1. *Which two columns sum up to give the values in Columns J (on slide 5)?*
   Column J is derived from adding the values in Column C (energy converted to MW) and Column H.

2. *Slide 9 shows a significant drop in the wind numbers. Are these based on changes made as described on slide 3 or were there any other drivers?*
   The changes in the wind values generated within the states of Michigan, Ohio, Illinois, Indiana and Wisconsin as described on slide 3 resulted in the decrease of flows across the interfaces as illustrated on slide 9. The point to note is that when you change the percentage of wind generated within the state for the importing states it will impact the amount of wind that is exported out of the exporting states since the wind models are developed to meet approximately 80% (percentage varies with state) RPS requirements of the states within the study area.

3. *NE is identified as an exporter with up to 6.5 GW going to other states. No lines are shown leaving the state in any of the concepts. How is this export achieved?*
   NE just came out with an EHV overlay study and we intend to work with NE to get the appropriate overlay and data in order to integrate this into the alternatives for analysis.

4. *Why are there are no transmission line shown across Michigan? Is this because Michigan is considered a self sufficient state?*
   Alternatives 1 and 4 show EHV lines through the state of Michigan with the intention of evaluating the impacts of an additional west to east EHV line across the study area. This study respects the states law and takes into consideration Michigan's obligation of meeting their requirements through in-state resources. As such, the state is not shown to be importing any wind from other states

5. *On slide 7, there are no exports shown from Michigan and Minnesota. Prorating the wind based on NREL seems arbitrary.*
   The wind assumptions are not arbitrary. These values are based on studies by NREL, RGOS, AWEA and CARP.

6. *How did we prorate the wind based on wind potential provided by NREL?*
   As seen on slide 4, wind capacity in North Dakota is 233949 and in Minnesota it is 210742. The value of wind that will be developed in the states to meet their RPS requirements was calculated using the same proportions between states as on slide 4.

7. *We already have 345 kV and 765 kV facilities between the states and they have some existing transfer capability. Will that capability be zero in the study?*
   The transfer capability of the existing lines will be considered in the study. All the alternatives that have been developed are conceptual and are based on the amount of imports and exports that were calculated between the states in order to meet appropriate state RPS requirements. The next step will be to model all the lines in

the conceptual alternatives in a power flow model. This will provide information on the loadings of the existing and the new transmission lines and how the system as a whole performs from a reliability perspective.

8. *Will the study consider the installation of capacitor banks, SVC's etc. to increase the SIL loading of the existing lines that might minimize the need for additional transmission capacity?*
   SVCs and other reactive correction techniques will be used to provide stability of solution to the base load flow cases.

9. *At an earlier public meeting, it was indicated that the Smart Study would consider DC lines in their alternatives. Some alternatives show DC lines across the Lake Michigan but no west to east DC in the western part of the study area.*
   We plan to start the power flow analysis to evaluate the performance of all the conceptual overlays shortly. If following analysis, some lines are seen to be heavily loaded most of the time and are long enough to justify the need for HVDC, the study sponsors will give some consideration on evaluating a DC line.

10. *What is the timeframe for the next public meeting or the publication date for the report?*
    Phase I, which includes the steady state analysis, is scheduled for completion by the beginning of February, following which there will be an announcement of the next public meeting.

11. *Why did we not consider 500 kV transmission lines in the overlay?*
    The eastern part of the study consists of 765 kV and 345 kV EHV lines and as you go west the EHV system consists of mostly 345 kV lines. Since the transmission capacity of the 500 kV is close to 765 kV it seems logical to build a 765 kV overlay which will provide more flexibility for the future.

12. *Are you going to release what the wind source points are before we provide input on the transmission alternatives? We would want to know the inject points before we can provide input on the alternatives.*
    The study sponsors are finalizing the wind injection points in the states within the study area and plan to post this information on www.smartstudy.biz.

13. *Similar efforts are underway in WECC where lines are being considered from Nevada and Wyoming to Las Vegas. Will any consideration be given in this study to tie into the western system? It would be interesting to capture the diversity in the area.*
    The scope of the study is to develop transmission to meet renewable requirements of several states: ND, SD, MN, WI, NE, MO, IL, IN, OH and MI which is a large area by itself. We have several conceptual alternatives and we would like to perform some reliability and economic analyses in order to identify the top performing alternatives for the study area. A tie into the western system is beyond

the scope of this study but could be addressed in a follow up study in order to capture the diversity between the areas.

14. *On Slide 9, could you explain the basis for drawing the cut-sets?*
    The cut-sets provide information on the power that will be flowing across interfaces and helps define the transmission capacity that will be required to deliver that power through. For example, 8 GW is expected to flow across interface 1 so there should be adequate transmission capacity to facilitate that flow.

15. *What year models are we using for the analysis?*
    We will be developing 2029 models and then working backwards to develop 2024 and 2019 cases in order to get a sense of the phasing of the project.

16. *By when do you need the comments on the alternatives?*
    Comments before the end of the year would be helpful.

17. *Do your proposed models address utilizing existing ROW's (RR's/Interstates/Existing lines) for new lines?*
    This is a conceptual study so the actual physical routes are not determined. This study does take into account the known zone siting requirements for some of the states as provided by the sponsors.

18. *At some point, we have to start putting steel and wire on the ground. What are the expected timeframe for the installation of the lines as proposed in the study?*
    The whole idea of embarking on the study is to determine what transmission lines are needed in advance in order to meet the state policy requirements. It takes several years to get regional and state authorization in order to be able to get approvals for these lines and between 3-5 years to actually build the lines. This study will give us the much needed head start and will enable the sponsors to approach the authorities and begin construction of the lines in a timely manner.

19. *Are there audio recordings available for the November and December Open Stakeholder Meetings, for those who were unable to listen to the calls?*
    The December 18, 2009 presentation material is posted on www.smartstudy.biz for your reference. We did not record the November and December Open Stakeholder meeting but plan on releasing minutes of the December 18, 2009 meeting documenting the questions and comments that were made by several participants during the webcast. Additionally, if you have any questions, please send an email (info@smartstudy.biz) and we will respond to your questions as soon as possible.

20. *Is there an exact date in January when your study will be published?*
    We will be posting a timeline on the website for your reference. www.smartstudy.biz

21. *At least one of your conceptual alternatives should be an 800 kV DC link between mid-South Dakota and either Collins, Meadow Lake, or Sullivan. And potentially double circuit. This path would result in fewer thermal losses, as well as remove the impacts on the underlying networks in between.*
    All the alternatives that have been developed are conceptual and are based on the amount of imports and exports between the states that were calculated in order to meet appropriate state RPS requirements. The next step will be to model all the lines in the conceptual alternatives in a power flow model and to see how the alternatives respond to the additional wind generation that has been modeled in the case. The loading on these lines as seen in the models will give an indication on the feasibility of using an 800 kV HVDC link and at that point we will consider the use of DC transmission in the study.

22. *Will your results and conclusions address the need for reinforcements to the underlying network?*
    The goal of SMARTransmission study is to develop an EHV (345 kV and above) overlay that will essentially tap the concentrated areas of wind resources and deliver power to the major load centers reliably and economically. This study will evaluate the impacts and propose any reinforcements that will be required to the existing EHV system (345 kV and above) in order to move this power. The study will monitor lower voltage systems (100-230 kV) but will not propose any modifications to these systems due to the local nature of these lines.

23. *You should plan on showing how a resource in South Dakota (at .404 average capacity factor) plus thermal line losses, becomes an equivalent average capacity factor resource in, say, Illinois (where it would compare to a .325 resource) or Ohio (where it would compare to a .304 resource). Why are we building transmission and transporting power, if it makes more sense to build locally?*
    The base case scenario consists of developing wind based on state laws and desires. As an example, for Ohio the study considers that 50% of the states RPS requirement will be met by resources within the state. MI will meet 100% of its RPS requirements within the state. In Illinois, about 61% of the renewable requirement will be developed within the state. The study will also look at another scenario where in the wind that is injected within the state is based purely on the wind potential as published by NREL. By taking this approach, a more regional trend begins to emerge where the “best wind” is utilized to meet the renewable requirements of the states. In this scenario, the study looks at developing less than 20% within the state of Ohio. Phase II of this study includes an economic analysis that will provide information on the economic performance of the transmission developed for the two scenarios.