Comment ID	SAMA Scope Page #	Referenced Text	Commentary	Commentor	Type of Change	Theme	NERC Response
1	1	Purpose Section	Item 1 in the purpose is to develop a North American database. This is not a trivial task. NREL has a dataset that was used for the NARIS study that could be tapped into. Adding additional years to this data could be challenging in the time frame of this study.	Manitoba Hyrdo (David Jacobson)	Discussion Starter	Dataset Development	Although not a trivial task, a dataset is being developed for the analysis using LTRA, EIA, existing NREL datasets, and historical actual data provided by transmission entities. It is expected that the data set will be available for the analysis in time.
2	2	Cases and Scenarios Section	For cases and scenarios, will the team be asking for opinions from the regions on what the worst case scenarios might be to help focus the study effort?	Manitoba Hyrdo (David Jacobson)	Wording/Clarity	Cases and Scenarios	Yes, please provide your input on worst case scenarios to help focus the study effort. In addition, the SAMA will be reviewing worst case reliability periods from the 12-years of weather data and using the Hourly Energy Margin to identify challenging periods
3	7	Scenario Assumptions Section	For entities that have hydro, a hydro drought is being included (pg 7). Hydro droughts tend to be of a long duration (at least 6-12 months). An additional renewable drought could be overlaid on top. For example, overnight conditions (no solar) with a 2-3 day wide-spread wind drought. It would be nice to get some statistics on how wide-spread a wind drought might be (e.g., hundreds or thousands of km^2). There is a nice white paper from NERC "Probabilistic Planning for Tail Risks" that could be a reference for the ITCS. Not sure the timeline of the PAWG to provide some more details on tail risk.	Manitoba Hyrdo (David Jacobson)	Discussion Starter	Cases and Scenarios	Good points are made here. NERC will discuss with the study team and include in the analysis as appropriate. The Tail Risks paper was finalized and is heading to RSTC for approval in their March 2024 meeting. The hydro drought conditions will not follow the same weather years or hours as the wind drought conditions, as the time frames are seasonal for hydro, and daily for wind. As a result, we will assume that wind/solar droughts can occur during a hydro drought.
4	9	Energy Assessment Outcomes Section	Page 9 – In the approach to calculating prudent transmission additions, will there be a high level comparison against local generation? For example, if the concern is a renewable drought then how does additional transmission compare against a local "peaker" for multi-day energy or battery energy storage for multi-hour energy? If the cost is much less, then it could be "prudent".	Manitoba Hyrdo (David Jacobson)	Discussion Starter	Transfer Capability	It is true that in some instances it might be more economical to add more generation, however the purpose of the study is not to propose solutions but simply to recommend prudent additions to transfer capability.
5	1	Purpose Section	We need to make sure the actual study does not identify or propose any specific generation or transmission modifications/additions. The work that NERC does in its seasonal, annual and long-term assessments is fine as it relates to assessing reliability needs regarding generation and transmission. Obviously, NERC has been assigned by Congress the role of determining interregional transfer capabilities between planning regions, but that should not include recommendations for specific transmission/generation modifications/additions. Additionally: Cases developed for interregional transfer capability studies may have equivalenced models for portions of the transmission system. These equivalenced models could impact proposed recommendations for specific generation or transmission modifications/additions. Furthermore, there are more social, political, environmental, and economic factors that are involved in choosing generation and transmission modifications that cannot be modeled in a transmission base case model. Based on these issues, there is no one outside of the utility owner who is better suited to make recommendations for transmission and/or generation modifications and additions. The proposed solutions to improve ITC should be left to the owners.	Georgia System Operations Corp (Greg Ford)	Discussion Starter	Scoping	Agreed. Will look at which pairs will increase capability but not how they'll do it.
6	1	Purpose Section #3	If the study scope involves identifying which pairs of regions should be prioritized for increased interregional transfer capability, does this mean that there will be some requirement for these prioritized regions to make transmission or generation improvements? If so, at who's expense?	Georgia System Operations Corp (Greg Ford)	Discussion Starter	Scoping	Will not say at who's expense. We will look at prudent additions to ITC, but not recommend projects.
7	2	Cases and Scenarios Section- Scenario	The first time an acronym is used, it should be spelled out with the acronym in parentheses.	Georgia System Operations Corp (Greg Ford)	Wording/Clarity	Grammar/Formatting	agreed, the document will be thoroughly reviewed and will be updated accordingly
8	3	The energy analysis will be reflected on the same resource mix in the Part I transfer analysis, but this outcome under state resource portfolio	Check the clarity of this sentence.	Georgia System Operations Corp (Greg Ford)	Wording/Clarity	Grammar/Formatting	Re-word the sentence to say 'The energy analysis will be based on the same resource mix in the Part I transfer analysis, but this outcome may underestimate resource portfolio and capacities'.
9	3	However, the 10-year out forecast is highly uncertain and the NERC LTRA is likely not reflective what utilities, grid operators, and state law are currently planning to.	reflective of	Georgia System Operations Corp (Greg Ford)	Wording/Clarity	Grammar/Formatting	the "of" will be added
10	7	Transfer Capability:. Transfer capability calculations from Part-I of the study will be used as an input to determine prudent additions	Is this statement referring to prudent additions to transfer capability based on re-dispatch, operating guides, or transmission and generation projects?	Georgia System Operations Corp (Greg Ford)	Discussion Starter	Transfer Capability	NERC will be using Part 1 for a starting point for Source/Sinks.
11	7	Available Capacity = Thermal Capacity (UCAP) + Hydro + Wind ELCC + Solar ELCC + Storage ELCC + Firm Net Imports	The first time an acronym is used, it should be spelled out with the acronym in parentheses.	Georgia System Operations Corp (Greg Ford)	Wording/Clarity	Grammar/Formatting	agreed, the document will be thoroughly reviewed and will be updated accordingly
12	10	Increase transfer capability until energy deficit is resolved, by prioritizing neighboring regions with higher surplus available capacity	Based on the bullets in Step 2, it appears that the Part II study scope includes recommending which region pairs should make improvements to increase ITC (based on an energy surplus in one region and an energy deficit in the other), not recommending which improvements are to be made. Is the intent of the study to recommend that prioritized regions determine their own necessary improvements to increase ITC, or is the intent of the study to propose recommended transmission and generation improvements to the prioritized regions?	Georgia System Operations Corp (Greg Ford)	Discussion Starter	Transfer Capability	The study will recommend the magnitude of ITC additions between pairs of neighboring transmission planning regions. How the ITC additions are accomplished will be up to each transmission planning region.
13	1	Purpose Section	Items 1-3 of the Study Scope purpose are appropriate. The re-dispatching of planning cases, as outlined in item 4, should be done only using re-dispatch scenarios that are feasible under real time conditions.	DOE (Adria Brooks)	Discussion Starter	Scoping	Not necessarily, as these cases will be future looking and the dispatch pattern could change from the current real time, but a reasonable dispatch will be considered with the contraints that bound the dispatched resources
14	2	If time permits, these cases will be adapted to develop alternative extreme reliability events, as shown in Table 1.	Alternative extreme reliability events should be developed and standardized. These should be prioritized and not only done as time permits. In addition to the extreme events explicitly listed – cold snap, heat wave, renewable drought – a combination of these extreme events should also be considered. National laboratory power system analysis has found the most severe reliability events occur when two different extremes, such as a heat wave and hydropower drought, are occurring simultaneously.	DOE (Adria Brooks)	Discussion Starter	extreme events	Agreed, updated the slide to include this. We are trying to model correlated outages.

Comment ID	SAMA Scope Page #	Referenced Text	Commentary	Commentor	Type of Change	Theme	NERC Response
15	3	The NERC LTRA generator and load data will be adjusted so that the study topology will align uniformly with the Part 1 ITCS Transfer Analysis. For example, the SPP NERC LTRA region will be divided into SPP-N and SPP-S so that the energy analysis can be conducted with the same regional breakdown as Part 1. Other examples include PJM-E, PJM-W, PJM-S and MISO-E, MISO-W, MISO-C, MISO-S.	Strongly support breaking larger planning regions into subregions. These regions are geographically vast and different portions will experience stress events, weather or otherwise, differently. Smaller, geographic subregions also better account for congestion on the existing transmission system.	DOE (Adria Brooks)	Discussion Starter	Cases and Scenarios	Thank you
16	3	Reconciliation with Part 1: Ideally the cases would be consistent. There are two options to handle potential discrepancies: 1. The NERC LTRA will be reflected for the energy assessment only, knowing it won't match exactly the 10-year outlook in the Part I transfer analysis. 2. The energy analysis will be reflected on the same resource mix in the Part I transfer analysis, but this outcome under state resource portfolio	Support the first option, which is likely to be a better estimate of the future generation portfolio than base case assumptions used in Part I analysis. There is no concern with using different generation assumptions--as stated in these draft methodology documents--in Part I and Part II of the ITCS. It should be noted in the final report that the LTRA resources are still likely to be an underestimate of resource portfolio changes. NERC should work in future standards or modeling efforts to encourage that base cases more accurately reflect generation resource changes. Industry working groups and task forces should be leveraged to support developing and implementing robust methods to better estimate portfolio changes as this effort is likely to require ongoing and cross-industry input to determine methods to make these shifts.	DOE (Adria Brooks)	Discussion Starter	Cases and Scenarios	Agreed
17	3	Additional Cases: Examples of these additional cases may include the following: • Utility and RTO Resource Plans, which leverages the most recent long-term IRP or system outlook developed by the regional grid operator, and includes uncertain additions above and beyond named projects. • Accelerated policy and decarbonization, which assumes an increase in renewable deployment, plant retirements, and end-use electrification. • Slower transition, which assumes bottlenecks arise from transmission interconnection and reliability concerns that slow the pace of new resource development.	Strongly support the inclusion of additional cases that include the most up-to-date industry plans and one with accelerated policy and decarbonization but does not view a slower transition case as useful. Analysis of historical generation capacity installations show that growth in demand and clean energy generation have consistently outpaced either industry plans or forecasts. A "utility and RTO resource plans" case is likely to provide a lower bound to future growth given these trends; a "slower transition" would provide an unrealistically low bound.	DOE (Adria Brooks)	Discussion Starter	Cases and Scenarios	Time permitting, NERC will evaluate sensitivities on the resource mix in Part 2.
18	4	Data will be compiled to create a multi-year, time-synchronized dataset of key properties that determine resource availability and energy margins by combining load, wind, solar, hydro, and weather dependent outages of thermal resources.	Strongly support the creation of these datasets. Research performed by and for the Department of Energy has found these datasets are imperative to perform power system analyses. The national laboratories have already created extensive datasets that could be leveraged to save time.	DOE (Adria Brooks)	Discussion Starter	Dataset Development	Thank you. We will be leveraging DOE funded datasets (via NREL WindToolkit, NSRDB, and ReEDS models) to help support the analysis where available.
19	4	Data Sources for Scenarios: There are two options to develop this dataset: 1. Utilize historical measured data for load, wind, and solar from recent years and scale it appropriately to represent future conditions; and/or, 2. Leverage synthetic datasets using historical weather observations (temperature, wind speed, solar irradiance, etc.) and estimate load and resource availability.	Support prioritizing option 2. This option leverages several U.S. Government-funded datasets, which have adjusted historical data for many forecasted climatic changes and includes more extreme events than are available in the recent historical record. The DOE datasets listed in Table 2 for option 2 have been well veted and are already used by industry for planning. NREL data receives review from a team of experts before its release, for example: a. Tools like the National Solar Radiation Database (NSRDB) and Wind Toolkit (WTK) are validated in publications (NSRDB, WTK). b. The characterization of zonal transmission interface limits used in NREL capacity expansion modeling is described in an available pre-publication and can inform its applicability to NERC's scope of work. Additionally, NREL data is integrated with in-house characterization of important drivers of current and future weather-dependent generation, for example: c. Publications like the Annual Technology Baseline characterize future power generation technology cost and performance trajectories. Historical data reflects legacy technology and might not be as relevant going forward (I find the LBNL publications – for example, WTMR for wind – are good at giving a sense how much has changed!) d. NREL's geospatial data science team continues to update U.S. land-use and resource potential screens for compatibility with power generation, including recent publications on wind technology developments and siting ordinances. e. The open-source Renewable Energy Potential (reV) model we use to translate from wind and solar resource to generation data is recognized as a best-in-class tool for its temporal and spatial detail. reV relies on the widely used and publicly available System Advisor Model to translate resource data to power generation profiles. Future extensions are planned and will be more readily compatible with NREL data, for example: f. Release an update to the Wind Toolkit (as the Wind Toolkit Long-Term Ensemble Dataset), to be available here and here and cover the weather years 2018-2020 at similar resolution (5min temporal, 2km spatial over CONUS, Alaska, and Hawaii) to the existing Wind Toolkit (2007-2013). g. Develop a forward-looking climate-informed dataset (the Sup3rCC project) to project power generation with integration in above tools like reV. This work is informed by publications showing effects of future climate and weather trajectories can be substantial for	DOE (Adria Brooks)	Discussion Starter	Dataset Development	Thank you. The goal to use both leveraging the pros with each method and to clearly identify when each method is used.
20	4 and 5	A list of potential weather events that can be evaluated in the Part 2 analysis include the following: Winter Storm Elliott, 2022; Winter Storm Uri, 2021; Polar Vortex, 2014; Intense Cold Wave, 2011; Western Wide Area Heat Domes, 2020 and 2021; Western and Midwest Heat Waves, 2023; SPP Wind Drought, of 2023; Additional cases based on review of historical meteorological and future climate trend data; Additional cases may be considered, including cyber-attacks, wildfire risks, and extended planned outages, details TBD	This list is comprehensive and includes the types of events that are predicted to occur with more regularity in the future given climatic changes.	DOE (Adria Brooks)	Wording/Clarity	extreme events	Thank you, agreed

Comment ID	SAMA Scope Page #	Referenced Text	Commentary	Commentor	Type of Change	Theme	NERC Response
21	5 and 6	Study Topology	As stated above, Dr. Brooks strongly supports breaking larger planning regions into subregions. These regions are geographically vast and different portions will experience stress events, weather or otherwise, differently. Smaller, geographic subregions also better account for congestion on the existing transmission system.	DOE (Adria Brooks)	Discussion Starter	Transfer Capability	Thank you, agreed
22	6	Input and Assumptions: Load: 8760 hourly loads across multiple weather years that change to reflect seasonality, weather impacts, day of week, etc. The ITCS will leverage either historical loads from recent event (EIA-930 and/or FERC 714) or synthetic load data from the NREL Standard Scenario dataset (see Table 2 for discussion of data options). Both sources will be scaled to meet forecasted load growth developed by the regions in their FERC 714 filings and aligned to the NERC LTRA.	Support the use of synthetic load data from the NREL Standard Scenario dataset as outlined in option 2 (see above discussion on the use of option 2 Synthetic Weather Data). As mentioned above, all datasets are reviewed by subject matter experts and are constantly updated. The 2023 Standard Scenarios update is recently available at https://www.nrel.gov/docs/fy24osti/87724.pdf.	DOE (Adria Brooks)	Discussion Starter	Dataset Development	Thank you. The goal to use both leveraging the pros with each method
23	6	Input and Assumptions: Wind and Solar: 8760 hourly wind generation profiles across multiple weather years, aggregated to the NERC Source/Sink topology. The underlying profile will be developed based on locations of specific wind and solar plants, but the wind generation in the ACPF will be dispatched uniformly across the Source/Sink topology. This can be developed using either historical wind/solar generation measurements or based on historical meteorological data (see Table 2).	Support the use of synthetic load data from the NREL Standard Scenario dataset as outlined in option 2 (see above discussion on the use of option 2 Synthetic Weather Data).	DOE (Adria Brooks)	Discussion Starter	Dataset Development	Thank you. The goal to use both leveraging the pros with each method
24	7	Input and Assumptions: Weather Dependent Outages and Fuel Supply: An estimate of daily generator forced outages will be developed to incorporate weather dependencies and fuel supply. The analysis will not consider individual unit outages, but will develop an estimate of total capacity on outage by class of resource within each NERC Source and Sink. The outages will be deterministic, either leveraging NERC GADS data during recent events and/or based on assumed temperature-outage rate relationships developed by NREL.	Support the use of correlated outages for all generator types, matching the historical performance of each generator type. Historical analysis has shown that geographically similar generators experience correlated, and not independent, outages. The NREL analysis based on historic NERC data has been peer reviewed and is already used by industry.	DOE (Adria Brooks)	Discussion Starter	Dataset Development	Agreed, We will be leveraging time-synchronized NERC GADS data, by region, by fuel type to ensure that correlated generator outages are accurately reflected.
25	7	Seasonal Resereve Margins	Support calculating seasonal reserve margins using P10 demand figures to beter capture extreme cases when reserve margins are at their lowest.	DOE (Adria Brooks)	Discussion Starter	extreme events	Noted, but emphasis will be on hourly energy margin by weather year, rather than
26	8	Part 1: If time permits, the data and metrics developed in this analysis can be used to select new scenarios to reflect specific extreme reliability conditions to redispatch the MOD-32 ACPF Base Cases. Care should be taken to select the appropriate dispatch conditions and the right number of dispatch conditions to select.	Support updating industry base cases to reflect more relevant extreme events. The extreme events selected and analysis including them will be a novel part of this ITCS effort and could be standardized. Even if time does not permit this to be done as part of this study, this is a recommendation that should be included in the ITCS report.	DOE (Adria Brooks)	Discussion Starter	Cases and Scenarios	We are not going to do this currently, but future NERC assessments may address this. NERC can ask for certain cases to developed.
27	9	To determine system conditions that may require additional transfer capability, various scenarios will be assessed representing extreme load conditions and minimal internal generation within a particular area, as described in the previous sections. Following extreme scenarios will be assessed for Part II: Extreme winter; Extreme summer; Low renewables	The list provided here appears slightly different than the slide of extreme event scenarios considered in Table 1 on page 2: cold snap, heat wave, and renewables drought. Encourage consistency across the final list of extreme events considered for Part II Energy Assessment.	DOE (Adria Brooks)	Discussion Starter	extreme events	Thank you, we will ensure the consitency as pointed out. The actual selection of system conditions will not be determined until the hourly energy margins are calculated for the entire 12-years of weather-year data. Once this task is complete the team will review the data to determine challenging time periods based on the system resource mix, load, and weather conditions.
28	N/A	General Commentary	Overall comment - this document is more like a conceptual paper than a scope document. It should be more definitive on how the study will be performed and on what timeline. The way it is written leaves the reader wondering exactly what is going to be done as part of this study. Recommend that this document be refined to better define the study process and not leave as open-ended as it is.	Southern Company (Daryl McGee)	Discussion Starter	Grammar/Formatting	The document was intended to define a high-level scope. Will consider adding more details where more clarity would be beneficial.
29	1	Typically these cases include “Summer Peak,” and “Winter Peak.”	The two scope documents should complement each other, but this sounds like they were developed in isolation. Recommend that when referring to Part 1, the specific details should match. For this example, state what specific cases will be used.	Southern Company (Daryl McGee)	Discussion Starter	scoping	Thank you, review and revision will be completed to ensure the harmony between the two scopes
30	1	Identify system conditions under which system will experience energy shortfalls,	Does this mean shortfalls in serving load or load + large transfers to other regions?	Southern Company (Daryl McGee)	Wording/Clarity	Transfer Capability	NERC will evaluate each region without any transfers first, then will evaluate each region with transfer capability to determine where transferability is needed.
31	1	Evaluate which planning area(s) are prudent to add increased transfer capability.	is this referring to sub-regional areas and not the Order 1000 planning regions?	Southern Company (Daryl McGee)	Wording/Clarity	Transfer Capability	FERC 1000 regions were breaked into subregions.
32	1	Identify periods of tight supply conditions and potential energy shortfalls that can be used to quantify prudent additions of ITC,	if there are identified energy shortfalls, is it intended that a full replacement of the shortfall will come from other regions? Another recommendation that comes from this evaluation should also be to increase energy resources within the area with the shortfall.	Southern Company (Daryl McGee)	Wording/Clarity	Transfer Capability	Even though in some instances it might be possible to resolve energy deficiency through local resources, the study is purely focused on solving the energy deficiency via interregional transfer capability. Adding local resources may not resolve deficiency in some instances where an extreme weather event impacting a certain type of local resources, may render the same type of additional local resources unable to deliver energy under similar conditions.
33	1	Comparisons of interregional transfer capability against local generation additions for reliability.	How will risk be determined for ITC vs local generation?	Southern Company (Daryl McGee)	Wording/Clarity	Transfer Capability	Will be looking at transmission only, per the request of Congress.
34	2	Dataset only. The SAMA team will develop custom spreadsheet tools, augmented by python and other coding tools where necessary.	Will this information be shared with and reviewed by the Advisory Group	Southern Company (Daryl McGee)	Wording/Clarity	Dataset Development	No, we received data that are confidential and martket sensitive
35	2	The ITCS will evaluate several cases, scenarios, dispatch conditions, and sensitivities. A definition of each of these terms is provided below, followed by a proposal for this analysis.	The term "proposal" should be changed to "scope". The term proposal makes it sound like we aren't sure that this is how the study will be performed, as opposed to this document specifically stating how the study will be performed.	Southern Company (Daryl McGee)	Wording/Clarity	Cases and Scenarios	agreed
36	2	To quantify existing transfer capability in Part 1, the NERC ITCS will use the typical MOD-32 Base Cases,	MOD-032	Southern Company (Daryl McGee)	Wording/Clarity	Transfer Capability	The sentence will be updated to read" Interconnection-wide cases that were built per MOD-032 standard"

Comment ID	SAMA Scope Page #	Referenced Text	Commentary	Commentor	Type of Change	Theme	NERC Response
37	2	Table 1- "other"	are there specific examples of what would be included as "other" or is this just a placeholder for good ideas that might come later?	Southern Company (Daryl McGee)	Wording/Clarity	Grammar/Formatting	Correct, this is a place holder
38	3	Othe examples include PJM-E, PJM-W, PJM-S and MISO-E, MISO-W, MISO-C, MISO-S.	typo	Southern Company (Daryl McGee)	Wording/Clarity	Grammar/Formatting	Thank you, correction will be made
39	3	However, the 10-year out forecast is highly uncertain and the NERC LTRA is likely not reflective what utilities, grid operators, and state law are currently planning to.	change to "reflective of what"	Southern Company (Daryl McGee)	Wording/Clarity	Grammar/Formatting	Thank you, the "of" will be added
40	3	However, the 10-year out forecast is highly uncertain and the NERC LTRA is likely not reflective what utilities, grid operators, and state law are currently planning to.	Change from "state law" to "states"	Southern Company (Daryl McGee)	Wording/Clarity	Grammar/Formatting	Thank you, change will be made
41	3	To overcome this uncertainty, additional cases may be performed in the Part 2 Energy Assessment. Examples of these additional cases may include the following:	Change from "performed in" to "developed for"	Southern Company (Daryl McGee)	Wording/Clarity	Grammar/Formatting	Thank you, change will be made
42	3	Accelerated policy and decarbonization, which assumes an increase in renewable deployment, plant retirements, and end-use electrification,	change "," to "."	Southern Company (Daryl McGee)	Wording/Clarity	Grammar/Formatting	Thank you, change will be made
43	4	Table 2 shows the differences for each approach is provided below. Note that one or both options can be leveraged for this study.	This sentence needs to be rewritten.	Southern Company (Daryl McGee)	Wording/Clarity	Grammar/Formatting	Thank you, it should read "Table 2 compares the benefits and limitations of the two approaches. Note that one or both approaches can be used for this study"
44	5	Canadian regions will also be considered,	Considered in what way? This document lacks the specificity to understand exactly how the study will be performed.	Southern Company (Daryl McGee)	Wording/Clarity	Canadian Regions/Regulators	updated map has Canadian regions
45	5	In several instances FERC Order 1000 regions have been broken down into sub-regions for calculating the inter-regional transfer capability.	should be "intra" and not "inter"	Southern Company (Daryl McGee)	Wording/Clarity	Grammar/Formatting	Thank you, change will be made
47	7	NSRDB	need to spell out what this is	Southern Company (Daryl McGee)	Wording/Clarity	Grammar/Formatting	agreed, we will spell it out
47	7	This will allow the analysis to consider normal, drought, a high hydro conditions.	change to "and"	Southern Company (Daryl McGee)	Wording/Clarity	Grammar/Formatting	Thank you, change will be made
48	7	The analysis will not consider individual unit outages, but will develop an estimate of total capacity on outage by class of resource within each NERC Source and Sink.	Please include details on how these estimates will be developed. Again, this scope reads more like a concept paper leaving many key aspects as generalized statements and options as opposed to giving details on how the study will be performed.	Southern Company (Daryl McGee)	Wording/Clarity	Transfer Capability	Agreed, first SAMA scope was mostly methods. A more detailed version will be provided which shows how GADS data is being used here.
49	7	Transfer capability calculations from Part-I of the study will be used as an input to determine prudent additions.	consistency - change to "Part 1"	Southern Company (Daryl McGee)	Wording/Clarity	Grammar/Formatting	Thank you, change will be made
50	7	Peak demand = Seasonal P50 Peak Demand – Demand Side Management	where will the values used for DSM come from?	Southern Company (Daryl McGee)	Wording/Clarity	Metrics	DSM will be modeled as a load modifier, similar to how it is handeled in the NERC LTRA load forecast
51	8	– (Load + 6% Reserves)	Not sure where 6% comes from. Is this an industry standard value for calculating HEM?	Southern Company (Daryl McGee)	Wording/Clarity	Metrics	6% comes from other national models regarding operating reserves and to reflect unlikely transfers during tight margin conditions. This is subject to discussion and easily updated.
52	8	Storage can be dispatch heuristically to arbitrage hourly net load within a day (charging during offpeak hours and discharging during on-peak hours, using net load).	typo - change to "dispatched"	Southern Company (Daryl McGee)	Wording/Clarity	Grammar/Formatting	Thank you, change will be made
53	8	Operating Reserves (spin and regulation) are set at 6% of the load, but can be adjusted as needed	Need explanation on where 6% comes from.	Southern Company (Daryl McGee)	Wording/Clarity	Metrics	6% comes from other national models regarding operating reserves. This is subject to discussion.
54	8	Care should be taken to select the appropriate dispatch conditions and the right number of dispatch conditions to select.	Who will be selecting and what criteria will be used to determine?	Southern Company (Daryl McGee)	Wording/Clarity	Transfer Capability	Will be removed from scoping document.
55	10	Increase transfer capability until energy deficit is resolved, by prioritizing neighboring regions with higher surplus available capacity,	We need to discuss using expected surplus in regions as the reason to declare prudent additions to ITC. If a prudent addition to a path is recommended (driven by anticipated surplus capacity), where is the guarantee that the surplus will continue into the future and that the expenditures for increasing ITC are prudent?	Southern Company (Daryl McGee)	Discussion Starter	Transfer Capability	Will use regions what they're planning for 10-year out case.
56	11	Next Steps	Need to add expected timeline for addressing each of these steps.	Southern Company (Daryl McGee)	Wording/Clarity	Grammar/Formatting	Thanks. Will add more clarity on timelines.
57	1	Identify system conditions under which system will experience energy shortfalls,	Only conditions where they will happen or could? Realizing its a deterministic analysis, but would the idea be to say 'under this load, this thermal outage and these renewables, based on current transfer capacity, region x will have energy shortfall'? Given the future system won't behave exactly like the past, even studying past events might need some amount of sensitvity - e.g., for Elliott or Uri, what if thermal outages were a little better/worse, what if load was higher, or load forecasts were better/worse, etc.?	EPRI (Aidan Tuohy)	Discussion Starter	Transfer Capability	agreed, "will" changed to "could"
58	1	Identify periods of tight supply conditions and potential energy shortfalls that can be used to quantify prudent additions of ITC,	Might be inherent here but as well as identifying tight conditions in one area, do you need to identify concurrent available supply in neighboring or neighbor's neighbor regions?	EPRI (Aidan Tuohy)	Wording/Clarity	Transfer Capability	Yes, we will look to other regions for surplus.
59	1	This scope of work will specifically not address the following items, which should be addressed in subsequent modeling and planning efforts.	Another topic here that may be out of scope for this study but worth thinking about in long term is that the addition of transfer capacity itself will alter the resource mix in both regions given it will impact the economics. So if a particular line is deemed prudent based on current mix, it might make existing generation more or less economic and result in changes to generator additions. If you can rely on other regions for capacity/energy, you might be able to lower your own PRM. If you aren't allowed to do that and only use during resilience events, the economics of the transmission should account for that and makes it harder to justify transmission	EPRI (Aidan Tuohy)	Discussion Starter	scoping	agreed, the scope was developed for reliability only and the economics as[ects were not considered
60	2	If time permits, these cases will be adapted to develop alternative extreme reliability events, as shown in Table 1.	Some of these will be developed as part of the Order 896 work as well, so should coordinate with that effort (which is longer term so may not have data in time for the study, but might have a process)	EPRI (Aidan Tuohy)	Discussion Starter	Cases and Scenarios	agreed

Comment ID	SAMA Scope Page #	Referenced Text	Commentary	Commentor	Type of Change	Theme	NERC Response
61	4	Table 2- Option 2, Data Source	This also aligns with the requirements of TPL-008. EPRI are developing the coordination needed to develop synthetic data sets that have the necessary properties to apply to power system analsyis for future system.	EPRI (Aidan Tuohy)	Wording/Clarity	Dataset Development	agreed
62	4	A list of potential weather events that can be evaluated in the Part 2 analysis include the following:	Will each of these be analyzed for full system or just portions that are impacted?	EPRI (Aidan Tuohy)	Wording/Clarity	extreme events	Full system. The goal is to view how these events affect different parts of the full system.
63	6	Both sources will be scaled to meet forecasted load growth developed by the regions in their FERC 714 filings and aligned to the NERC LTRA.	For the 10 year out look, electrification could result in changing load shapes - is that out of scope at this point? There may be data available from labs, EPRI, etc., on changes	EPRI (Aidan Tuohy)	scoping	Dataset Development	No, not out of scope at this point. We are able to look at different levels of electrification if needed, but only using the 2007-2013 weather years
64	7	Weather Dependent Outages and Fuel Supply:	Will there be a deterministic threshold for generator outages? How does this align with NERC GADs data? GADs is an event specific database, how does this apply generally?	EPRI (Aidan Tuohy)	Discussion Starter	extreme events	Using NERC GADs data based on regional, daily outage rates by fuel type. Scaling accordingly when resource mix changes.
65	10	Include transfer capability, increasing hourly energy margin in one region and decreasing margin in neighboring region due to transfer, • Increase transfer capability until energy deficit is resolved, by prioritizing neighboring regions with higher surplus available capacity, • Apply metrics to each prudent addition and determine final recommendations for prudent additions.	Is there a way to prioritize how to step through each region and adjust? Seems like its based on size of shortfall, or maybe % of load? Seems like a few options might be available here: - Start by trying to minimize number of regions with shortfalls - Focus on those where immediate neighbors can help first, then look at neighhgbor's neighbor - Look at distance or some other metrics to reflect cost of new transmission The order of how support is provided will be important - if one region has excess and neighbors to both sides shortfalls, how to spread that out? WECC MAVRIC tool covers this to an extent in how they do RA assessment and might be worth looking at	EPRI (Aidan Tuohy)	Discussion Starter	Transfer Capability	The proposal is to develop a shadow price method to prioritize which regions should increase ITC, below are the steps on how to prioritize which regions to use for ITC: (1)Assume a region uses its own resources first (reliability rather than economic dispatch) (2)Prioritize nearby regions for support (neighboring Source/Sink) (3) Prioritize Source regions with more relative surplus
66	3	Cases and Scenarios Section	I have a question about the language in the SAMA Scope Part II document. Is something missing from option 2 within the "Reconciliation with Part 1" section on page 3 (copied below). It doesn't seem like a complete thought to me.	DOE (Adria Brooks)	Wording/Clarity	Grammar/Formatting	NERC adjusted the language and provided clarification.
67	2	Cases and Scenarios Section	Should the energy assessment (Table 1) also consider a renewable energy 'boom' where conventional resources are displaced by increased renewables? That may shift the transfer capability between the areas.	FirstEnergy (Lawrence Hozempa)	Discussion Starter	Transfer Capability	Agree, it will change TC. In this analysis, we're not trying to quantify TC.
68	3	Cases and Scenarios Section	For the part II, if you are going to add/retire generation and modify load forecast at the zonal/regional level, how would these assumptions translate at the nodal level? At the end of the reliability is measured at the nodal level. How would regional and local issues be monitored as we try to evaluate interregional capabilities?	American Electric Power (Hassan Hayat)	Discussion Starter	Transfer Capability	We are not going to evaluate the energy assessment on a nodal level.
69	1	Purpose Section	Could the wording of the prioritization part/step be refined? It sounds like you will be picking which energy deficiencies are more important to resolve. But instead, you are picking the best solution to solve each energy deficit.	Eversource (Mark Tremblay)	Wording/Clarity	Grammar/Formatting	Agreed, language to be adjusted.
70	4	Scenario Assumptions Section	Could you clarify which "subsequent studies" are being referred to on Page# 4 (above Table 2)?	Eversource (Mark Tremblay)	Wording/Clarity	Grammar/Formatting	example, like addressing the transfer with the Canadian provinces
71	N/A	N/A	Could there be an opportunity for Transmission Owner or Transmission Provider review. We believe that, at a minimum, it would be beneficial for TO's to provide input on the accelerated policy and decarbonization cases.	Eversource (Mark Tremblay)	Discussion Starter	stakeholder engagement	Will revise scoping document.
72	7	Metrics and Screening Criteria Section	The document indicates that that the seasonal reserve margin will use the region's own ELCCs for wind, solar, and hydro. Do all regions have such established ELCCs and how will NERC account for changing ELCCs in the future (e.g. as more solar is added, its ELCC is reduced)?	Eversource (Mark Tremblay)	Wording/Clarity	Metrics	LTRA has wind and solar counted as capacity contribution if ELCC isn't used.