VERMONT

State of Vermont Agency of Administration
Department of Taxes
133 State Street [phone] 802-828-2505
Montpelier, VT 05633-1401 [fax] 802-828-2701
www.tax.vermont.gov

Inputs and Assumptions for Electric Utility Assessment Model: Investor-Owned Electric Distribution (GMP)

The Department of Taxes has contracted with Utilities Appraisal Consultant, Brian D. Fogg, LLC, to establish utility values for electric transmission and distribution, as required under 32 V.S.A. § 4452. This document is intended to capture the specific methodology, including inputs and assumptions, for informational purposes only.

Inputs and Assumptions

1. **The following necessary data from the Continuing Property Records (CPRs) provided by the owner:**
    a. Year in Service/ Year of Install
    b. Accumulated Cost/ Original Cost
    c. FERC Account

Description of Distribution FERC Accounts	FERC
Structures and Improvements	361
Station Equipment	362
Storage Battery Equipment	363
Poles, Towers and Fixtures	364
Poles, Towers and Fixtures – Smart Assets	364.5
Overhead Conductors and Devices	365
Underground Conduit	366
Underground Conductors and Devices	367
Line Transformers	368
Pad Mounted Transformers	368a
Services	369
Services – Underground	369a
Meters	370
Meters – Smart Meters	370.1
Installations on Customer Premises	371
Street Lighting and Signal Systems	373

    d. Town/City/Municipality

e. Construction Work in Progress/CWIP (Currently not included in final assessment)
f. A description of the asset if available

Year in Service	"Accumulated Cost"	FERC Account Used	Description	Town
2008	$843,292	365	WIRE 2-4/0 AL BARE	VT Town

2. Handy Whitman Index

To calculate the factor that will be applied to the "Accumulated Cost/Original Cost";

a. July 1st Handy Whitman index number of "Year in Service/ Year of Install" for the FERC code of the asset (or available entry for that year when no specific July 1 data is present)
b. July 1 Handy Whitman index number of the year prior to the Valuation Year for the FERC Code of the asset (If Valuation year is 2024, use entry from July 1, 2023)
c. Divide the Entry for the year prior to the Valuation Year by the year prior to "Year in Service/ Year of Install" for your factor

Using the example above, a FERC 365 property with a Year in Service of 2008:

FERC Account 365

	Year	Handy Whitman Index	July 1 Handy Whitman Entry
Year in Service	2008	7/1/2008	743
Valuation Year	2024	7/1/2023	1403

Factor (1403 ÷ 743) = 1.89

3. Apply Factor for Replacement Cost New (RCN)

a. Multiply the "Accumulated Cost/ Original Cost" by the Factor

"Accumulated Cost"	Factor	Replacement Cost New
$843,292	**1.89**	**$1,592,380**

4. Actual Age of Assets and Useful Lives

a. Calculate the age of the Asset using the year prior to the Valuation Year (use 2023 for Valuation year of 2024)

2023 – 2008 = age of 15 years

b. The Useful Lives used in the model are provided below.

Description and Distribution FERC Accounts	FERC	Useful Lives
Structures and Improvements	361	**50**
Station Equipment	362	**50**
Storage Battery Equipment	363	**50**
Poles, Towers and Fixtures	364	**51**
Poles, Towers and Fixtures – Smart Assets	364.5	**17**
Overhead Conductors and Devices	365	**53**
Underground Conduit	366	**66**
Underground Conductors and Devices	367	**53**
Line Transformers	368	**48**
Pad Mounted Transformers	368a	**48**
Services	369	**44**
Services – Underground	369a	**55**
Meters	370	**22**
Meters – Smart Meters	370.1	**17**
Installations on Customer Premises	371	**19**
Street Lighting and Signal Systems	373	**29**

5. **Calculating Depreciation with a 20% Floor & 50% First Year Depreciation**
   a. Divide The Actual Age of the Asset by the Useful Life to get to the % Depreciation to the Bad. The inverse percentage is the Depreciation to the Good.

FERC Account 365

Actual Age (Years)	Useful Life (Years)	% Depreciation to the Bad	% Depreciation to the Good
15	53	28.3%	71.7%

   b. If an asset is old enough for the Depreciation to the Good to fall below 20%, it would remain at that floor of 20%.
   c. For an asset with a Year in Service/ Year of Install that is one year prior to the Valuation year (2023 for Valuation year of 2024), utilize 50% annual depreciation for the first year.

FERC Account 365 Installed in 2023 for Valuation Year 2024

Row	A	B
1	Useful Life FERC 365	53
2	Age of Asset in First Year	1
3	Annual % Depreciation to the Bad (B2 ÷ B1)	1.89%
4	50% Annual Depreciation to the Bad in First Year of Install (B3 × 50%)	0.94%
5	% Depreciation to the Good in First Year (1-B4)	99.06%

Calculating the Replacement Cost New Less Depreciation (RCNLD) by Applying Depreciation to the RCN

d. Multiply the RCN by the % Depreciation to the Good to get the RCNLD

FERC Account 365 Installed in 208 for Valuation Year 2024

A	B	C	D	E	F
Replacement Cost New (RCN)	**Actual Age (Years)**	**Useful Life (Years)**	**% Depreciation to the Bad (B ÷ C)**	**% Depreciation to the Good (I – D)**	**Replacement Cost New Less Depreciation (A × E)**
$1,592,380	15	53	28.3%	71.7%	$1,141,706

e. When the Year in Service/ Year of Install is one year prior to Valuation Year

FERC Account 365 Installed in 2023 for Valuation Year 2024

A	B	C	D	E	F	G
Replacement Cost New (RCN)	**Actual Age (Years)**	**Useful Life (Years)**	**% Depreciation to the Bad (B ÷ C)**	**50% Annual Depreciation to the Bad for First Year (D × 50%)**	**% Depreciation to the Good (I – E)**	**Replacement Cost New Less Depreciation (A × F)**
$1,592,380	1	53	1.9%	0.94%	99.06%	$1,577,358

f. When the Actual Age of an asset would drop the Depreciation to the Good below 20%

FERC Account 365 Installed in 1974 for Valuation Year 2024

A	B	C	D	E	F
Replacement Cost New (RCN)	**Actual Age (Years)**	**Useful Life (Years)**	**% Depreciation to the Bad (B ÷ C)**	**% Depreciation to the Good (if D > 80%, Use 20%)**	**Replacement Cost New Less Depreciation (A × E)**
$1,592,380	49	55	89.1%	20.0%	$318,476

6. Calculating the Value for Distribution Transformers & Regulators

a. Transformers & Regulators are valued on a per unit (kVA) basis at their original cost with no further factors or depreciation applied. The following table contains the breakdown of cost/kVA used.

Transformers

kVA	Cost New
1	$668
5	$263
7.5	$405
10	$518
15	$777
25	$885
30	$2,419
37.5	$1,277
45	$2,467
50	$1,274
75	$2,844
100	$2,232
112.5	$3,878
115	$43
150	$4,792
167	$2,815
200	$991
225	$7,412
250	$8,241
300	$9,480
333	$10,777
500	$14,839

Regulators

kVA	Cost New
167	$12,926
76	$7,908
114	$12,672
None	$13,320
150	$7,482
250	$15,512

Transformers & Regulators are valued at the average original cost with no factors applied and no further depreciation. Therefore, the assessed value for one 1kVA transformer would be $668.

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Definitions

The inputs and assumptions for the Electric Utility Assessment Model described above are intended to conform with the terms ”Mass Appraisal “ and “Mass Appraisal Model” as defined by The Dictionary of Real Estate Appraisal, 6th Edition, which are respectively :

mass appraisal. The process of valuing a universe of properties as of a given date using standard methodology, employing common data, and allowing for statistical testing. (USPAP, 2016-2017 ed.) Often associated with real property tax assessment valuation.

and

mass appraisal model. A mathematical model used to develop values for each property within a group or universe of properties.

Therefore, the Electric Utility Assessment Model itself, and any resulting community-by-community assessments are considered to be in compliance with USPAP Standards 5 and 6. Additionally, the Electric Utility Assessment Model itself, and any resulting community-by-community assessments are not intended to be USPAP Standard 1 and 2 appraisals and do not comply with USPAP Standards 1 and 2.

Disclaimer

The data and inputs described in this document are subject to change as annual adjustments are made to the model.