. We defined



several cross-cutting issues. Also shared this information within the working group so this information can be shared.

- Finally, reference, working group members.

Floor Open for Public Comments:

- Dr. Govindarasu: The floor is open for public comment. I would like to hear any questions, comments and general feedback.
- Comment 1: I notice what is excluded on this report is specifically costs. Is there any thought to try to collect that information from these experts to include in the report or why the whole question of costs, which is repeatedly recognized as important, was not part of process of coming up with this report?
- Dr. Govindarasu: As far as working group 3 is concerned. We did discuss this issue at length. All require resources. How to assess and allocate the cost. It is important issue we discussed. There is not simple answer. In technology, the costs are done in certain way. We recognize costs is important consideration, we stayed away from cost because kept scope of report to what was discussed. Costs are very challenging and changes with time. So many ways to assess costs, to be on the safe side, we decided it's beyond the scope of the report other than sayings it's very important.
- Dr. Sauer: If costs were included, the report would be outdated with costs by the time report is published. To do costs, need estimates for costs for a certain point of time.
- Marty Cohen: When talking about costs for cyber security, what is the way you would do analysis? Because a cyber breach would be catastrophic, how would you assess cost?
- Dr. Govindarasu: What would be consequences of such event? What would be costs associated. A lot of industries look at risk-based approach. What would be the consequences if such an event happened? That drives the investment model. If a high-risk event, will have security investment. Risk based investment when it comes to cyber security. NIST is a resource. Cyber security is a moving target, issues of sustainable security presents itself. Risk analysis, look at what thematic area to invest in the most optimal way to eliminate risks.
- Dr. Gross: Some security standards are required under regulation.
- Comment 2: If there is a high-risk analysis, is there a low-cost way to address the issue. Also, evaluate from a consumer perspective, to understand what the proposed costs are.
- Dr. Govindarasu- this is a two-step process. It is very hard to come up with a cost with a specific system. It is a great question. We can see how we can address this issue. Value the importance of the questions. What are the challenges, why it cannot be precisely quantified? We will try to take that up into the report.
- Marty Cohen: Are there additional comments? Hearing none we will conclude several meetings that took place today. WG 4, 5, 6 and 7 will hold another public comment session to elicit views of interested parties and the public at large. We have nothing scheduled presently.

Agenda Item VII: Closing Remarks

- Dr. Gross: Thank everyone for comments and questions, they were evocative and will be considered when writing our report.
- I encourage everyone to please send the comments on the report. Thank you, Marty and Mani, for the presentations.



- Pete Sauer: Thanks, Manimaran and Marty. Marty you have done a wonderful job instructing all of this. Received some great comments.
- The rest of the reviewing is just starting.
- We are preparing to and working to make reports into a single flowing report, index the overlaps so it is easy to follow multiple working group issues, will also be looking at core questions that were sent out to guide them to working groups.
- We will see to what extent the draft chapters answer the core questions.
- We Will release a public document in October. Happy to answer questions.
- Comment1: Request core questions.
- Pete Sauer: I will distribute core questions.

Meeting Adjourned.