Comments & Responses to Staff ACOS Methods Whitepaper Used to Develop Standby and Buyback Service Rates

Energy Tariff Experts LLC
Understand Cost, Make Better Decisions

NY BES+ NEW YORK BATTERY AND ENERGY STORAGE TECHNOLOGY CONSORTIUM

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Executive Summary

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The Good

1. The Decision Tree Method provides a standardized way to evaluate utility infrastructure as either Shared, Local, or Customer
2. The Workpapers provided show how it can be implemented in practice
3. The Decision Tree Input cost categories are very similar to categories reported on FERC Form 1s and therefore each utility should be able to produce them.

Areas of Concern

1. Some of the Decision Tree questions would benefit from clarifications or more precise definitions
2. In practice, some of the answers to Decision Tree questions at the Secondary demand level deserve further scrutiny
3. The Embedded Cost of Service (ECOS) Studies from ConEd, Orange & Rockland, and Central Hudson show rate base and revenue requirements at a summary level and do not map to the Decision Tree inputs.
    1. Additional granularity is required to perform the cost categorization as proposed in the Decision Tree Methodology.
    2. Failure to do this jeopardizes the goal of a uniform approach across all NY utilities

Outline

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Part I – Requested clarifications and potential modifications to the Decision Tree

Part II – The need for a uniform approach to categorization

Part III – ECOS Studies without sufficient granularity preclude the use of the Decision Tree Methodology as intended

Requested Clarifications from 1/27/2021 Stakeholder Session

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More precise definitions and guardrails for Question 3 are needed

- "Could a decrease in demand result in 'unused assets'?"

Recommendation: Changing "Could" to "Would" to reduce speculation.

Recommendation: Clarify what a "small group of customers" means (Whitepaper p. 13). During the Jan'21 tech conf, Guidehouse said "specific customer" would still apply at C&I level, but confirmation of this would be helpful.

Recommendation: Guidance regarding materiality thresholds would be very helpful to ensure a uniform approach to categorization across utilities. This would prevent situations where a de-minimus or outlier scenarios could be used to justify a Local vs. Shared decision that inappropriately characterizes an asset.

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"the Commission does agree that a local cost is driven by the peak flow of power, regardless of the direction, and any category of costs that has the potential to be reduced by an injection should not be classified as local" (5/16/2019 Order, p. 28)

Recommendation: Add an additional question to the decision tree:

"Question 2a after question 2. "Does power injection have the potential to reduce cost for the asset?" if yes, then go directly to "shared", if no, then continue to question 3."

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Radial vs. Mesh Networks

1. Mesh networks are fundamentally different than radial networks in that Transformers are shared among customers
2. Methodology doesn't have a way to take this difference into account if mesh and radial assets aren't differentiated in ECOS Study.
3. Granularity of asset grouping is important to the proper use of the decision tree. If assets that yield different answers to questions are grouped together then the binary decision tree can break down.

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Required Data Inputs for Decision Tree Align with FERC Account Categories for Electric Plant Assets

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- The Decision Tree Method proposes the following categories by voltage level to distinguish costs appropriately (p. 28)
  - Land and Land Rights
  - Structures and Improvements
  - Station Equipment
  - Poles, towers and fixtures
  - Overhead conductors, devices
  - Underground conduits
  - Underground conductors, devices
  - Line transformers

Excerpt of Categories from ConEd Form 1 for Distribution Plant

Line No.	Title of the FERC Account	Acct No.
59	**4. DISTRIBUTION PLANT**	
60 g	Land and Land Rights	360
61 g	Structures and Improvements	361
62 g	Station Equipment	362
63 g	Storage Battery Equipment	363
64 g	Poles, Towers, and Fixtures	364
65 g	Overhead Conductors and Devices	365
66 g	Underground Conduit	366
67 g	Underground Conductors and Devices	367
68 g	Line transformers	368
69 g	Services	369
70 g	Meters	370
71 g	Installations on Customer Premises	371

- These categories are all present in the annual FERC Form 1 filing

Decision Tree Method Provides Visibility into Allocations by Asset Category & Voltage

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Excerpt from 12/29/2020 Workpapers - NIMO Decision Tree Questions

	Secondary Demand						
	QUESTION 2 Are all costs attributable to customer demand?	Question 3: Could an decrease in demand result in an "unused asset"?	Question 4: Does an increase system peak demand increase the costs?	Question 5: Does an increase in non-coincident demand increase cost?		QUESTION 6: Could a kW of reverse power flow increase costs?	
D. DISTRIBUTION PLANT							
Land and land rights	Yes	No	Yes	Yes	Allocate	No	Exclude
Structures and impr.	Yes	No	Yes	Yes	Allocate	No	Exclude
Station equipment	Yes	No	No	Yes	Local	No	Exclude
Poles, towers and fixtures	Yes	No	No	Yes	Local	Yes	Local
OH conductors, devices	Yes	No	No	Yes	Local	Yes	Local
UG conduits	Yes	No	No	Yes	Local	Yes	Local
UG conductors, devices	Yes	No	No	Yes	Local	Yes	Local
Line transformers	Yes	Yes	No	Yes	Local	Yes	Local
Services	Yes	No	No	Yes	Local	Yes	Local
Meters	Yes	Yes	No	Yes	Local	Yes	Local

This level of transparency is good and is required to achieve a uniform approach across all NY utilities

This also allows stakeholders to understand the rationale and justification for allocations

Question 4: Why are “Land/Land Rights” and “Structures & Improvements” a Yes, but “Station Equip” and “Conductors” a “No”?

Question 6: How does a reverse power flow increase costs for “Poles/Towers/Fixtures” & “UG Conduits”

A Uniform Application of the Decision Tree Allows for Side by Side Comparisons

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- Most "Local" determinations in the Workpapers occur at the Secondary Demand level. Nearly all categories for Transmission and Primary Demand are "Shared"

Comparison of Decision Tree Allocation Outcomes

	Decision Tree End Points - Secondary Demand					
	Standby Categorizations			Question 6 - Buyback Demand		
D. DISTRIBUTION PLANT	NIMO	NYSEG	RGE	NIMO	NYSEG	RGE
Land and land rights	Allocate	Allocate	Allocate	Exclude	Allocate	Exclude
Structures and impr.	Allocate	Allocate	Allocate	Exclude	Allocate	Exclude
Station equipment	Local	Local	Local	Exclude	Local	Exclude
Poles, towers and fixtures*	Local	Local	Local	Local	Local	Local
OH conductors, devices*	Local	Local	Local	Local	Local	Local
UG conduits*	Local	Local	Local	Local	Local	Local
UG conductors, devices*	Local	Local	Local	Local	Local	Local
Line transformers**	Local	Local	Local	Local	Local	Local
Services	Local	Local	Local	Local	Local	Local
Meters	Local	Local	Local	Local	Local	Local

* NYSEG & RGE further divided into Primary/Secondary Demand & Customer in Workpapers

** NYSEG and RGE Divide into Demand & Customer components in Workpapers

- <u>The endpoint of this process should result in the ability to do a side by side comparison for Distribution Plant categories for all six NY utilities</u>.
- Any deviations should be explained with evidence (NYSEG Station Equipment?).
- Differences in Transmission plant granularity are less important if all of those assets will be "Shared"

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Decision Tree Method Requires Enough Granularity to Answer the Questions

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EXAMPLE NIMO SECONDARY DEMAND DECISION TREE ANSWERS						
D. DISTRIBUTION PLANT	Q2	Q3	Q4	Q5	Q6	
LAND AND LAND RIGHTS	Y	N	Y	Y	N	YNYYN
STRUCTURES & IMPROVEMENTS	Y	N	Y	Y	N	
STATION EQUIPMENT	Y	N	N	Y	N	YNNYN
POLES TOWERS & FIXTURES	Y	N	N	Y	Y	YNNYY
OVERHEAD CONDUCTORS	Y	N	N	Y	Y	
UNDERGROUND CONDUIT	Y	N	N	Y	Y	
UNDERGROUND CONDUCTORS	Y	N	N	Y	Y	
LINE TRANSFORMERS	Y	Y	N	Y	Y	YYNYY

The following unique groupings of assets can be made based on having the same answers to questions in the NIMO analysis for Sec. Demand (not a NY-BEST endorsement of answers, but to facilitate discussion)

- Land/Land Rights & Structures & Improvements
- Substations
- Line Transformers
- Poles/Towers/Fixtures, OH/UG Conductors, and UG Conduit

These groupings would be the minimum level of detail needed to achieve a “uniform approach” for Secondary Demand.

Decision Tree Method Requires Enough Granularity to Answer the Questions

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ECOS Categories for Three Utilities Don't Map to Data Inputs

	Secondary Demand Categories in ECOS that Align to Decision Tree Data Inputs		
D. DISTRIBUTION PLANT	**ConEd**	**CenHud**	**O&R**
LAND AND LAND RIGHTS			
STRUCTURES & IMPROVEMENTS			
STATION EQUIPMENT		Yes	Yes
POLES TOWERS & FIXTURES			
OVERHEAD CONDUCTORS			
UNDERGROUND CONDUIT			
UNDERGROUND CONDUCTORS			
LINE TRANSFORMERS	Yes	Yes	Yes

- These three utilities comingle multiple categories as "Lines"
- This comingling precludes the ability to answer Question 6 for each utility
  - Based on the NIMO Secondary Demand Decision Tree, Land/Land Rights, Structures & Improvements, and Station Equipment are a No on Question 6
- They also provide very little detail for the High Tension/Primary voltage level which further precludes application of the Decision Tree

Decision Tree Method Requires More Granularity from ConEd

- HT includes Distribution assets > 600V.
- The HT category should be broken out by asset category unless ConEd intends for all of these assets to be Shared.
- What is included in LINES?

- Might OH vs. UG transformers be treated differently due to different percentages of units in radial vs. mesh networks

- At a minimum, Land/Land Rights, Structures & Improvements, and Substations need to be separate from Lines

Excerpted Functional Categories from ConEd ECOS 19-E-0065

7	TRANSMISSION
8	
9	HIGH TENSION SYSTEM
10	HT - DEMAND
11	HT - CUSTOMER
12	
13	LOW TENSION SYSTEM
14	O.H. TRANSFORMERS - DEMAND
15	U.G. TRANSFORMERS - DEMAND
16	O.H. TRANSFORMERS - CUSTOMER
17	U.G. TRANSFORMERS - CUSTOMER
18	O.H. LINES DEMAND
19	U.G. LINES DEMAND
20	O.H. LINES CUSTOMER
21	U.G. LINES CUSTOMER
22	
23	TOTAL LOW TENSION DEMAND
24	TOTAL LOW TENSION CUSTOMER
25	
26	SERVICE COSTS - O.H.
27	SERVICE COSTS - U.G.

Inputs from Modified Excerpt of Categorization Workpapers (12/29/20)

D. DISTRIBUTION PLANT
LAND AND LAND RIGHTS
STRUCTURES & IMPROVEMENTS
STATION EQUIPMENT
POLES TOWERS & FIXTURES
OVERHEAD CONDUCTORS
UNDERGROUND CONDUIT
UNDERGROUND CONDUCTORS
LINE TRANSFORMERS
SERVICES
METERS

NYSEG & RGE also apportion costs for distribution components between Demand & Customer

Decision Tree Method Requires More Granularity from Central Hudson

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- If Transmission will be "Shared", then lack of granularity isn't a problem
- Primary and Secondary lines need breakouts for the following categories
  - Land/Land Rights
  - Structures/Improvements
  - Poles/Towers/Fixtures
  - UG Conduit (if applicable)
  - Conductors
- The Decision Tree can't work at the level of granularity in CenHud's ECOS

Excerpted Functional Categories from CenHud ECOS 20-E-0428

Transmission & Subtransmission:
Power Supply Trans - Subs
Power Supply Trans - Lines
Common Trans - Subs
Common Trans - Lines
Specific - Subs
Specific - Lines
General Subtrans Lines
Total Transmission & Subtransmission
Bulk Distribution:
Distribution Substations
Primary Lines - Demand
Primary Lines - Customer
Line Transformers - Demand
Line Transformers - Customer
Secondary Lines - Demand
Secondary Lines - Customer
Services - Demand
Services - Customer
Total Bulk Distribution

Inputs from Modified Excerpt of Categorization Workpapers (12/29/20)

D. DISTRIBUTION PLANT
LAND AND LAND RIGHTS
STRUCTURES & IMPROVEMENTS
STATION EQUIPMENT
POLES TOWERS & FIXTURES
OVERHEAD CONDUCTORS
UNDERGROUND CONDUIT
UNDERGROUND CONDUCTORS
LINE TRANSFORMERS
SERVICES
METERS

NYSEG & RGE also apportion costs for distribution components between Demand & Customer

Decision Tree Method Requires More Granularity from Orange & Rockland

- The granularity in the O&R ECOS is insufficient to be able to apply the Decision Tree methodology
- High Tension demand is just one line item that presumably includes everything

Excerpted Functional Categories from O&R ECOS 21-E-0074 (DAC-2)

	PLANT IN SERVICE		
1	MERCHANT FUNCTION	E	U01
2	TRANSMISSION	D	D01
3	SUBSTATION	D	D04
4	HIGH TENSION OH/UG - DEMAND	D	D02
5	HIGH TENSION OH/UG - CUSTOMER	C	C01
6	TRANSFORMERS - OH DEMAND	D	D03
7	TRANSFORMERS - UG DEMAND	D	D03
8	TRANSFORMERS - OH CUSTOMER	C	C02
9	TRANSFORMERS - UG CUSTOMER	C	C03
10	OH LINES DEMAND	D	D03
11	UG LINES DEMAND	D	D03
12	OH LINES CUSTOMER	C	C02
13	UG LINES CUSTOMER	C	C03
14	SERVICES - OH	C	C04
15	SERVICES - UG	C	C05

Inputs from Modified Excerpt of Categorization Workpapers (12/29/20)

D. DISTRIBUTION PLANT
LAND AND LAND RIGHTS
STRUCTURES & IMPROVEMENTS
STATION EQUIPMENT
POLES TOWERS & FIXTURES
OVERHEAD CONDUCTORS
UNDERGROUND CONDUIT
UNDERGROUND CONDUCTORS
LINE TRANSFORMERS
SERVICES
METERS

NYSEG & RGE also apportion costs for distribution components between Demand & Customer

Need to Have Line of Sight from FERC Acct Category in ECOS to ACOS Revenue Req.

- The ConEd ECOS includes substations in the High Tension (HT) category, but the 9/23/2019 ACOS itemizes it w/ a revenue requirement
- The Decision Tree can't work if the ECOS functional areas don't carry through to the ACOS

Excerpted Functional Categories from ConEd ECOS 19-E-0065

7	TRANSMISSION
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9	HIGH TENSION SYSTEM
10	HT - DEMAND
11	HT - CUSTOMER
12	
13	LOW TENSION SYSTEM
14	O.H. TRANSFORMERS - DEMAND
15	U.G. TRANSFORMERS - DEMAND
16	O.H. TRANSFORMERS - CUSTOMER
17	U.G. TRANSFORMERS - CUSTOMER
18	O.H. LINES DEMAND
19	U.G. LINES DEMAND
20	O.H. LINES CUSTOMER
21	U.G. LINES CUSTOMER
22	
23	TOTAL LOW TENSION DEMAND
24	TOTAL LOW TENSION CUSTOMER
25	
26	SERVICE COSTS - O.H.
27	SERVICE COSTS - U.G.

?

Excerpt from ConEd ACOS (9/23/2019)

STEP 1A: DETERMINE REVENUE REQUIREMENTS ALLOCATED TO SERVICE CLASSIFICATIONS

REQUIRED REVENUE
(REQUIRED REVENUE CALCULATION)

5	TRANSMISSION
6	
7	SUBSTATION
8	
9	HT - DEMAND
10	O.H. TRANSFORMERS - DEMAND
11	U.G. TRANSFORMERS - DEMAND
12	O.H. LINES DEMAND
13	U.G. LINES DEMAND
14	
15	TOTAL DEMAND COMPONENTS
16	
17	ENERGY COMPONENT
18	MERCHANT FUNCTION
19	
20	CUSTOMER COMPONENTS
21	
22	HT - CUSTOMER
23	O.H. TRANSFORMERS - CUSTOMER
24	U.G. TRANSFORMERS - CUSTOMER
25	O.H. LINES CUSTOMER

Conclusions

- The Decision Tree Method is an important step towards achieving a uniform approach to standby and buyback rates in New York.
- The Decision Tree could be improved with increased guidance for certain cost categories and guardrails to ensure that edge cases aren't used to justify an allocation Decision.
- The Decision Tree will be unworkable unless ConEd, Orange & Rockland, and Central Hudson produce ECOS data at sufficient granularity by asset category and voltage. The current comingling of asset types precludes answering Decision Tree questions as intended and achieving a uniform approach for all NY utilities.

Notes

NY-BEST will have further comments regarding proposed time limited exemptions for injected power which are not discussed in these slides