Matthew R. Bernier
ASSOCIATE GENERAL COUNSEL
Duke Energy Florida, LLC

June 1, 2023

VIA ELECTRONIC MAIL

Adam J. Teitzman, Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: *Duke Energy Florida, LLC's Petition for Approval of Revised Underground Residential Distribution Tariff Sheets;* Docket No. 20230043-EI

Dear Mr. Teitzman:

Please find attached for filing Duke Energy Florida, LLC's Response to Staff's First Data Request in the above-referenced Docket.

Thank you for your assistance in this matter. Please feel free to call me at (850) 521-1428 should you have any questions concerning this matter.

Respectfully,

/s/ Matthew R. Bernier

Matthew R. Bernier

MRB/vr
Attachment

cc: M. Barrett (MBarrett@PSC.STATE.FL.US)

Duke Energy Florida, LLC's Response to Staff's First Data Request re:
Petition for Approval of Revised Underground Residential Distribution Tariff Sheets

Docket No. 20230043-EI

General

1. Please refer to Illustration B in Exhibit D which provides a summary of proposed cost changes since the last update to the company's URD tariff sheets.

   A. Please discuss the reasons why the projected 2023 costs for overhead and underground construction material and labor have increased since 2020.

RESPONSE:
The electric utility industry has seen costs increase in material and labor, not unlike the same increases seen across all industries in recent years due to inflation. The 2023 cost changes are based on actual cost estimates using current material and labor data. DEF has seen the results of supply constraints in our industry which has led to price escalation in many materials. For example, 3" conduit increased 158% and upright pedestals 150%. Labor costs have increased due to labor availability and the higher demand for these skill sets. DEF and peer utilities are competing for the same resources with commercial, residential, and even road construction needed by state and local communities. DEF manages a bid process to secure the best market rates available at time of bid.

   B. As reflected in Illustration B in Exhibit D, please explain why projected 2023 material and labor costs for underground construction appears to have escalated at a higher rate than projected 2023 costs for overhead construction.

RESPONSE:
DEF contracts our underground labor work such as boring, trenching, and underground equipment installation. The market for the skillset of these crews, available labor, fuel, and equipment has caused our contract partners to increase per unit rates for this type work. DEF also hires contract crews for some overhead work and these crews have also experienced some upward costs although not as significant as underground costs. Our overhead labor costs are balanced with DEF native crews. The resulting blended rate for overhead labor has experienced a lower increase as compared to our underground labor since our last filing in 2020. DEF has observed nearly all prices have increased over the last three year with some higher demand materials escalating more quickly than others. Much of the material increases have impacted underground related materials more so than overhead. DEF captured this impact in Exhibit D, Illustration B where underground materials increased 82% as compared to 53% for overhead and underground labor increased 53% versus 20% for overhead.

2. DEF's letter accompanying its petition in this case states that the company's filing is made pursuant to Rule 25-6.078, Florida Administrative Code, which was amended in 2020. One of the changes in the 2020 amendment was to update a form incorporated in the cited rule (Form PSC/ECR 13E). The replacement form, Form PSC 1031, can be accessed here: http://www.flrules.org/Gateway/reference.asp?No=Ref-12425.

   A. Please submit populated Schedule 1's and other schedules as necessary to comply with the current version of Form PSC 1031.

   RESPONSE:
   Please see "DR1 #2 A&B – Replacement Schedules to comply with Form PSC 1031.pdf" attached.

   B. Please submit replacement sheets for any pages that include references to the non-current form (Form PSC/ECR 13E).

   RESPONSE:
   Please see "DR1 #2 A&B – Replacement Schedules to comply with Form PSC 1031.pdf" attached.

URD

3. Proposed Revised URD Tariff Sheet No. 4.113 at (2)(a) indicates that for subdivisions with a density of six (6) or more dwelling units per acre, the proposed charge for Duke provided and installed conduit is $332 per dwelling unit. Please explain why this charge *is applicable* for subdivisions with a density of six (6) or more dwelling units per acre, but *is not applicable* for subdivisions with a lower density per acre or higher density (ganged meter pedestals).

   RESPONSE:
   DEF ran specific cost estimates relative to the sample subdivision templates provided by the Florida Public Service Commission. DEF used the same design standards and adhered to the Florida Administrative Code and DEF tariff as it would for actual subdivisions for DEF customers. DEF had adjusted the High Density design in our 2019 filing to remove any back lot or side lot installations that were not adjacent to roadways and not open to truck as per the Florida Administrative Code (Rule 25-6.0341, F.A.C., Location of the Utility's Electric Distribution Facilities). This resulted in a higher underground costs per lot for high density single service. The Low Density sample subdivision design does not have this same scenario.

4. Please answer the following regarding information on the proposed Revised URD Tariff Sheet No. 4.115:

   A. For service lateral up to 80 feet, the charge for "Duke supplied and installed conduit" is proposed to change from $641 per applicant to $983 per applicant, an increase of about

53 percent. Please explain the primary and contributing factors for the differences in current and proposed costs.

RESPONSE:
As described above in Question 1, the primary contributing factor is that DEF has seen a greater escalation in some underground material and labor compared to the overhead costs. When comparing 2020 underground cost of $1128 versus $1445 in 2023, the differential in underground was $317 or 28%. The equivalent overhead costs were $487 in 2020 and $462 in 2023 realizing a net decrease in overhead of $25 or 5%. The net result was a differential increase of $342 or 53% as compared to the 2020 filing.

B. Please explain why this proposed charge *is applicable* for service lateral up to 80 feet, but *is not applicable* for service laterals over 80 feet in length, up to 300 feet in length?

RESPONSE:
A customer requesting a new underground service with a distance greater than 80' will be charged the standard $983 (for 0 to 80'). The customer will not have to pay any additional costs due to the differential for additional footage being zero. Overhead cost for additional footage continues to remain higher cost per foot as compared to equivalent underground costs

C. For service lateral up to 80 feet, the charge for "Customer supplied and installed conduit" is proposed to change for $339 per applicant to $619 per applicant, an increase of about 83 percent. Please explain the primary and contributing factors for the differences in current and proposed costs.

RESPONSE:
As describe above in Question 1, the primary contributing factor is that DEF has seen a greater escalation in some underground material and labor compared to the overhead costs. When comparing 2020 underground cost of $826 versus $1081 in 2023, the differential in underground was $255 or 31%. The equivalent overhead costs were $487 in 2020 and $462 in 2023 realizing a net decrease in overhead of $25 or 5%. The net result was a differential increase of $280 or 83% as compared to the 2020 filing.

D. Please explain why this proposed charge *is applicable* for service lateral up to 80 feet, but *is not applicable* for service laterals over 80 feet in length, up to 300 feet in length?

RESPONSE:
A customer requesting a new underground service with a distance greater than 80' will be charged the standard $619 (for 0 to 80'). The customer will not have to pay any additional costs due to the differential for additional footage being zero. Overhead cost for additional footage continues to remain higher cost per foot as compared to equivalent underground costs

Data Request items 5 and 6 pertain to data entries in DEF's URD petition submitted in the instant docket (Docket Number 20230043-EI) and similar data entries appearing in the company's 2020 URD petition (Docket Number 20200110-EI, or "2020 docket").

5. In the instant docket, Exhibit C, Development of Updated Costs, shows that the labor charges in Schedules 2, 3, 6, 7, 9, and 10 include a Design Engineering and Project Management assessment of 17.3 percent of labor. In the 2020 docket, the Design Engineering and Project Management assessment in these Schedules was 25.09 percent of labor. Please explain why this assessment has declined over 31 percent since 2020 (from 25.09 percent in 2020 to 17.3 percent in 2023).

   RESPONSE:
   The percentage for Design Engineering and Project Management is determined by summing the historical costs for these expenses and comparing to our actual construction labor expenses for the year. Design Engineering and Project Management actual costs have not escalated as quickly as the construction labor costs.

6. In the instant docket, Exhibit C, the NPV Life Cycle Costs (per lot differential) for the High Density – IND design are shown below:

	Overhead	Underground
Feet of Line	6,296	8,987
Miles of Line	1.19	1.70

   In the 2020 docket, Exhibit C, the NPV Life Cycle Costs (per lot differential) for the High Density – IND design are shown below:

	Overhead	Underground
Feet of Line	4,621	6,684
Miles of Line	0.88	1.27

   A. Please explain why the feet and miles of line are higher in the Overhead instant case compared to the 2020 docket.

   RESPONSE:
   DEF has added a second phase of overhead line in the overhead example as outlined in paragraph 1 of Exhibit D. This resulted in an additional 1675 feet of overhead line.

   B. Please explain why the feet and miles of line are higher in the Underground instant case compared to the 2020 docket.

   RESPONSE:
   While compiling DEF's submittal, it was discovered the value of 6684 feet for the underground value was the previous value before the 2019 redesign. The value was updated to reflect the true and current value of 8987 feet for underground primary.

C. Please provide an electronic spreadsheet file (Excel or similar) with cell formulas intact and unlocked to support the NPV Life Cycle Costs (per lot differential) that are shown for the High Density – IND design in the instant docket.

RESPONSE:
Please see "Response to DR1 #6C.xlsx" attached.

Design

8. As pertains to residential subdivision design reflected in Tariff Section 11.03, Exhibit D of the Company's Petition states "Design changes made include changing pole class size to a larger pole diameter and, in our High-Density design, adding second phase to allow for resiliency not included in the previous design."

A. Please describe the different components of a second phase.

RESPONSE:
DEF added taller poles, additional guying, additional overhead wire and the additional upstream protective device.

B. Please elaborate on how adding the second phase will allow for a greater level of resiliency.

RESPONSE:
The previous design had all 176 lots on a single phase line. Although the design was feasible, it did not allow for more recent grid demands such as electric vehicles, solar interconnections and water heating options that add instantaneous loading. Splitting the 176 customers into two phases reduces the exposure of an outage to any one customer. The additional phase meets our current design and loading standards

C. What are the specific costs of adding a second phase?

RESPONSE:
The overhead design cost increase is $25,671.89 or $145.86 per lot.

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3. Rule 25-6.078(3), F.A.C., requires DEF to file on or before October 15 of each year with the Commission Clerk Form PSC 1031, Schedule 1, using current material and labor costs. If the cost differential as calculated in Schedule 1 varies from the Commission-approved differential by plus or minus 10 percent or more, the utility shall file a written policy and supporting data and analyses as prescribed in subsections (1), (4) and (5) of this rule on or before April 1 of the following year; however, each utility shall file a written policy and supporting data and analyses at least once every 3 years. Consistent with the ten percent plus or minus filing requirement, DEF is filing its revised URD tariff sheets for Commission approval.

4. The updated URD charges shown on the revised tariff sheets contained in Exhibit A have been calculated in accordance with the provisions of Rule 25-6.078, F.A.C. Exhibit C includes schedules from Form PSC 1031, *Overhead/Underground Residential Differential Cost Data*, which provides the underlying data and analyses supporting DEF's proposed URD charges, as specified in Rule 25-6.078, F.A.C.

Exhibit C

DEVELOPMENT OF UPDATED COSTS

Schedules from Form PSC 1031
And Detailed Cost Support

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD/UNDERGROUND RESIDENTIAL DIFFERENTIAL COST DATA
DUKE TRENCH AND INSTALL CONDUIT

Low Density 210 Lot Subdivision
Cost per Service Lateral

ITEM	OVERHEAD	UNDERGROUND	DIFFERENTIAL
Labor	1,951	1,974	23
Material	798	1,480	682
TOTAL	2,749	3,454	705
Net Present Value (NPV) Operational Cost			(741)
TOTAL Including NPV Operational Cost			(36)

The differential cost has changed by **96.3%**

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD MATERIAL AND LABOR
DUKE TRENCH AND INSTALL CONDUIT

Low Density 210 Lot Subdivision
Cost per Service Lateral

ITEM	MATERIAL	LABOR	TOTAL
Service(2)	89.14	198.07	287.22
Primary	159.88	540.50	700.38
Secondary	95.32	219.79	315.11
Initial Tree Trim	0.00	0.00	0.00
Poles	113.92	347.58	461.50
Transformers	223.84	83.00	306.85
Sub-Total	682.10	1,388.95	2,071.05
Stores Handling(1,3)	115.96	0.00	115.96
Sub-Total	798.06	1,388.95	2,187.01
Engineering(4)	0.00	239.80	239.80
Supervision (5)	0.00	321.79	321.79
Fleet (6)	0.00	166.40	166.40
TOTAL	798.06	1,950.54	2,748.60

1-Includes Sales Tax.
2-Meters not included - overhead and underground cost is the same.
3-10% adders for stores plus 7% sales tax:
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6-Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

UNDERGROUND MATERIAL AND LABOR
DUKE TRENCH AND INSTALL CONDUIT

Low Density 210 Lot Subdivision
Cost per Service Lateral

ITEM	MATERIAL	LABOR	TOTAL
Service (2)	167.36	164.13	331.49
Primary	373.85	236.92	610.77
Secondary	521.47	392.10	913.57
Transformers	202.54	21.98	224.52
TRENCHING:			
Prim. & Secondary	0.00	234.15	234.15
Service	0.00	356.22	356.22
Sub-Total	1,265.21	1,405.50	2,670.72
Stores Handling(1,3)	215.09	0.00	215.09
Sub-Total	1,480.30	1,405.50	2,885.80
Engineering(4)	0.00	242.66	242.66
Supervision (5)	0.00	325.63	325.63
Fleet (6)	0.00	168.38	168.38
TOTAL	1,480.30	1,973.79	3,454.09

1-Includes Sales Tax.
2-Meters not included - overhead and underground cost is the same.
3-10% adders for stores plus 7% sales tax:
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6-Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD/UNDERGROUND RESIDENTIAL DIFFERENTIAL COST DATA
DUKE TRENCH AND INSTALL CONDUIT

High Density 176 Lot Subdivision
Cost per Service Lateral

ITEM	OVERHEAD	UNDERGROUND	DIFFERENTIAL
Labor	1,369	1,675	306
Material	752	1,328	576
TOTAL	2,121	3,003	882
Net Present Value (NPV) Operational Cost			(550)
TOTAL Including NPV Operational Cost			332

The differential cost has changed by **325.9%**

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD MATERIAL AND LABOR
DUKE TRENCH AND INSTALL CONDUIT

High Density 176 Lot Subdivision
Cost per Service Lateral

ITEM	MATERIAL	LABOR	TOTAL
Service(2)	41.37	191.40	232.76
Primary	146.68	267.88	414.56
Secondary	78.95	144.62	223.57
Initial Tree Trim	0.00	0.00	0.00
Poles	184.25	292.38	476.63
Transformers	191.84	78.62	270.46
Sub-Total	643.09	974.90	1617.98
Stores Handling(1,3)	109.33	0.00	109.33
Sub-Total	752.41	974.90	1727.31
Engineering (4)	0.00	168.32	168.32
Supervision (5)	0.00	225.86	225.86
Fleet (6)	0.00	116.79	116.79
TOTAL	752.41	1369.07	2121.49

1-Includes Sales Tax.
2-Meters not included - overhead and underground cost is the same.
3-Stores - 10% adders for stores plus 7% sales tax
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6 - Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

UNDERGROUND MATERIAL AND LABOR
DUKE TRENCH AND INSTALL CONDUIT

High Density 176 Lot Subdivision
Cost per Service Lateral

ITEM	MATERIAL	LABOR	TOTAL
Service (2)	173.19	47.99	221.18
Primary	245.55	184.02	429.57
Secondary	417.23	291.49	708.72
Transformers	299.11	33.94	333.05
TRENCHING:			
Prim. & Secondary	0.00	279.38	279.38
Service	0.00	356.22	356.22
Sub-Total	1135.08	1193.04	2328.13
Stores Handling(1,3)	192.96	0.00	192.96
Sub-Total	1328.05	1193.04	2521.09
Engineering (4)	0.00	205.98	205.98
Supervision (5)	0.00	276.40	276.40
Fleet (6)	0.00	142.93	142.93
TOTAL	1328.05	1675.43	3,003.47

1-Includes Sales Tax.
2-Meters not included - overhead and underground cost is the same.
3-Stores - 10% adders for stores plus 7% sales tax
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6 - Fleet - 12% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD/UNDERGROUND RESIDENTIAL DIFFERENTIAL COST DATA
DUKE TRENCH AND INSTALL CONDUIT

High Density 176 Lot Subdivision - Ganged Meters
Cost per Meter

ITEM	OVERHEAD	UNDERGROUND	DIFFERENTIAL
Labor	1,023	643	(380)
Material	493	562	69
TOTAL	1,516	1,205	(311)
Net Present Value (NPV) Operational Cost			(409)
TOTAL Including NPV Operational Cost			(720)

The differential cost has changed by **28.6%**

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD MATERIAL AND LABOR
DUKE TRENCH AND INSTALL CONDUIT

High Density 176 Lot Subdivision - Ganged Meters
Cost per Meter

ITEM	MATERIAL	LABOR	TOTAL
Service(2)	28.71	68.71	97.43
Primary	89.89	224.53	314.42
Secondary	64.20	166.31	230.51
Initial Tree Trim	0.00	0.00	0.00
Poles	63.39	193.16	256.55
Transformers	175.28	75.42	250.70
Sub-Total	421.48	728.13	1149.61
Stores Handling(1,3)	71.65	0.00	71.65
Sub-Total	493.13	728.13	1221.26
Engineering(4)	0.00	125.71	125.71
Supervision (5)	0.00	168.69	168.69
Fleet (6)	0.00	87.23	87.23
TOTAL	493.13	1022.54	1515.67

1-Includes Sales Tax.
2-Meters not included - meter cost is the same for overhead and underground
3-10% adders for stores plus 7% sales tax:
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6 - Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

UNDERGROUND MATERIAL AND LABOR
DUKE TRENCH AND INSTALL CONDUIT

High Density 176 Lot Subdivision - Ganged Meters
Cost per Meter

ITEM	MATERIAL	LABOR	TOTAL
Service (2)	35.96	43.07	79.02
Primary	142.21	104.13	246.33
Secondary	160.43	146.34	306.77
Transformers	142.18	15.43	157.60
TRENCHING:			
Prim. & Secondary	0.00	71.86	71.86
Service	0.00	77.23	77.23
Sub-Total	480.77	458.05	938.82
Stores Handling(1,3)	81.73	0.00	81.73
Sub-Total	562.50	458.05	1,020.55
Engineering(4)	0.00	79.08	79.08
Supervision (5)	0.00	106.12	106.12
Fleet (6)	0.00	54.87	54.87
TOTAL	562.50	643.25	1,205.75

1-Includes Sales Tax.
2-Meters not included - meter cost is the same for overhead and underground
3-10% adders for stores plus 7% sales tax:
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6 - Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD/UNDERGROUND RESIDENTIAL DIFFERENTIAL COST DATA
CUSTOMER TRENCH AND INSTALL MAINLINE CONDUIT

Low Density 210 Lot Subdivision
Cost per Service Lateral

ITEM	OVERHEAD	UNDERGROUND	DIFFERENTIAL
Labor	1,951	1,392	(559)
Material	798	950	152
TOTAL	2,749	2,342	(407)
Net Present Value (NPV) Operational Cost			(741)
TOTAL Including NPV Operational Cost			(1,148)

The differential cost has changed by **29.9%**

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD MATERIAL AND LABOR
CUSTOMER TRENCH AND INSTALL MAINLINE CONDUIT

Low Density 210 Lot Subdivision
Cost per Service Lateral

ITEM	MATERIAL	LABOR	TOTAL
Service(2)	89.14	198.07	287.22
Primary	159.88	540.50	700.38
Secondary	95.32	219.79	315.11
Initial Tree Trim	0.00	0.00	0.00
Poles	113.92	347.58	461.50
Transformers	223.84	83.00	306.85
Sub-Total	682.10	1,388.95	2,071.05
Stores Handling(1,3)	115.96	0.00	115.96
Sub-Total	798.06	1,388.95	2,187.01
Engineering(4)	0.00	239.80	239.80
Supervision (5)	0.00	321.79	321.79
Fleet (6)	0.00	166.40	166.40
TOTAL	798.06	1,950.54	2,748.60

1-Includes Sales Tax.
2-Meters not included - overhead and underground cost is the same.
3-10% adders for stores plus 7% sales tax:
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6-Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

UNDERGROUND MATERIAL AND LABOR
CUSTOMER TRENCH AND INSTALL MAINLINE CONDUIT

Low Density 210 Lot Subdivision
Cost per Service Lateral

ITEM	MATERIAL	LABOR	TOTAL
Service (2)	167.36	164.13	331.49
Primary	186.13	149.59	335.72
Secondary	255.59	298.97	554.56
Transformers	202.54	21.98	224.52
TRENCHING:			
Prim. & Secondary	0.00	0.00	0.00
Service	0.00	356.22	356.22
Sub-Total	811.62	990.88	1,802.51
Stores Handling(1,3)	137.98	0.00	137.98
Sub-Total	949.60	990.88	1,940.48
Engineering(4)	0.00	171.08	171.08
Supervision (5)	0.00	229.57	229.57
Fleet (6)	0.00	118.71	118.71
TOTAL	949.60	1,391.53	2,341.13

1-Includes Sales Tax.
2-Meters not included - overhead and underground cost is the same.
3-10% adders for stores plus 7% sales tax:
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6-Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD/UNDERGROUND RESIDENTIAL DIFFERENTIAL COST DATA
CUSTOMER TRENCH AND INSTALL MAINLINE CONDUIT

High Density 176 Lot Subdivision
Cost per Service Lateral

ITEM	OVERHEAD	UNDERGROUND	DIFFERENTIAL
Labor	1,369	1,266	(103)
Material	752	948	196
TOTAL	2,121	2,214	93
Net Present Value (NPV) Operational Cost			(550)
TOTAL Including NPV Operational Cost			(457)

The differential cost has changed by **32.2%**

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD MATERIAL AND LABOR
CUSTOMER TRENCH AND INSTALL MAINLINE CONDUIT

High Density 176 Lot Subdivision
Cost per Service Lateral

ITEM	MATERIAL	LABOR	TOTAL
Service(2)	41.37	191.40	232.76
Primary	146.68	267.88	414.56
Secondary	78.95	144.62	223.57
Initial Tree Trim	0.00	0.00	0.00
Poles	184.25	292.38	476.63
Transformers	191.84	78.62	270.46
Sub-Total	643.09	974.90	1617.98
Stores Handling(1,3)	109.33	0.00	109.33
Sub-Total	752.41	974.90	1727.31
Engineering (4)	0.00	168.32	168.32
Supervision (5)	0.00	225.86	225.86
Fleet (6)	0.00	116.79	116.79
TOTAL	752.41	1369.07	2121.49

1-Includes Sales Tax.
2-Meters not included - overhead and underground cost is the same.
3-Stores - 10% adders for stores plus 7% sales tax
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6 - Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

UNDERGROUND MATERIAL AND LABOR
CUSTOMER TRENCH AND INSTALL MAINLINE CONDUIT

High Density 176 Lot Subdivision
Cost per Service Lateral

ITEM	MATERIAL	LABOR	TOTAL
Service (2)	177.87	164.12	342.00
Primary	132.26	133.87	266.13
Secondary	201.24	213.46	414.70
Transformers	299.11	33.94	333.05
TRENCHING:			
Prim. & Secondary	0.00	0.00	0.00
Service	0.00	356.22	356.22
Sub-Total	810.49	901.61	1712.10
Stores Handling(1,3)	137.78	0.00	137.78
Sub-Total	948.27	901.61	1849.88
Engineering (4)	0.00	155.66	155.66
Supervision (5)	0.00	208.89	208.89
Fleet (6)	0.00	108.01	108.01
TOTAL	948.27	1266.16	2,214.43

1-Includes Sales Tax.
2-Meters not included - overhead and underground cost is the same.
3-Stores - 10% adders for stores plus 7% sales tax
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6 - Fleet - 12% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD/UNDERGROUND RESIDENTIAL DIFFERENTIAL COST DATA
CUSTOMER TRENCH AND INSTALL MAINLINE CONDUIT

High Density 176 Lot Subdivision - Ganged Meters
Cost per Meter

ITEM	OVERHEAD	UNDERGROUND	DIFFERENTIAL
Labor	1,023	455	(568)
Material	493	486	(7)
TOTAL	1,516	941	(575)
Net Present Value (NPV) Operational Cost			(409)
TOTAL Including NPV Operational Cost			(984)

The differential cost has changed by **15.8%**

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD MATERIAL AND LABOR
CUSTOMER TRENCH AND INSTALL MAINLINE CONDUIT

High Density 176 Lot Subdivision - Ganged Meters
Cost per Meter

ITEM	MATERIAL	LABOR	TOTAL
Service(2)	28.71	68.71	97.43
Primary	89.89	224.53	314.42
Secondary	64.20	166.31	230.51
Initial Tree Trim	0.00	0.00	0.00
Poles	63.39	193.16	256.55
Transformers	175.28	75.42	250.70
Sub-Total	421.48	728.13	1149.61
Stores Handling(1,3)	71.65	0.00	71.65
Sub-Total	493.13	728.13	1221.26
Engineering(4)	0.00	125.71	125.71
Supervision (5)	0.00	168.69	168.69
Fleet (6)	0.00	87.23	87.23
TOTAL	493.13	1022.54	1515.67

1-Includes Sales Tax.
2-Meters not included - meter cost is the same for overhead and underground
3-10% adders for stores plus 7% sales tax:
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6 - Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

UNDERGROUND MATERIAL AND LABOR
CUSTOMER TRENCH AND INSTALL MAINLINE CONDUIT

High Density 176 Lot Subdivision - Ganged Meters
Cost per Meter

ITEM	MATERIAL	LABOR	TOTAL
Service (2)	35.96	43.07	79.02
Primary	71.27	76.42	147.69
Secondary	75.95	104.36	180.32
Transformers	231.93	23.14	255.07
TRENCHING:			
Prim. & Secondary	0.00	0.00	0.00
Service	0.00	77.23	77.23
Sub-Total	415.11	324.22	739.33
Stores Handling(1,3)	70.57	0.00	70.57
Sub-Total	485.68	324.22	809.90
Engineering(4)	0.00	55.98	55.98
Supervision (5)	0.00	75.12	75.12
Fleet (6)	0.00	38.84	38.84
TOTAL	485.68	455.31	940.99

1-Includes Sales Tax.
2-Meters not included - meter cost is the same for overhead and underground
3-10% adders for stores plus 7% sales tax:
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6 - Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD/UNDERGROUND RESIDENTIAL DIFFERENTIAL COST DATA
CUSTOMER TRENCH AND INSTALL CONDUIT

Low Density 210 Lot Subdivision
Cost per Service Lateral

ITEM	OVERHEAD	UNDERGROUND	DIFFERENTIAL
Labor	1,951	1,029	(922)
Material	798	812	14
TOTAL	2,749	1,841	(908)
Net Present Value (NPV) Operational Cost			(741)
TOTAL Including NPV Operational Cost			(1,649)

The differential cost has changed by **0.6%**

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD MATERIAL AND LABOR
CUSTOMER TRENCH AND INSTALL CONDUIT

Low Density 210 Lot Subdivision
Cost per Service Lateral

ITEM	MATERIAL	LABOR	TOTAL
Service(2)	89.14	198.07	287.22
Primary	159.88	540.50	700.38
Secondary	95.32	219.79	315.11
Initial Tree Trim	0.00	0.00	0.00
Poles	113.92	347.58	461.50
Transformers	223.84	83.00	306.85
Sub-Total	682.10	1,388.95	2,071.05
Stores Handling(1,3)	115.96	0.00	115.96
Sub-Total	798.06	1,388.95	2,187.01
Engineering(4)	0.00	239.80	239.80
Supervision (5)	0.00	321.79	321.79
Fleet (6)	0.00	166.40	166.40
TOTAL	798.06	1,950.54	2,748.60

1-Includes Sales Tax.
2-Meters not included - overhead and underground cost is the same.
3-10% adders for stores plus 7% sales tax:
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6-Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

UNDERGROUND MATERIAL AND LABOR
CUSTOMER TRENCH AND INSTALL CONDUIT

Low Density 210 Lot Subdivision
Cost per Service Lateral

ITEM	MATERIAL	LABOR	TOTAL
Service (2)	53.82	262.12	315.94
Primary	186.13	149.59	335.72
Secondary	255.59	298.97	554.56
Transformers	198.27	21.98	220.25
TRENCHING:			
Prim. & Secondary	0.00	0.00	0.00
Service	0.00	0.00	0.00
Sub-Total	693.82	732.65	1,426.47
Stores Handling(1,3)	117.95	0.00	117.95
Sub-Total	811.77	732.65	1,544.42
Engineering(4)	0.00	126.49	126.49
Supervision (5)	0.00	169.74	169.74
Fleet (6)	0.00	87.77	87.77
TOTAL	811.77	1,028.89	1,840.65

1-Includes Sales Tax.
2-Meters not included - overhead and underground cost is the same.
3-10% adders for stores plus 7% sales tax:
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6-Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD/UNDERGROUND RESIDENTIAL DIFFERENTIAL COST DATA
CUSTOMER TRENCH AND INSTALL CONDUIT

High Density 176 Lot Subdivision
Cost per Service Lateral

ITEM	OVERHEAD	UNDERGROUND	DIFFERENTIAL
Labor	1,369	1,109	(260)
Material	752	818	66
TOTAL	2,121	1,927	(194)
Net Present Value (NPV) Operational Cost			(550)
TOTAL Including NPV Operational Cost			(744)

The differential cost has changed by **12.8%**

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD MATERIAL AND LABOR
CUSTOMER TRENCH AND INSTALL CONDUIT

High Density 176 Lot Subdivision
Cost per Service Lateral

ITEM	MATERIAL	LABOR	TOTAL
Service(2)	41.37	191.40	232.76
Primary	146.68	267.88	414.56
Secondary	78.95	144.62	223.57
Initial Tree Trim	0.00	0.00	0.00
Poles	184.25	292.38	476.63
Transformers	191.84	78.62	270.46
Sub-Total	643.09	974.90	1617.98
Stores Handling(1,3)	109.33	0.00	109.33
Sub-Total	752.41	974.90	1727.31
Engineering (4)	0.00	168.32	168.32
Supervision (5)	0.00	225.86	225.86
Fleet (6)	0.00	116.79	116.79
TOTAL	752.41	1369.07	2121.49

1-Includes Sales Tax.
2-Meters not included - overhead and underground cost is the same.
3-Stores - 10% adders for stores plus 7% sales tax
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6 - Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

UNDERGROUND MATERIAL AND LABOR
CUSTOMER TRENCH AND INSTALL CONDUIT

High Density 176 Lot Subdivision
Cost per Service Lateral

ITEM	MATERIAL	LABOR	TOTAL
Service (2)	66.69	408.63	475.32
Primary	132.26	133.87	266.13
Secondary	201.24	213.46	414.70
Transformers	299.11	33.94	333.05
TRENCHING:			
Prim. & Secondary	0.00	0.00	0.00
Service	0.00	0.00	0.00
Sub-Total	699.30	789.90	1489.20
Stores Handling(1,3)	118.88	0.00	118.88
Sub-Total	818.18	789.90	1608.09
Engineering (4)	0.00	136.38	136.38
Supervision (5)	0.00	183.00	183.00
Fleet (6)	0.00	94.63	94.63
TOTAL	818.18	1109.29	1,927.47

1-Includes Sales Tax.
2-Meters not included - overhead and underground cost is the same.
3-Stores - 10% adders for stores plus 7% sales tax
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6 - Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD/UNDERGROUND RESIDENTIAL DIFFERENTIAL COST DATA
CUSTOMER TRENCH AND INSTALL CONDUIT

High Density 176 Lot Subdivision - Ganged Meters
Cost per Meter

ITEM	OVERHEAD	UNDERGROUND	DIFFERENTIAL
Labor	1,023	410	(613)
Material	493	458	(35)
TOTAL	1,516	868	(648)
Net Present Value (NPV) Operational Cost			(409)
TOTAL Including NPV Operational Cost			(1,057)

The differential cost has changed by **12.5%**

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD MATERIAL AND LABOR
CUSTOMER TRENCH AND INSTALL CONDUIT

High Density 176 Lot Subdivision - Ganged Meters
Cost per Meter

ITEM	MATERIAL	LABOR	TOTAL
Service(2)	28.71	68.71	97.43
Primary	89.89	224.53	314.42
Secondary	64.20	166.31	230.51
Initial Tree Trim	0.00	0.00	0.00
Poles	63.39	193.16	256.55
Transformers	175.28	75.42	250.70
Sub-Total	421.48	728.13	1149.61
Stores Handling(1,3)	71.65	0.00	71.65
Sub-Total	493.13	728.13	1221.26
Engineering(4)	0.00	125.71	125.71
Supervision (5)	0.00	168.69	168.69
Fleet (6)	0.00	87.23	87.23
TOTAL	493.13	1022.54	1515.67

1-Includes Sales Tax.
2-Meters not included - meter cost is the same for overhead and underground
3-10% adders for stores plus 7% sales tax:
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6 - Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

UNDERGROUND MATERIAL AND LABOR
CUSTOMER TRENCH AND INSTALL CONDUIT

High Density 176 Lot Subdivision - Ganged Meters
Cost per Meter

ITEM	MATERIAL	LABOR	TOTAL
Service (2)	11.95	88.23	100.18
Primary	71.27	76.42	147.69
Secondary	75.95	104.36	180.32
Transformers	231.93	23.14	255.07
TRENCHING:			
Prim. & Secondary	0.00	0.00	0.00
Service	0.00	0.00	0.00
Sub-Total	391.10	292.16	683.26
Stores Handling(1,3)	66.49	0.00	66.49
Sub-Total	457.59	292.16	749.75
Engineering(4)	0.00	50.44	50.44
Supervision (5)	0.00	67.69	67.69
Fleet (6)	0.00	35.00	35.00
TOTAL	457.59	410.29	867.88

1-Includes Sales Tax.
2-Meters not included - meter cost is the same for overhead and underground
3-10% adders for stores plus 7% sales tax:
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6 - Fleet - 12.0% of labor (cost is imbedded in labor for material)

Parameter Input

3/3/2023

3-10% adders for stores plus 7% sales tax:
0.17
4-Design and Project Management - 17.3% of labor
0.17265
5-Indirects - including management and supervision - 23.2% of labor
0.23167
6-Fleet - 12.0% of labor (cost is imbedded in labor for material)
0.1198

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD/UNDERGROUND RESIDENTIAL DIFFERENTIAL COST DATA
DUKE TRENCH AND INSTALL CONDUIT

High Density 176 Lot Subdivision
Cost per Service Lateral

ITEM	OVERHEAD	UNDERGROUND	DIFFERENTIAL
Labor	1,369	1,675	306
Material	752	1,328	576
TOTAL	2,121	3,003	882
Net Present Value (NPV) Operational Cost			(550)
TOTAL Including NPV Operational Cost			332

The differential cost has changed by **325.9%**

DUKE ENERGY FLORIDA
OVERHEAD/UNDERGROUND RESIDENTIAL COST ESTIMATE
DUKE TRENCH AND INSTALL CONDUIT

OVERHEAD vs. UNDERGROUND SUMMARY SHEET

SCHEDULE NO. 5

HIGH DENSITY 176 LOT SUBDIVISION
COMPANY OWNED SERVICE LATERALS
COST PER SERVICE LATERAL

Revised 3/6/2020

ITEM	OVERHEAD	UNDERGROUND	DIFFERENTIAL
Labor	1249	1300	51
Material	393	678	285
SUB TOTAL	1642	1978	336
NPV of Life Cycle Operational Cost Including Storm Restoration and Pole Attachment Revenue			(483)
Total Including NPV of Life Cycle Cost			(147)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

OVERHEAD MATERIAL AND LABOR
DUKE TRENCH AND INSTALL CONDUIT

High Density 176 Lot Subdivision
Cost per Service Lateral

ITEM	MATERIAL	LABOR	TOTAL
Service(2)	41.37	191.40	232.76
Primary	146.68	267.88	414.56
Secondary	78.95	144.62	223.57
Initial Tree Trim	0.00	0.00	0.00
Poles	184.25	292.38	476.63
Transformers	191.84	78.62	270.46
Sub-Total	643.09	974.90	1617.98
Stores Handling(1,3)	109.33	0.00	109.33
Sub-Total	752.41	974.90	1727.31
Engineering (4)	0.00	168.32	168.32
Supervision (5)	0.00	225.86	225.86
Fleet (6)	0.00	116.79	116.79
TOTAL	752.41	1369.07	2121.49

1-Includes Sales Tax.
2-Meters not included - overhead and underground cost is the same.
3-Stores - 10% adders for stores plus 7% sales tax
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6 - Fleet - 12.0% of labor (cost is imbedded in labor for material)

Utility Name: DUKE ENERGY FLORIDA **Date: 3/3/2023**

UNDERGROUND MATERIAL AND LABOR
DUKE TRENCH AND INSTALL CONDUIT

High Density 176 Lot Subdivision
Cost per Service Lateral

ITEM	MATERIAL	LABOR	TOTAL
Service (2)	173.19	47.99	221.18
Primary	245.55	184.02	429.57
Secondary	417.23	291.49	708.72
Transformers	299.11	33.94	333.05
TRENCHING:			
Prim. & Secondary	0.00	279.38	279.38
Service	0.00	356.22	356.22
Sub-Total	1135.08	1193.04	2328.13
Stores Handling(1,3)	192.96	0.00	192.96
Sub-Total	1328.05	1193.04	2521.09
Engineering (4)	0.00	205.98	205.98
Supervision (5)	0.00	276.40	276.40
Fleet (6)	0.00	142.93	142.93
TOTAL	1328.05	1675.43	3,003.47

1-Includes Sales Tax.
2-Meters not included - overhead and underground cost is the same.
3-Stores - 10% adders for stores plus 7% sales tax
4-Design and Project Management - 17.3% of labor
5-Indirects - including management and supervision - 23.2% of labor
6 - Fleet - 12% of labor (cost is imbedded in labor for material)

HI DENSITY INDIVIDUAL - 176 LOTS

Duke Energy Florida
Actuals for 5 Year Period of 2018-2022
Summary of NPV Life Cycle Costs per mile for Overhead and Underground Distribution
Including Storm Costs and Pole Attachment Revenues

	Including Storm	Excluding Storm	Storm
5 year average OH Unit Costs in 2022 Dollars - Annual	$ 12,960	$ 5,747	$ 7,213
5 year average UG Unit Costs in 2022 Dollars - Annual	$ 5,037	$ 4,581	$ 456
Differential in 2022 Dollars - OH more (less) than UG	$ 7,923	$ 1,166	$ 6,757

NPV of 34 Year Life Cycle	Including Storm	Excluding Storm	Storm
Overhead - Per Mile	$ 200,426	$95,349	$105,077
Underground - Per Mile	$ 83,570	$76,004	$7,566
Differential - OH more (less) than UG	**$ 116,857**	**$ 19,345**	**$ 97,511**

NPV Life Cycle Costs - Per Lot Differentials

	OHD	UG			
Low Density					
Miles of Line *	1.82	2.51			
Number of Lots	210	210			
Per Lot - OHD			$ 1,740	$ 828	$ 912
Per Lot - UG			$ 999	$ 908	$ 90
Per Lot - Differential			$ (741)	$ 81	$ (822)
High Density-IND					
Feet of Line	6,296	8,987			
Miles of Line	1.19	1.70			
Number of Lots	176	176			
Per Lot - OHD			$ 1,358	$ 646	$ 712
Per Lot - UG			$ 808	$ 735	$ 73
Per Lot - Differential			$ (550)	$ 89	$ (639)
High Density-GNG					
Feet of Line	3,435	3,693			
Miles of Line	0.65	0.70			
Number of Lots	176	176			
Per Lot - OHD			$ 741	$ 352	$ 388
Per Lot - UG			$ 332	$ 302	$ 30
Per Lot - Differential			$ (409)	$ (50)	$ (358)