# MSWG EXPANSION TCC AWARD PROCESS
## Task 1: Modified Award Process

Prepared for NYISO Market Structure Working Group

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November 16, 2001

(revised December 6, 2001)

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ECONOMICS
FINANCE

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## MSWG AWARD PROCESS                                    Objectives

Last year, the MSWG proposed a process for awarding TCCs for transmission expansions. This was designed to meet a number of objectives:

- Accommodate some parties' aversion to the risk of LT TCC obligations.
- Accommodate other parties' preference for LT TCCs.
- Award expansion TCCs to investors in an expansion only if they are made possible by the expansion.
    - Make existing capacity available to bidders in LT TCC auctions, prior to making expansion awards.
    - Avoid awarding expansion TCCs that would have been feasible prior to the expansion.
    - Avoid awarding expansion TCCs to one party that are made possible by another party's expansion.

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## MSWG AWARD PROCESS <span style="float:right">Objectives</span>

- Maintain the post-expansion feasibility of all previously awarded TCCs, including grandfathered TCCs and TCCs sold in auctions.

- Reward investors appropriately for the value of their transmission upgrades.

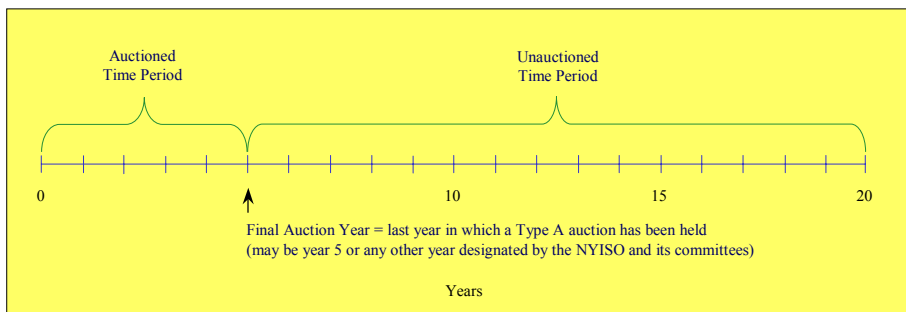## MSWG AWARD PROCESS <span style="float:right">Evaluation</span>

LECG (Harvey and Pope) and ESCA were engaged to evaluate the proposed MSWG expansion TCC award process.

- Task 1:  Model the proposed award process, identify ambiguities, and propose additional details to complete the specification.

- Task 2:  Test the modified award process under a variety of scenarios and propose additional modifications, if necessary.

- Task 3:  Consider the award of incremental rights as auction revenue rights.

- Task 4:  Consider whether parties that expand the transmission system could be allowed to request TCC option awards, as an alternative to TCC obligations.

## MSWG AWARD PROCESS — Ambiguities Identified

A number of ambiguities and other issues have been identified during the Task 1 evaluation. Many of these have been previously discussed by the MSWG.
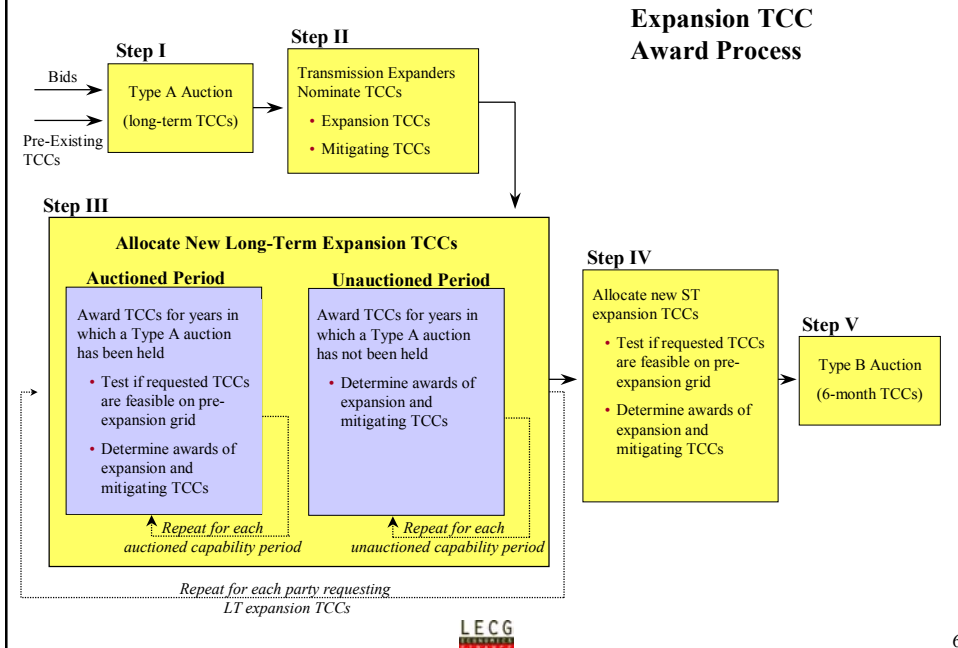
- The ambiguities and issues, alternative resolutions considered, and recommended resolutions are discussed in detail in a draft memo, "TCC Awards for Transmission Expansion: Identification of Unresolved Issues in the Proposed MSWG Award Process," distributed to the MSWG.

- Task 1 is virtually complete; the Task 2 scenario analysis has been started.

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Award Processes Before and After the Final Auction Year
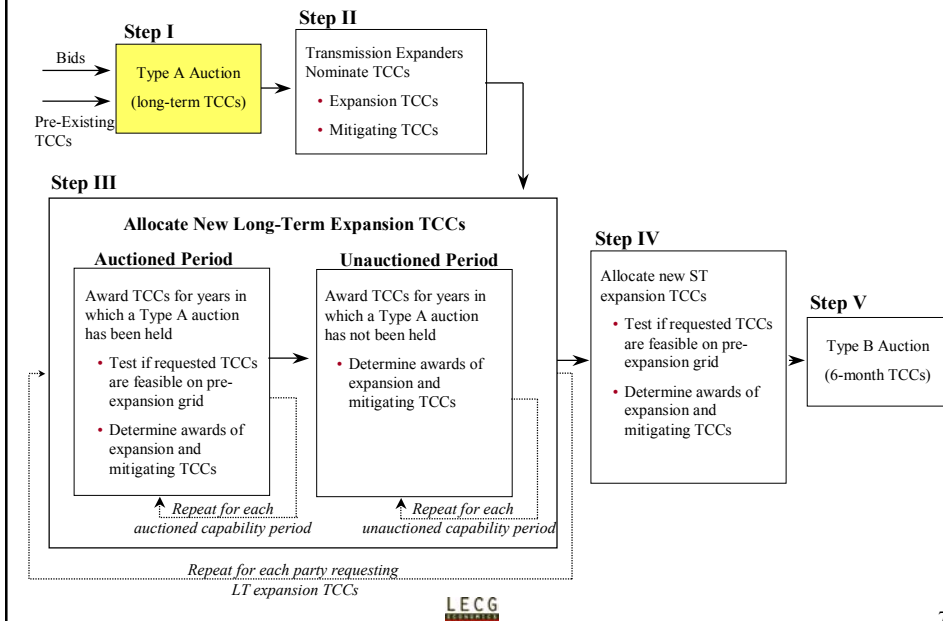


Auctioned Time Period — Unauctioned Time Period

0    10    15    20

Final Auction Year = last year in which a Type A auction has been held
(may be year 5 or any other year designated by the NYISO and its committees)

Years

## REVISED AWARD PROCESS — Overview

**Expansion TCC Award Process**

**Step I**
Bids →
Pre-Existing TCCs →
Type A Auction
(long-term TCCs)

**Step II**
Transmission Expanders Nominate TCCs
• Expansion TCCs
• Mitigating TCCs

**Step III**
Allocate New Long-Term Expansion TCCs

**Auctioned Period**
Award TCCs for years in which a Type A auction has been held
• Test if requested TCCs are feasible on pre-expansion grid
• Determine awards of expansion and mitigating TCCs

*Repeat for each auctioned capability period*

**Unauctioned Period**
Award TCCs for years in which a Type A auction has not been held
• Determine awards of expansion and mitigating TCCs

*Repeat for each unauctioned capability period*

*Repeat for each party requesting LT expansion TCCs*

**Step IV**
Allocate new ST expansion TCCs
• Test if requested TCCs are feasible on pre-expansion grid
• Determine awards of expansion and mitigating TCCs

**Step V**
Type B Auction
(6-month TCCs)

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## Expansion TCC Award Process

**Step I**
Bids →
Pre-Existing TCCs →
Type A Auction
(long-term TCCs)

**Step II**
Transmission Expanders Nominate TCCs
• Expansion TCCs
• Mitigating TCCs

**Step III**
Allocate New Long-Term Expansion TCCs

**Auctioned Period**
Award TCCs for years in which a Type A auction has been held
• Test if requested TCCs are feasible on pre-expansion grid
• Determine awards of expansion and mitigating TCCs

*Repeat for each auctioned capability period*

**Unauctioned Period**
Award TCCs for years in which a Type A auction has not been held
• Determine awards of expansion and mitigating TCCs

*Repeat for each unauctioned capability period*

*Repeat for each party requesting LT expansion TCCs*

**Step IV**
Allocate new ST expansion TCCs
• Test if requested TCCs are feasible on pre-expansion grid
• Determine awards of expansion and mitigating TCCs

**Step V**
Type B Auction
(6-month TCCs)

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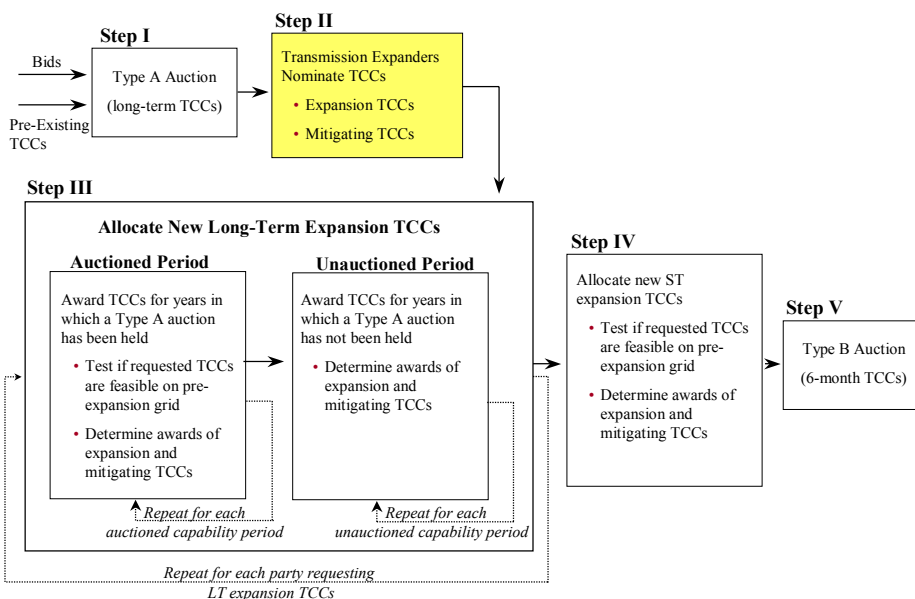
## STEP I          Hold Type A Auction

Prior to determining expansion TCC awards, the NYISO will hold a Type A auction of TCCs for the existing grid.

- Auction will offer LT TCCs. The maximum term of the TCCs ("final auction year") offered will be determined by the NYISO and its committees.

- Grid model will only include grid improvements that were previously awarded LT TCCs. It will not include grid improvements previously awarded ST TCCs.

- TCC reservations will include unexpired TCCs previously sold in auctions, grandfathered TCCs, and previously awarded LT expansion TCCs ("pre-existing TCCs").

- Expansion award process assumes that the Type A auction will sell 100% of the grid through the final auction year.

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### Expansion TCC Award Process

**Step I** — Type A Auction (long-term TCCs)
- Bids
- Pre-Existing TCCs

**Step II** — Transmission Expanders Nominate TCCs
- Expansion TCCs
- Mitigating TCCs

**Step III** — Allocate New Long-Term Expansion TCCs

**Auctioned Period**
Award TCCs for years in which a Type A auction has been held
- Test if requested TCCs are feasible on pre-expansion grid
- Determine awards of expansion and mitigating TCCs

*Repeat for each auctioned capability period*

**Unauctioned Period**
Award TCCs for years in which a Type A auction has not been held
- Determine awards of expansion and mitigating TCCs

*Repeat for each unauctioned capability period*

*Repeat for each party requesting LT expansion TCCs*

**Step IV** — Allocate new ST expansion TCCs
- Test if requested TCCs are feasible on pre-expansion grid
- Determine awards of expansion and mitigating TCCs

**Step V** — Type B Auction (6-month TCCs)

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The expansion award process will be run every 6 months after the Type A auction.

Expansions will be awarded TCCs through the award process once they are operational.

All entities seeking LT or ST TCC awards in a given award cycle will nominate expansion TCCs and mitigating TCCs following the posting of the Type A auction results.

- A single nomination deadline for all expanders appears to be needed to limit the time required to complete the expansion award process.

- This rule could be reconsidered if it appears to be causing anomalies.

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## TCC Expansion Award Choices



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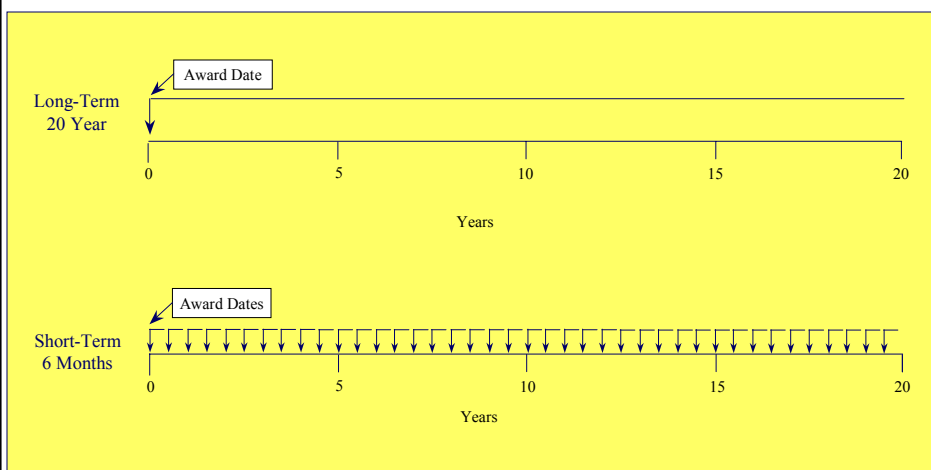
Entities will choose between LT and ST expansion TCCs. It is not possible to choose a mix under the MSWG approach, since an upgrade must be either included in or excluded from the Type A auction grid model.

- LT TCCs:  One-time award of TCCs covering a 20-year period.

- ST TCCs:  6-month duration, awarded every 6 months.

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Offer LT Rolling Awards ??

Long-Term
5-Year Rolling
Version 1

Award Date

0          5          10          15          20
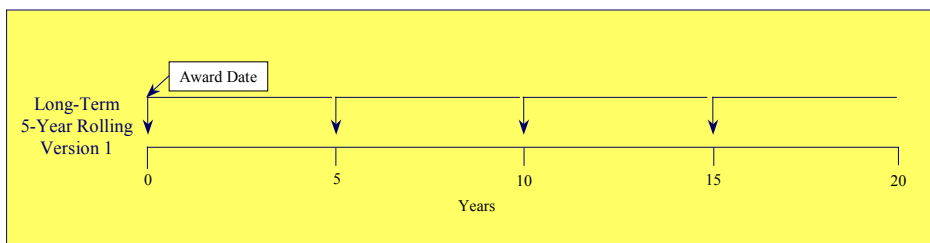
Years

The previous presentation suggested a second alternative for LT TCC awards, called "5-year rolling awards."

After further consideration, we are concerned that 5-year rolling awards, as previously described, will create difficulties for the award process.

- Expansions associated with 5-year rolling awards would need to be included in the grid configuration for some but not all capability periods covered by the Type A auction.

- As a result, the grid configuration could change considerably from period to period, making it more difficult for subsequent LT expanders and auction bidders to receive consistent awards across successive periods. The situation would be especially difficult for subsequent expansions that have value in conjunction with the previous expansions receiving 5-year rolling awards.

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Offer LT Rolling Awards ??



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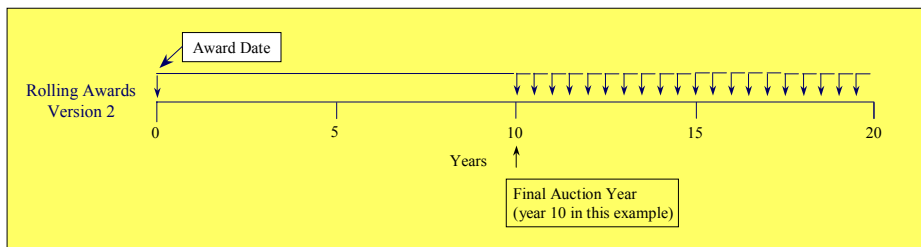
A better approach would be to maintain a correspondence between the final year of the rolling award and the final auction year.

- Initial term of the rolling award would extend through the final auction year.

- Rolling "update" awards would be made every 6 months, continually extending the LT awards through the end of the final auction year.* These update awards would be made through the normal award process.

- Grid facilities associated with rolling awards would not be included in the final 6-month capability period of the Type A auction, but would be included in all other capability periods.

- LT update awards would be evaluated first in the LT queue, so that the associated grid capacity could be included in the transmission model used to evaluate subsequent LT awards.

* The timing of the subsequent rolling awards would correspond with the periodicity of the Type A auction.

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Each entity entitled to be awarded TCCs for a transmission expansion will nominate the TCCs it wishes to be awarded.

- Entities choosing LT expansion TCCs:
  - Nominate TCCs for each capability period covered by the last Type A auction.
  - May make different award requests in each capability period (e.g., different summer and winter requests).
  - May make multi-period requests (e.g., 2-year TCCs) once the end-state TCC auction software is in use.

- Entities choosing ST expansion TCCs nominate TCCs for the upcoming capability period.

- Entities provide preference weights with positive values for each requested TCC.
  - May differ for each requested TCC.
  - Must be internally consistent, given some numeraire.
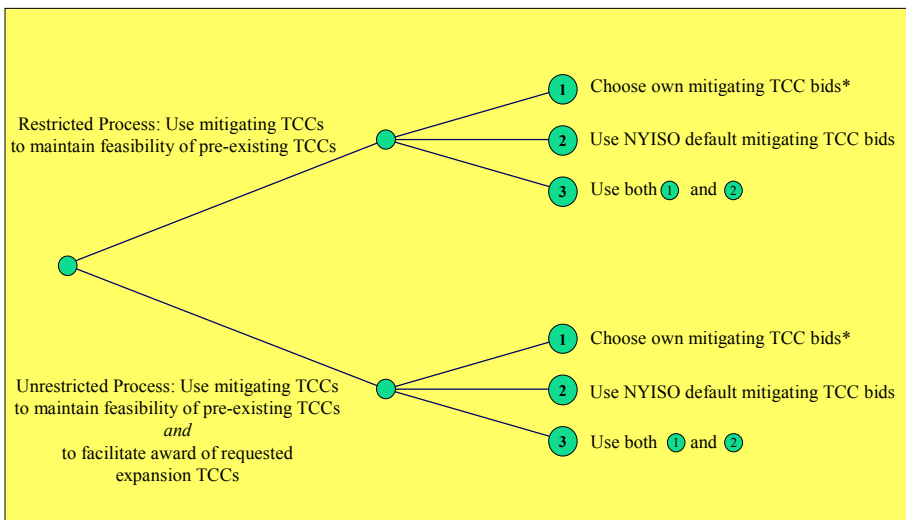
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Entities do not nominate TCCs for the capability periods following the final year of the Type A auction.

- A separate set of procedures has been developed to award TCCs for the years in which a Type A auction has not yet been held.

- The award process for the unauctioned time period attempts to roll the TCC awards made for the final auction year out to year 20 (may differ by capability period).

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Mitigating TCC Choices

Restricted Process: Use mitigating TCCs to maintain feasibility of pre-existing TCCs

(1) Choose own mitigating TCC bids*
(2) Use NYISO default mitigating TCC bids
(3) Use both (1) and (2)

Unrestricted Process: Use mitigating TCCs to maintain feasibility of pre-existing TCCs
*and*
to facilitate award of requested expansion TCCs

(1) Choose own mitigating TCC bids*
(2) Use NYISO default mitigating TCC bids
(3) Use both (1) and (2)

* If (1) is insufficient to maintain the feasibility of pre-existing TCCs, the award procedures will revert to (3) as a backstop.

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Each entity included in the award process will indicate its preferences regarding mitigating TCCs.  Mitigating TCCs will typically have negative weights.

- Entities choose when they will be awarded mitigating TCCs.

    - *Restricted:*  Only if necessary to maintain the feasibility of pre-existing TCCs, *or*

    - *Unrestricted:*  To maintain the feasibility of pre-existing TCCs and/or to allow the award of a higher-value set of requested TCCs.

- Entities choose mitigating TCCs and preference weights.

    - May designate their own, *or*

    - Rely on default set created by NYISO, *or*

    - Combination of both.

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**DEFAULT MITIGATING TCC EXAMPLES**

| Outstanding TCC (Sold in Type A Auction or Pre-Existing) | | | Default Mitigating TCC | | |
|---|---|---|---|---|---|
| From | To | Type A Auction Market-Clearing Price | From | To | Default Bid |
| A | B | $5 | B | A | -$5 |
| X | Y | $10 | Y | X | -$10 |

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- NYISO will create a default mitigating TCC bid set.
  - Mitigating TCC bid created in the counterflow direction to every outstanding TCC with a positive 4-round average price in the previous Type A auction.
  - Weight for mitigating TCC is the 4-round average price in the previous Type A auction. Weights for nominated TCCs must be internally consistent with the default weights for the mitigating TCCs, given some numeraire.
  - Mitigating bids will be for MW quantity of the outstanding TCC.
- Entities choosing LT TCCs designate mitigating TCCs for each capability period covered by the last Type A auction.
- Entities choosing ST TCCs designate mitigating TCCs for the upcoming capability period.

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**Expansion TCC Award Process**

**Step I**

Bids →

Pre-Existing TCCs →

Type A Auction
(long-term TCCs)

**Step II**

Transmission Expanders
Nominate TCCs
- Expansion TCCs
- Mitigating TCCs

**Step III**

**Allocate New Long-Term Expansion TCCs**

**Auctioned Period**

Award TCCs for years in which a Type A auction has been held
- Test if requested TCCs are feasible on pre-expansion grid
- Determine awards of expansion and mitigating TCCs

*Repeat for each auctioned capability period*

**Unauctioned Period**

Award TCCs for years in which a Type A auction has not been held
- Determine awards of expansion and mitigating TCCs

*Repeat for each unauctioned capability period*

*Repeat for each party requesting LT expansion TCCs*

**Step IV**

Allocate new ST expansion TCCs
- Test if requested TCCs are feasible on pre-expansion grid
- Determine awards of expansion and mitigating TCCs

**Step V**

Type B Auction
(6-month TCCs)

For each expander, LT expansion awards will need to be analyzed separately for each capability period covered by the award.

- TCC reservations and grid configuration may vary between capability periods.

- LT TCC awards must be permitted to vary between capability periods since TCCs feasible in one period may not be feasible in another.

- If TCC awards were not permitted to vary between capability periods, it is possible that very few TCCs could be awarded for a valuable expansion.

- When the end-state auction model is in use, expanders may request multi-period awards; the award will be equal to the minimum MW quantity feasible in any of the periods.

The one-time award of 20-year TCCs will require the analysis of up to 40 capability periods.

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The award model is different for capability periods before versus after the final auction year.

- *Awards for Auctioned Period:* If the end-state auction software is in use, the awards for all years covered by the Type A auction may be determined simultaneously, based on the preference weights for nominated expansion TCCs and mitigating TCCs. If not, the awards in these years will be determined by running a single-period auction model for every capability period. The award procedures described below will apply in each capability period covered by the last Type A auction, whichever auction model is used.

- *Awards for Unauctioned Period:* Separate procedures will be used to determine the awards for the years following the final auction year.

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## Slide 26

Approximation of "20 Year TCCs"



Prior to End-State Auction

Awarded MW

Auctioned Time Period: Place high weight on desired quantity of TCCs in each capability period

Unauctioned Time Period: Process attempts to maintain year 5 quantity in years 5-20, but may be less

Final Auction Year (year 5 in this example)

With End-State Auction

Awarded MW

Auctioned Time Period: Place high weight on desired quantity of 5-year TCCs

Unauctioned Time Period: Process attempts to maintain year 5 quantity in years 5-20, but may be less

Final Auction Year (year 5 in this example)

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## Slide 27

### STEP III                    Approximation of "20-Year TCCs"

Because awards need to be separately evaluated in each capability period and there are separate award procedures that apply before and after the final auction year, it is not possible to request a single "20-year TCC." However, the award process supports such awards insofar as it is possible.

- End-state auction will support requests for multi-period awards.

- Award process for unauctioned time period attempts to extend awards for final auction year out to year 20.

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Entities will be awarded LT TCCs in the order of the actual date of commercial operation of their expansions.

The Step III award procedures will be applied sequentially to each expander seeking LT TCC awards.

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**Expansion TCC Award Process**
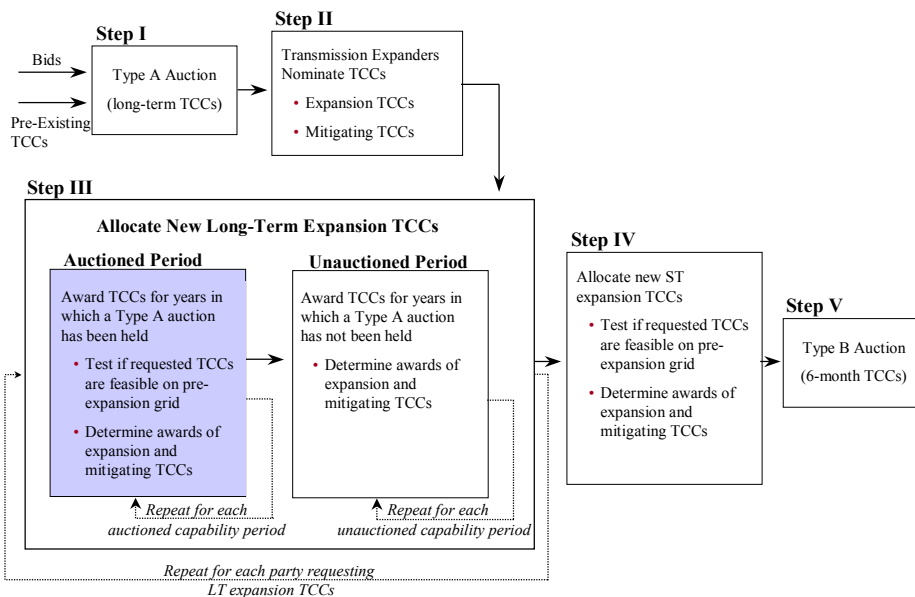
## STEP III: Auctioned Period     Test Pre-Expansion Feasibility

The NYISO will determine whether the TCCs requested by the first expander are feasible on the pre-expansion grid.

- Use grid model from the previous Type A auction, which will include grid improvements of entities previously awarded LT TCCs.

- Include fixed reservations for pre-existing TCCs.

- Run TCC award model, with bids equal to the the negative of the preference weights assigned to each nominated expansion TCC.

  - Bids will not be included for nominated TCCs that had a negative market value in the last Type A auction.

  - If more than one set of nominated TCCs is feasible on the pre-expansion grid, this procedure will identify the one with the lowest value to the expander.

- Create temporary fixed reservations for any nominated TCCs identified as feasible on the pre-expansion grid.

## STEP III: Auctioned Period     Determine TCC Awards

The NYISO will determine the quantity of expansion TCCs nominated by the expander that are simultaneously feasible on the post-expansion grid along with all pre-existing TCCs, and award mitigating TCCs as appropriate.

- Use grid model from the previous Type A auction, which will include grid improvements of entities previously awarded LT TCCs. In addition, the model will be expanded to include the grid upgrades of the entity whose award is currently being determined ("post-expansion grid").

- Include fixed reservations for pre-existing TCCs and also for TCCs requested by the expander that were found to be feasible on the pre-expansion grid.

The method used to determine the expansion awards in Step III will depend on the expander's choice concerning the circumstances under which it will accept mitigating TCCs.

*Unrestricted Process:* If the expander has indicated that it is willing to be awarded mitigating TCCs to facilitate the award of its nominated TCCs, then the award model will be run using the weights for both the nominated and mitigating TCCs.

- Nominated TCCs may be awarded or scaled back, depending on their weights and on the weights for the mitigating TCCs.

- Mitigating TCCs may be assigned to maintain the feasibility of all pre-existing TCCs and, depending on the weights, may also be assigned to facilitate the award of a higher-value set of nominated TCCs.

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*Restricted Process:* If the expander has indicated that it is only willing to be assigned mitigating TCCs to preserve the feasibility of pre-existing TCCs, then the expansion awards will be determined through the following steps, all modeled on the post-expansion grid.

- First, run the award model using weights for the nominated TCCs, to see if some combination of the nominated TCCs is feasible along with the pre-existing TCCs and the TCCs requested by the expander that were found to be feasible on the pre-expansion grid. If this step identifies a feasible TCC award set, then the analysis is done.

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- If the first step is not feasible, then run the award model using only the weights for the mitigating TCCs, to identify the mitigating TCCs required to maintain the feasibility of the pre-existing TCCs.

- Third, run the the award model using weights for the nominated TCCs, to identify the TCC awards that are feasible along with all pre-existing TCCs, TCCs requested by the expander that were found to be feasible on the pre-expansion grid, and mitigating TCCs identified in the previous step. The TCC awards will be scaled back, based on their weights, to maintain feasibility.

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The award process requires a default mechanism in the event that the mitigating TCCs and weights chosen by the expander are not sufficient to maintain the feasibility of the pre-existing TCCs on the post-expansion grid.

- If this happens, the NYISO default mitigating bids will be added to the expander's mitigating bids and the analysis will be repeated.

- This default mechanism will be used for both the Restricted and Unrestricted Processes described above.

## STEP III: Auctioned Period                                    Wrap-Up

The previous slides describe the procedures used to award LT
expansion TCCs for each capability period covered by the last
Type A auction.

- The awards will reflect the additional capacity made
  available by the expansion, and will also maintain the
  feasibility of all pre-existing TCCs.

- The awards may differ between capability periods, based
  on the weights, grid configuration and reservations for pre-
  existing TCCs.

- When the end-state auction is in use, entities may nominate
  multi-period TCCs in instances in which they prefer an
  award amount that is fixed over a number of periods.

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**Expansion TCC Award Process**



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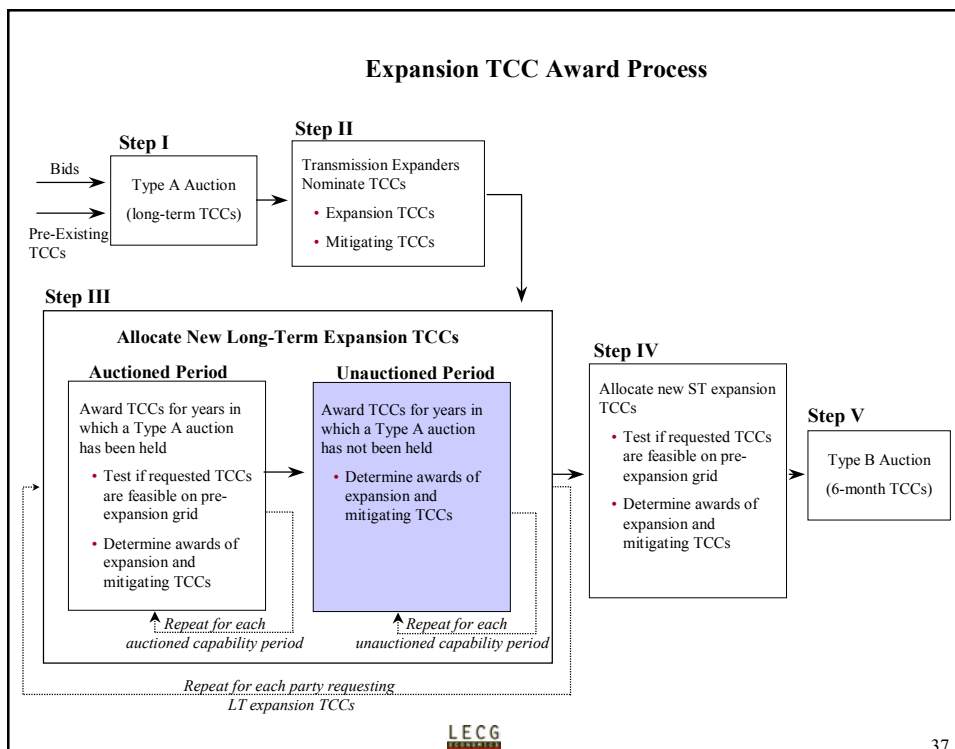
**STEP III: Unauctioned Period          Separate Award Process**

A separate set of procedures has been developed to award TCCs for the years in which a Type A auction has not yet been held.

- A Type A auction may not yet have been held for the later years covered by a one-time award of 20-year TCCs.

- The lack of auction awards means that a mechanism is needed to reserve transmission capacity in later years for sale in later auctions, rather than making it all available for expansion awards.

- It is proposed that the following award process would be used in each capability period following the final auction year. (Capability periods would not need to be separately analyzed if the TCC reservations were unchanged from a previous period.)

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**STEP III: Unauctioned Period                    Award Process**

The award process for the unauctioned period attempts to extend the TCC awards made for the final auction year out to year 20 (may differ by capability period).  It has two steps:

- *With Auction TCCs:* Run award model to determine the candidate set of final auction year TCCs that remains feasible on the post-expansion grid in the first capability period following the final auction year, assuming that the TCCs awarded for the final auction year are still valid.

- *Without Auction TCCs:* Run award model a second time to determine the subset of the candidate set that is feasible without reservations for the final year TCC auction awards. The awards determined in this step will be feasible even if the TCCs awarded for this capability period in later auctions do not provide the same counterflow as the final auction year awards.

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The With Auction TCCs and Without Auction TCCs evaluations:

- Use the same locations and weights for the nominated expansion TCCs and mitigating TCCs as for the TCCs awarded in the corresponding period of the final auction year.

- Set nominated quantities equal to the quantities awarded in the corresponding period of the final auction year.

- Include reservations for all grandfathered TCCs and LT expansion TCCs that remain valid in the capability period following the final auction year.

The With Auction TCCs evaluation includes reservations for the auction awards made in the final auction year, while the Without Auction TCCs step does not.

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For the unauctioned years, the NYISO will not need to test for the feasibility of the nominated TCCs on the pre-expansion grid because the most an expander could receive would be the final auction year award set. The process already excludes from the final auction year awards any nominated TCCs that were feasible on the pre-expansion grid in the final auction year.

## STEP III: Unauctioned Period                    Periods Evaluated

TCC expansion awards will be evaluated in each relevant capability period following the final auction year.

- At a minimum, the evaluation would need to be made for each capability period of the first year following the final auction year.

- The evaluation may also need to be made for capability periods in which a substantial change is expected, such as the expiration of a grandfathered TCC or LT TCC providing counterflow for expansion awards.

- The awards may be held constant between years in which an evaluation is made.

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## STEP III: Unauctioned Period                    Grid Model

The grid model used in each relevant capability period will include:
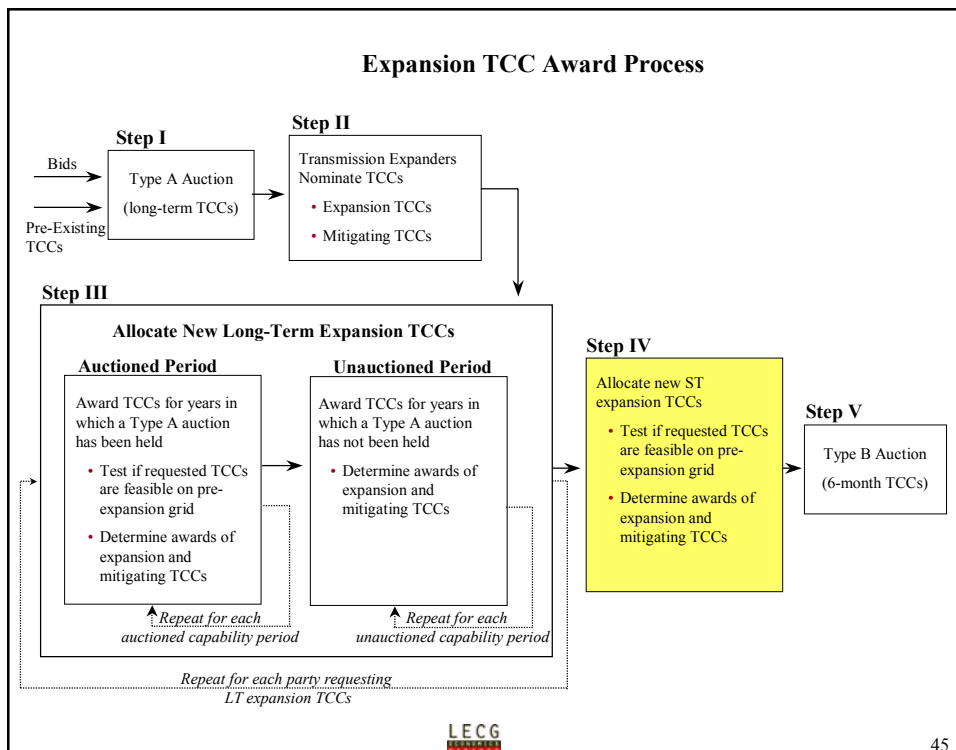
- Representation of completed expansions that have been awarded LT TCCs.

- Loop flow at the level appropriate for the capability period under evaluation.

- Reservations for grandfathered TCCs and LT expansion TCCs that are valid in the relevant capability period.

- Controllable devices set at the level appropriate for the capability period under evaluation.

## STEP III LT TCC Awards to Subsequent Entities

The award of LT expansion TCCs to subsequent entities will
follow the same process described for the first expander, with a
few logical modifications.

- The pre-expansion and post-expansion grid models used for
  the analyses will include the upgrades of all entities
  previously awarded LT TCCs.

- The LT TCCs awarded to previous expanders will be added
  to the set of pre-existing TCC reservations in the award
  analyses.

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### Expansion TCC Award Process

**Step I**

Bids →

Pre-Existing TCCs →

Type A Auction
(long-term TCCs)

**Step II**

Transmission Expanders
Nominate TCCs
- Expansion TCCs
- Mitigating TCCs

**Step III**

Allocate New Long-Term Expansion TCCs

**Auctioned Period**

Award TCCs for years in
which a Type A auction
has been held
- Test if requested TCCs
  are feasible on pre-
  expansion grid
- Determine awards of
  expansion and
  mitigating TCCs

*Repeat for each
auctioned capability period*

**Unauctioned Period**

Award TCCs for years in
which a Type A auction
has not been held
- Determine awards of
  expansion and
  mitigating TCCs

*Repeat for each
unauctioned capability period*

*Repeat for each party requesting
LT expansion TCCs*

**Step IV**

Allocate new ST
expansion TCCs
- Test if requested TCCs
  are feasible on pre-
  expansion grid
- Determine awards of
  expansion and
  mitigating TCCs

**Step V**

Type B Auction
(6-month TCCs)

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ST expansion TCCs will be awarded following the allocation of LT expansion TCCs. Entities will be awarded ST TCCs in order of the actual date of commercial operation of their expansions.

The award of ST expansion TCCs will follow the applicable portions of the processes described for LT expansion awards, with the following differences.

- For ST TCC awards, the process will be applied for a single capability period.

- The pre-expansion and post-expansion grid models used for the analyses will include the upgrades of all entities previously awarded LT or ST TCCs.

- The LT and ST TCCs awarded to previous expanders will be added to the set of pre-existing TCC reservations in the award analyses.

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**Expansion TCC Award Process**



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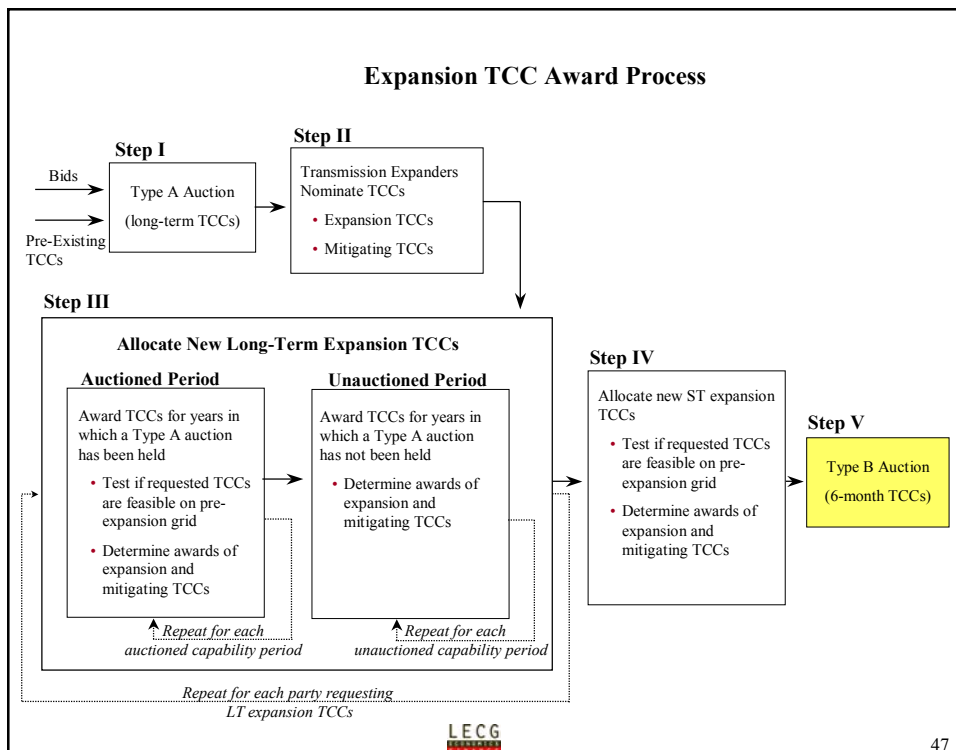
The Type B auction is a 6-month auction.

- Uses a full transmission grid model, including all expansions.

- All unexpired TCCs will be reserved, including all LT expansion TCCs and newly awarded ST expansion TCCs.

- Allows the sale and reconfiguration of all TCCs valid for the relevant 6-month period.

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**REVISED AWARD PROCESS        Summary of Modifications**

The MSWG award process has been modified to reflect the proposed resolution of the ambiguities identified during Task 1.

- Introduces a process for awarding LT expansion TCCs for the years after which TCCs have been sold in a Type A auction.

- Explicitly allows LT TCC awards to vary between capability periods, due to differences in grid configuration and TCC reservations in each period.  For the same reason, the award evaluation will be conducted separately for each capability period.

- Completes the design of a process for awarding "mitigating TCCs" to preserve the feasibility of previously awarded TCCs and to support the award of nominated TCCs.

- Increases the use of TCC auction software to identify unique solutions, based on preference weights for nominated TCCs.

**DISCUSSION**                                    **Possible Simplifications**

The revised expansion TCC award process preserves the structure
and objectives of the original MSWG proposal and provide choices
to expanders whenever possible.  A natural question is whether it
could be simplified.

- Some complicating features appear to be necessary:
    - Separate evaluation of LT TCCs for each capability
      period.
    - Awards of mitigating TCCs.
- The MSWG might consider the necessity of others:
    - Evaluation of feasibility of nominated TCCs on pre-
      expansion grid.
    - Option to nominate LT TCCs on a rolling basis.
    - Election of ST TCCs every 6 months.  If ST TCCs
      were elected annually, the Type A auction and LT TCC
      expansion award process could also be run annually,
      with a simpler 6-month reconfiguration auction in
      between. LECG

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**DISCUSSION**                                              **TCC Options**

If parties were able to request TCC option expansion awards, as
an alternative to TCC obligations, it may help them to capture the
full value of expansions through LT TCC awards.

When TCC option awards are possible, the MSWG could consider
eliminating ST TCCs.

- This would simplify the award process.
- It would also eliminate several problems:
    - Entities cannot request LT TCCs for a transmission
      expansion that creates valuable transfer capability in
      conjunction with a prior expansion that has chosen ST
      TCCs.
    - Historical system data are not meaningful to bidders
      in the Type A auction, since the auction excludes the
      transmission upgrades of parties that have elected ST
      TCCs. LECG

Initial modeling runs to test the modified MSWG award process
have shown:

- The set of awarded expansion TCCs may be reduced by the
  request of TCCs with a zero or negative value in the last
  TCC auction.  Such requests increase the TCCs reserved in
  the pre-expansion evaluation, which could decrease the
  awarded expansion TCCs.

- The auction awards may change in predictable but
  potentially large ways as a result of:

  - Changes in the composition of the mitigating TCC set
    (locations, relative weights).

  - Changes in the weights for nominated TCCs.

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- The need to test whether it is necessary to increase the MW
  quantity of the TCC nominations in the evaluation of
  whether the nominated TCCs are feasible on the pre-
  expansion grid.

  - Limiting the MW quantity to the amount requested by
    the expander may lead to the reservation of too few
    TCCs in subsequent steps.

  - Increasing the MW quantity beyond the requested
    amount could lead to absurd reservations.

- The need to test whether it is necessary, at the end of Step
  III, to evaluate the post-expansion feasibility of the
  awarded expansion and mitigating TCCs in a model that
  does not include any of the TCCs reserved because they
  were feasible on the pre-expansion grid. It appears that this
  step may not be necessary if the reservations for TCCs
  feasible on the pre-expansion grid are limited to TCCs with

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Task 2 will perform a scenario analysis of the revised expansion award process.

- Explore gaming opportunities.

- Evaluate possibility of perverse awards.

- Identify additional ambiguities.