

Eric Fryson

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Sent: Wednesday, May 16, 2012 12:08 PM
To: Filings@psc.state.fl.us
Cc: Elisabeth Draper; Holdstein, Nancy L
Subject: E-Filing (Resubmission): PEF Responses to Staff 2nd Data Request - Dkt# 110293
Attachments: (Signed) PEF Responses w- Attachments (5.16.12).pdf

This electronic filing is made by:

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Docket No. 110293-EI

On Behalf of Progress Energy Florida, Inc.

Consisting of 12 Pages.

**The attached document for filing is PEF's
Responses to Staff's 2nd Data Request
(including Attachments) in the above-referenced docket.**

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03109 MAY 16 2012

FPSC-COMMISSION CLERK

5/16/2012



May 16, 2012

VIA ELECTRONIC FILING

Ms. Ann Cole, Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Petition for approval of revised underground residential distribution tariffs, by Progress Energy Florida, Inc.; **Docket No. 110293-EI**

Dear Ms. Cole:

On May 15, 2012, Progress Energy Florida, Inc. ("PEF") filed its responses to Staff's Second Data Request in Docket No. 110293-EI. PEF inadvertently omitted the attachments that were to accompany the responses.

Please find enclosed for filing PEF's responses to Staff's Second Data Request including the attachments.

Thank you for your assistance in this matter.

Sincerely,


John T. Burnett

JTB/lmr

Attachment

DOCUMENT NUMBER
03109 MAY 16 2012
FPSC-COMMISSION CLERK

**PROGRESS ENERGY FLORIDA, INC.'S RESPONSES TO STAFF'S SECOND DATA REQUEST
Docket No. 110293-EI**

Material Costs:

- 1. Please provide a table showing the major material costs for overhead (transformer, poles, primary and secondary conductor, etc) and major material costs for underground (transformer, primary and secondary cable, conduit, etc) used in the 2008 URD filing and used in the current filing for each subdivision. Show the impact on the differential and provide an explanation for each of the cost changes.**

Response: Please see attached documents which provide both a narrative explanation of the major material cost impacts, numerical material cost variances and impact on the per lot differential between PEF's 2008 URD filing and the current 2011 URD filing.

- 2. The response to Staff's First Data Request No. 15 states that the low density underground subdivision design has fewer materials. Please list the materials which the low density underground subdivision design has fewer of.**

Response: Please see attached documents which provide both a narrative explanation of the major material cost impacts, numerical material cost variances and impact on the per lot differential between PEF's 2008 URD filing and the current 2011 URD filing.

- 3. Please discuss the design changes discussed in response Staff's First Data Request No. 14 by comparing the maps used in the 2008 URD filing to current maps.**

Response: Please see attached documents which provide both a narrative explanation of the major material cost impacts, numerical material cost variances and impact on the per lot differential between PEF's 2008 URD filing and the current 2011 URD filing. Maps of both the 2008 subdivision designs and the 2011 subdivision designs were provided for discussion and review during the informal meeting held with FPSC staff on 5/9/12.

- 4. The stores handling formula as shown in the Excel spreadsheets PEF provided to staff show that the subtotal is divided by 1.07 before multiplying by 8.7%. Please explain the 1.07.**

Response: PEF's current development of the stores handling loader percent is based upon a pretax material cost. The data exported from the work management software for materials in this URD filing includes sales tax of 7%. In order not to double count the sales tax in the application of the stores loading the 7% sales tax is removed from the materials cost by dividing by the 1.07 factor.

DOCUMENT NUMBER 110293-EI

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FPSC-COMMISSION CLERK

NPV Analysis:

1. **Please explain the change in the discount rate from 8.10% to 6.82%. Show the derivation of the 6.82%.**

Response: See components and derivation of PEF's long term discount rates below. These financial capital structures are long-term target forecasts with the cost of equity being mostly recently approved and the cost of debt being current incremental cost of 10 year maturity debt. These discount rates are updated annual for use in various internal financial analyses.

		Long-Term Discount Rate					
		Cost of Debt	Cost of Equity	Debt Weighting	Equity Weighting	Tax Rate	Discount Rate
2008 URD	PEF	5.87%	11.75%	45%	55%	37.65%	8.10%
2011 URD	PEF	4.24%	10.50%	47%	53%	37.12%	6.82%
		Discount Rate Formula = ((Cost of Debt * Debt Weight) * (1- TaxRate)) + Cost of Equity * Equity Weight					

2. **Please explain PEF's response Staff's First Data Request No. 5 by showing the difference of "miles of line" and "circuit miles" on the subdivision maps. Does PEF know what definition the other investor-owned electric utilities use when calculating their NPV life cycle costs?**

Response: Circuit miles are derived from the Company's GIS system and encompass miles across our entire system. PEF's circuit miles include distribution primary and secondary wire. Circuit miles are comprised of the total distance between poles, regardless of the number of wires on the poles (for underground the equivalent would be trench feet). PEF does not include duplicate facilities in the same space. From the substation designs, PEF determined the miles of line from the drawings in a manner consistent with the definition of circuit miles such that the derivation of the per mile NPV cost (using circuit miles) and the application to the per lot cost (using miles of line) are on a consistent basis. PEF has historically maintained statistics on circuit miles only. Examples of areas where the company uses circuit miles:

- Actual capital and maintenance line work (work order development)
- Budgeting of Capital and Maintenance costs
- Budgeting and actual vegetation management cost (tree trimming)

In a brief discussion with TECO, we learned that TECO does not include secondary wire in their definition of circuit miles and also does not include the secondary wire from their subdivision drawings in applying the per mile cost. TECO does however include in circuit miles duplicate facilities in the same pole span space or trench space.

In a discussion with FPL, we learned that FPL uses the terms pole line miles (OH) and trench feet (UG). They include everything except services, but do not count duplicate facilities in the same pole span space or trench space. FPL counts the miles and feet from their drawings in a consistent manner when applying the per mile cost.

**Progress Energy Florida
2011 URD Rate Filing
Docket No. 110293-EI**

Summary of Major Material Cost Impact on Underground Residential Distribution Tariffs

Common issues across both overhead and underground residential designs:

The price for both overhead and underground transformers increased substantially since 2008. The US Department of Energy phased in new transformer efficiency standards where transformers of the old lower efficiency standards were not manufactured after January 1, 2010. The new more efficient transformers had increased need for high price raw materials such as copper and core steel. Progress Energy had certain inventory of transformers of the old efficiency standards and as we have purchased transformers of the new efficiency standard the price increase impact has been averaged into our overall inventory cost. As new transformers become more prevalent, Progress Energy expects pricing to moderate. The increase in transformers cost equally affected both overhead and underground designs. As a result, the **material impact in differential is small.**

Progress Energy continues to improve our cost tracking of indirect costs as part of our cost containment culture. In 2008, Progress Energy's URD filing accounted for two adders for indirect costs – Stores Handling and Engineering. The Company now identifies the costs into four separate categories – Stores Handling, Engineering, Supervision, and Fleet. Additional information on the new subcategories can be found on previously submitted Schedules 2, 6, 9 and in the response to question 8 in the Staff's first data request dated February 16, 2012. These costs are applied in equal percentages on both overhead and underground designs. As a result, the **differential increase will be larger** for subdivisions with higher material cost increases.

Common issues relevant only to overhead designed subdivisions:

Progress Energy continuously updates time and motion studies for various work activities. Recently, the Company found that previously insufficient time was included in our work management system for pole setting given our current work and safety standards. This includes such things as additional safety briefing on site and review of work order requirements on site prior to beginning work on site. Although pole prices have not increased substantially, the related cost to install has grown significantly which negatively impacts the cost to install the smaller poles used in overhead subdivision design. This increase in cost results in a **reduced differential** between overhead and underground subdivision designs.

The per foot cost for overhead cable used for service drops to individual homes has increased slightly more than overhead secondary cable. A small part is due to a change in standards using service cable with a 1/0 neutral instead of the previous #2 neutral. Based upon historical data review, some of the material cost increase appears to be the result of market demand fluctuation.

The resultant impact of this issue is an overall **reduced differential** between overhead and underground designs.

Common issues relevant only to underground designed subdivisions:

The price for underground primary and secondary cable has increased in cost substantially whereas much of the equivalent overhead aluminum wire cost has remained flat. The underground primary cable uses copper for the neutral where the overhead primary cable is all aluminum. Copper has continued to be a volatile commodity and the market demand for copper increased due to the change in transformer efficiencies. In addition, there has been an increase in petroleum based products which are used in higher quantities in underground cable. The result is a higher cost for all underground cable with the greatest increases being in primary cable. The resultant impact is a **higher cost differential** between underground and overhead subdivision designs.

Additional design specific differential cost drivers can be found on the individual subdivision material breakdowns sheets (excel files) titled "Summary of Change in Materials Used in Subdivision Design".

Progress Energy Florida
Summary of Cost Changes for Material and Labor of Major Materials 2011 vs. 2008
URD Filing Docket No. 110293-EI

	2008			2011			% Change		
	Material	Labor	Total	Material	Labor	Total	Material	Labor	Total
Overhead transformers									
25 KVA (per transformer)	\$474.60	\$42.00	\$516.60	\$921.83	\$51.37	\$973.20	94%	22%	88%
50 KVA (per transformer)	\$724.62	\$65.22	\$789.84	\$1,501.51	\$51.37	\$1,552.88	107%	-21%	97%
75 KVA (per transformer)	\$1,034.70	\$65.40	\$1,100.10	\$1,579.67	\$56.04	\$1,635.71	53%	-14%	49%
100 KVA (per transformer)	\$1,186.24	\$56.32	\$1,242.56	\$2,544.83	\$56.04	\$2,600.87	115%	0%	109%
Underground transformers									
25 KVA (per transformer)	\$972.30	\$57.40	\$1,029.70	\$1,661.98	\$60.71	\$1,722.69	71%	6%	67%
50 KVA (per transformer)	\$1,268.95	\$57.14	\$1,326.09	\$2,159.56	\$60.71	\$2,220.27	70%	6%	67%
75 KVA (per transformer)	\$1,349.26	\$57.10	\$1,406.36	\$2,568.70	\$60.71	\$2,629.41	90%	6%	87%
Poles									
30' (per pole)	\$76.99	\$38.43	\$115.42	\$93.99	\$93.40	\$187.39	22%	143%	62%
35' (per pole)	\$85.80	\$38.43	\$124.23	\$104.75	\$93.40	\$198.15	22%	143%	60%
40' (per pole)	\$153.53	\$38.43	\$191.96	\$184.52	\$93.40	\$277.92	20%	143%	45%
45' (per pole)	\$209.08	\$38.43	\$247.51	\$245.19	\$93.40	\$338.59	17%	143%	37%
Overhead Cable									
#2 - 3 wire - service (per foot)	\$0.48	\$0.42	\$0.90	\$0.61	\$0.47	\$1.08	27%	12%	20%
1/0 - 3 wire - service (per foot)	\$0.67	\$0.42	\$1.09	\$1.00	\$0.47	\$1.47	49%	12%	35%
4/0 - 3 wire - service (per foot)	\$1.39	\$0.42	\$1.81	\$1.49	\$0.47	\$1.96	7%	12%	8%
1/0 - 3 wire - secondary (per foot)	\$0.93	\$0.42	\$1.35	\$1.00	\$0.23	\$1.23	8%	-45%	-9%
4/0 - 3 wire - secondary (per foot)	\$1.39	\$0.42	\$1.81	\$1.52	\$0.23	\$1.75	9%	-45%	-3%
1/0 aluminum - primary (per foot)	\$0.21	\$0.42	\$0.63	\$0.21	\$0.47	\$0.68	0%	12%	8%
Underground Cable									
2/0 - 3 wire - service (per foot)	\$0.81	\$0.29	\$1.10	\$1.13	\$0.23	\$1.36	40%	-21%	24%
4/0 - 3 wire - service (per foot)	\$1.27	\$0.29	\$1.56	\$1.45	\$0.23	\$1.68	14%	-21%	8%
350 - 3 wire - service (per foot)	\$2.00	\$0.29	\$2.29	\$2.50	\$0.23	\$2.73	25%	-21%	19%
2/0 - 3 wire - secondary (per foot)	\$0.81	\$0.29	\$1.10	\$1.13	\$0.23	\$1.36	40%	-21%	24%
4/0 - 3 wire - secondary (per foot)	\$1.27	\$0.29	\$1.56	\$1.45	\$0.23	\$1.68	14%	-21%	8%
350 - 3 wire - secondary (per foot)	\$2.00	\$0.29	\$2.29	\$2.50	\$0.23	\$2.73	25%	-21%	19%
1/0 aluminum primary cable (per foot)	\$1.17	\$0.22	\$1.39	\$1.90	\$0.23	\$2.13	62%	5%	53%

Progress Energy Florida
Summary of Change in Per Lot Costs for Major Material
Low Density 210 Lot
URD Filing Docket No. 110293-EI

Description	2008	2011	Variance	% Variance
Low Density 210 lot Individual Services				
Underground				
Transformers	\$ 134.68	\$ 225.39	\$ 90.71	67.4%
Primary cable	119.22	139.46	20.24	17.0%
Secondary cable	151.99	134.18	(17.81)	-11.7%
Service cable	71.42	104.26	32.84	46.0%
Trenching primary, secondary, & services	240.08	261.13	21.05	8.8%
Other Materials and Labor	299.85	253.26	(46.59)	-15.5%
Subtotal Material & Labor Costs	1,017.24	1,117.68	100.44	9.9%
Stores Handling	58.72	44.26	(14.46)	-24.6%
Engineering	215.19	80.72	(134.47)	-62.5%
Supervision	-	132.56	132.56	0.0%
Fleet	-	98.96	98.96	0.0%
Subtotal Indirect Costs	273.91	356.50	82.59	30.2%
Total Underground Per Lot cost	1,291.15	1,474.18	183.03	14.2%
Overhead				
Transformers	103.06	190.75	87.69	85.1%
Primary-neutral wire	47.79	49.21	1.42	3.0%
Secondary cable	74.68	77.41	2.73	3.7%
Service cable	45.97	94.37	48.40	105.3%
Poles	75.22	119.59	44.37	59.0%
Other Materials and Labor	256.83	200.85	(55.98)	-21.8%
Subtotal Material & Labor Costs	603.55	732.18	128.63	21.3%
Stores Handling	40.86	30.66	(10.20)	-25.0%
Engineering	128.88	56.41	(72.47)	-56.2%
Supervision	-	82.09	82.09	0.0%
Fleet	-	61.28	61.28	0.0%
Subtotal Indirect Costs	169.74	230.44	60.70	35.8%
Total Overhead Per Lot Cost	773.29	962.62	189.33	24.5%
Differential				
Materials and Labor	413.69	385.50	(28.19)	-6.8%
Indirect Costs	104.17	126.06	21.89	21.0%
Total Differential Per Lot Cost	\$ 517.86	\$ 511.56	\$ (6.30)	-1.2%

Progress Energy Florida
Summary of Change in Per Lot Costs for Major Material
High Density 176 Lot Ganged Meter Pedestals
URD Filing Docket No. 110293-EI

Description	2008	2011	Variance	% Variance
High Density 176 Lot Gang Meter				
Underground				
Transformers	\$ 101.40	\$ 195.21	\$ 93.81	92.5%
Primary cable	37.42	60.03	22.61	60.4%
Secondary cable	-	-	-	0.0%
Service cable	70.45	85.27	14.82	21.0%
Trenching primary, secondary, & services	53.89	106.29	52.40	97.2%
Other Materials and Labor	164.96	70.14	(94.82)	-57.5%
Subtotal Material & Labor Costs	428.12	516.94	88.82	20.7%
Stores Handling	34.94	24.81	(10.13)	-29.0%
Engineering	92.61	36.96	(55.65)	-60.1%
Supervision	-	48.97	48.97	0.0%
Fleet	-	36.56	36.56	0.0%
Subtotal Indirect Costs	127.55	147.30	19.75	15.5%
Total Underground Per Lot cost	555.67	664.24	108.57	19.5%
Overhead				
Transformers	75.50	165.46	89.96	119.2%
Primary-neutral wire	23.28	23.31	0.03	0.1%
Secondary cable	7.95	32.37	24.42	307.2%
Service cable	53.49	27.22	(26.27)	-49.1%
Poles	43.67	64.03	20.36	46.6%
Other Materials and Labor	130.70	84.69	(46.01)	-35.2%
Subtotal Material & Labor Costs	334.59	397.08	62.49	18.7%
Stores Handling	29.63	19.18	(10.45)	-35.3%
Engineering	72.84	31.08	(41.76)	-57.3%
Supervision	-	37.26	37.26	0.0%
Fleet	-	27.81	27.81	0.0%
Subtotal Indirect Costs	102.47	115.33	12.86	12.6%
Total Overhead Per Lot Cost	437.06	512.41	75.35	17.2%
Differential				
Materials and Labor	93.53	119.86	26.33	28.2%
Indirect Costs	25.08	31.97	6.89	27.5%
Total Differential Per Lot Cost	\$ 118.61	\$ 151.83	\$ 33.22	28.0%

Progress Energy Florida
Summary of Change in Per Lot Costs for Major Material
High Density 176 Lot Individual Services
URD Filing Docket No. 110293-EI

Description	2008	2011	Variance	% Variance
High Density 176 Lot Individual Services				
Underground				
Transformers	\$ 122.92	\$ 214.46	\$ 91.54	74.5%
Primary cable	36.99	72.63	35.64	96.4%
Secondary cable	69.86	81.11	11.25	16.1%
Service cable	51.17	74.01	22.84	44.6%
Trenching primary, secondary, & services	178.80	188.84	10.04	5.6%
Other Materials and Labor	259.42	250.89	(8.53)	-3.3%
Subtotal Material & Labor Costs	719.16	881.94	162.78	22.6%
Stores Handling	43.34	33.38	(9.96)	-23.0%
Engineering	152.50	64.09	(88.41)	-58.0%
Supervision	-	108.98	108.98	0.0%
Fleet	-	81.36	81.36	0.0%
Subtotal Indirect Costs	195.84	287.81	91.97	47.0%
Total Underground Per Lot cost	915.00	1,169.75	254.75	27.8%
Overhead				
Transformers	71.81	159.29	87.48	121.8%
Primary-neutral wire	22.91	25.31	2.40	10.5%
Secondary cable	51.64	44.74	(6.90)	-13.4%
Service cable	45.22	54.00	8.78	19.4%
Poles	52.96	103.02	50.06	94.5%
Other Materials and Labor	183.84	180.25	(3.59)	-2.0%
Subtotal Material & Labor Costs	428.38	566.61	138.23	32.3%
Stores Handling	31.39	22.29	(9.10)	-29.0%
Engineering	91.95	43.51	(48.44)	-52.7%
Supervision	-	67.61	67.61	0.0%
Fleet	-	50.47	50.47	0.0%
Subtotal Indirect Costs	123.34	183.88	60.54	49.1%
Total Overhead Per Lot Cost	551.72	750.49	198.77	36.0%
Differential				
Materials and Labor	290.78	315.33	24.55	8.4%
Indirect Costs	72.50	103.93	31.43	43.4%
Total Differential Per Lot Cost	\$ 363.28	\$ 419.26	\$ 55.98	15.4%

Progress Energy Florida
Summary of Change in Materials Used in Subdivision Design
Low Density 210 Lot
URD Filing Docket No. 110293-EI

Description	Unit	2008	2011	Variance
Low Density 210 lot URD (Total)				
Construct Differential Per Lot	Dollars	646	791	145
NPV Operational Cost Diff per Lot	Dollars	517	512	(5)
Underground				
1/0 primary cable	Feet	17,989	13,726	(4,263)
2/0 secondary cable	Feet	3,162	3,925	763
4/0 secondary cable	Feet	6,500	9,770	3,270
350 secondary cable	Feet	8,094	2,354	(5,740)
2/0 service cable	Feet	8,745	9,540	795
4/0 service cable	Feet	1,430	1,484	54
350 service cable	Feet	1,375	2,354	979
Trenching primary & secondary	Feet	17,920	17,584	(336)
Transformers total	Each	22	23	1
Total KVA	KVA	1,025	1,150	125
Overhead				
1/0 primary-neutral wire	Feet	15,766	15,445	(321)
#2-3 secondary cable	Feet	330	-	(330)
1/0-3 secondary cable	Feet	2,550	3,120	570
4/0-3 secondary cable	Feet	6,565	6,155	(410)
#2-3 service cable	Feet	7,755	13,200	5,445
1/0-3 service cable	Feet	1,692	2,880	1,188
4/0-3 service cable	Feet	423	720	297
Poles total	Each	126	126	-
Transformers total	Each	25	25	-
Total KVA	KVA	1,400	1,400	-

Notes:

The 2011 Low Density differential increased primarily due to miles of line in NPV calculations.

Factors that help to lower the differential:

The entire UG subdivision was redesigned using current standards and loading.

One entire primary loop was eliminated.

Secondary cable size was reduced and transformer positions were adjusted.

(Some of this was made possible due to the elimination of conduit usage.)

Underground cable can be loaded to higher levels when direct buried in dirt because it provides a better heat sink than air.

These design changes mitigated the higher costs of the primary and secondary cable.

The existing overhead design was determined to meet current design specification.

The only changes made to the overhead design were some adjustments in wire sizing and length.

The length of the overhead service drops were increased to 80' vs. 40' in 08. This is more reflective of the length of an overhead service drop in a low density subdivision.

The net result was a lower cost differential between overhead and underground designs.

Progress Energy Florida
Summary of Change in Materials Used in Subdivision Design
High Density 176 Lot Ganged Meter Pedestals
URD Filing Docket No. 110293-EI

Description	Unit	2008	2011	Variance
High Density 176 Lot Gang Meter (Total)	Dollars	306	241	-65
Construct Differential Per Lot	Dollars	119	152	33
NPV Operational Cost Diff per Lot	Dollars	187	89	(98)
Underground				
1/0 primary cable	Feet	4,732	4,732	-
2/0 secondary cable	Feet	-	-	-
4/0 secondary cable	Feet	-	-	-
350 secondary cable	Feet	-	-	-
2/0 service cable	Feet	6,729	6,729	-
4/0 service cable	Feet	1,522	1,522	-
350 service cable	Feet	1,371	1,371	-
Trenching primary & secondary	Feet	5,047	8,887	3,840
Transformers total	Each	14	14	-
Total KVA	KVA	900	900	-
Overhead				
1/0 primary-neutral wire	Feet	6,437	6,437	-
#2-3 secondary cable	Feet	-	-	-
1/0-3 secondary cable	Feet	-	-	-
4/0-3 secondary cable	Feet	770	770	-
#2-3 service cable	Feet	499	499	-
1/0-3 service cable	Feet	2,623	2,623	-
4/0-3 service cable	Feet	3,350	3,350	-
Poles total	Each	59	59	-
Transformers total	Each	14	14	-
Total KVA	KVA	1,075	1,075	-

Notes:

The 2011 High Density 176 lot Gang Meter subdivision price differential increased primarily due to increased cost in underground cable and additional trenching costs. Although the design remains unchanged, the 2008 filing did not include the trenching for the service cable. This has been added in this filing.

Progress Energy Florida
Summary of Change in Materials Used in Subdivision Design
High Density 176 Lot Individual Services
URD Filing Docket No. 110293-EI

Description	Unit	2008	2011	Variance
High Density 176 Lot Ind Service (Total)				
Construct Differential Per Lot	Dollars	528	524	-4
NPV Operational Cost Diff per Lot	Dollars	364	420	56
	Dollars	164	104	(60)
Underground				
1/0 primary cable	Feet	4,678	5,991	1,313
2/0 secondary cable	Feet	5,721	7,047	1,326
4/0 secondary cable	Feet	2,185	2,411	226
350 secondary cable	Feet	1,324	232	(1,092)
2/0 service cable	Feet	8,800	9,570	770
4/0 service cable	Feet	-	-	-
350 service cable	Feet	-	-	-
Trenching primary & secondary	Feet	8,851	8,847	(4)
Transformers total	Each	14	17	3
Total KVA	KVA	925	850	(75)
Overhead				
1/0 primary-neutral wire	Feet	6,334	6,657	323
#2-3 secondary cable	Feet	-	-	-
1/0-3 secondary cable	Feet	2,447	3,520	1,073
4/0-3 secondary cable	Feet	3,176	2,010	(1,166)
#2-3 service cable	Feet	4,638	2,120	(2,518)
1/0-3 service cable	Feet	3,424	4,920	1,496
4/0-3 service cable	Feet	-	-	-
Poles total	Each	81	94	13
Transformers total	Each	14	18	4
Total KVA	KVA	775	1,075	300

Notes:

The 2011 High Density 176 lot Individual Service subdivision price differential stayed similar due to several factors:

Both the overhead and underground designs were recalculated to bring to current PEF standards. PEF is no longer building back lot construction on new subdivisions. This caused an increase in cost for both overhead and underground designs.

A substantial increase in the cost and usage of underground primary and secondary cable as compared to the equivalent overhead design resulted in a higher cost for the underground design relative to the overhead design.

The cost for the overhead transformers increased more than the underground which helped reduce differential.