Frequently Asked Questions

General Service

What is FPL's standard service?
FPL and other utilities use the overhead standard established by the Florida Public Service Commission (PSC) as the most cost-effective type of construction. However, we are open to putting lines underground provided the additional cost is covered by or for the customer.

Why was overhead established as the standard?
Overhead service was established as the standard construction for utilities because over time it has been the most cost-effective design. When alternatives like underground service are requested by developers or mandated by cities, the customer benefiting from the alternative design pays the additional cost.

How many miles of distribution power lines does FPL have in its system?
FPL has approximately 66,000 miles of distribution lines serving its 4.4 million customer accounts in all or part of 35 counties in Florida. In addition, we also have about 6,600 miles of transmission lines. More than one-third of FPL's system – or in excess of 24,500 miles – is underground. Often, the costs of this service are borne by builders and developers who pass it along to the customer in the price they pay for newly constructed real estate. However, it's important to remember that lines eventually come above ground, so no system is totally underground.

Underground Electric Service Delivery

What are the different strengths and weaknesses of overhead and underground service that affect performance and reliability?
While underground facilities are not as susceptible to wind and debris-blown damage, they are more susceptible to water intrusion and local flood damage, which can make repairs more time consuming and costly. Overhead facility damage is easier to locate than underground and can generally be repaired quicker. Underground interruptions may be less frequent, but typically last longer due to more complex repair requirements. Following recent hurricanes, we've found that the areas that took the longest to repair were generally those served by underground facilities still flooded days after the storm passed. Damage and corrosion of underground electrical systems often becomes apparent days or even months later, causing additional outages and inconvenience to customers. Storm winds can damage both types of systems causing outages. Overhead systems face outages resulting from trees and debris blowing into lines. Underground systems face outages from trees collapsing on above-ground transformers and switch boxes or from tree root systems uprooting buried cable when trees topple. While a neighborhood may be locally served by underground cable, all electric service eventually comes back above ground and connects to an overhead system, either in the surrounding neighborhoods, or further down the street. So, exposure to above ground electric service from weather, animals, and trees is never fully eliminated.

Why don't you put transmission lines underground?
FPL transmission lines – that is, those large power lines that move power over long distances like an interstate highway from power plants to our neighborhoods – are rarely ever placed underground due to their complexity and considerably higher costs, as well as security and reliability considerations. For example, depending on the voltage of the lines we may need to build a cooling system underground escalating the cost of the project. These factors can drive the cost up five to fifteen times more than an overhead transmission line.

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Costs

Why is there a differential cost for underground service? Why must the customer or requesting party pay the differential cost of that service?
The PSC has established that overhead facilities are the most cost-effective type of service. In fact, the costs of these facilities are included in the electric rates charged to customers. Whether its new construction or a conversion project, the cost of underground service is higher than overhead and it is the PSC's and FPL's position that it would be unfair to charge all customers the higher price to cover the cost since not everyone would get the benefit or necessarily be willing or able to pay.

But I live in a community with underground service and I didn't pay anything extra – why is that?
You may not realize it, but you have. For aesthetic reasons, many developers work with FPL and other utility companies to bury their lines when they are first planning the construction of a new neighborhood. The added cost for underground service and other community amenities is typically included in the price you pay for a new home.

What does underground service cost in a new subdivision, versus new overhead service?
Usually, the basic costs are about a third more, but may be even more if additional work is needed on supporting electrical facilities, such as putting a section of an adjacent main line underground. The builder/homeowner is responsible for paying the cost difference between new overhead and new underground facilities prior to construction. The detailed cost components are provided in an FPL tariff that is available from your local FPL project manager [see FPL Electric Tariff sheets 6.090-6.100].

Just for comparison, and using a sample subdivision, can you give me a rough idea of the difference in cost to install standard overhead service versus underground service in new construction?
Depending on the density of a new development and exclusive of other facility needs, it costs FPL between $736 and $1,161 per lot to install our standard overhead service. Underground on the other hand, costs between $973 and $1,605 per lot. Thus, the builder/homeowner selecting to have underground service pays $236 to $444 on average per lot in differential cost. In addition, if main feeder lines are required to serve the subdivision, and the developer requests those be placed underground also, there is an additional differential charge of $11.56 per foot of main line and $20,365 per installed pad mounted switch cabinet. In a typical 100 lot subdivision needing main feeder work and about two switch cabinets and related equipment, this could add an additional $50,000 to the project, doubling or tripling the per-lot differential cost.

When converting existing service, what other additional costs may be incurred that are normally not an issue with new developments?
In conversion projects, the customer will be responsible for any additional costs not included in FPL's estimate, such as:

- **Relocation of other utilities** – To bury or relocate other utility lines such as cable and telephone.
- **Hiring licensed electrician** – To make the home ready to receive underground service.
- **Site restoration** – To restore the affected areas by repairing driveways, landscaping, etc.

What are the requirements for a project to qualify for the 25 percent Government Adjustment Factor (GAF) CIAC incentive?
To be eligible for this CIAC incentive, the project must be sponsored by the local government. As such, the project must incorporate a sufficient amount of overhead facilities which includes a minimum of approximately three pole line miles or approximately 200 detached dwelling units within a contiguous and well defined geographic area. The local government must then require all customers within the conversion area to convert their service entrances, such as the service drop and weatherhead, to underground within 6 months of completion of the underground facilities installation. These criteria help ensure that potential underground service benefits are not affected by facilities that are exposed to causes of overhead outages. The local government will be responsible for paying the remaining 75 percent of the CIAC.

Residential Conversions

What are my options if I live in an established neighborhood served by overhead electrical service and I want to convert my service to underground?
You may personally arrange to have your individual service drop converted from overhead to underground, or seek conversion of all the neighborhood electrical facilities, through your city or homeowners association. Converting an older community's power lines from overhead to underground, however, can be very expensive and disruptive, especially in highly urbanized areas. With conversions, the customer pays the total cost of the conversion, since the existing electric service must be dismantled in addition to installing a whole new underground system.

What's involved in converting my service drop?
Customers who wish to have the line to their home buried will also need to convert the meter can and downpipe to accept underground service. This requires a licensed electrician and, in most cases, an electrical permit. Since this work may trigger building codes that require older home wiring to be brought up to today's standards, it's important to check with the proper authorities before getting started. Homeowners also need to arrange for a trench to be dug from the pole to the new meter location to hold FPL-provided PVC for the underground cable.

Can you be more specific about some of the costs I may be facing if I pursue converting my individual overhead service to underground?
To convert your service, a flat fee of $429.39 would be due to FPL before work begins, along with possible additional costs that depend on a number of variables such as:

- Whether your local government's electrical authority requires electrical installation or wiring to be upgraded as part of your conversion.
- Whether an electrician (or another tradesperson) will do the work to dig and backfill the trench needed to bring the underground facilities from the existing overhead pole location to the building. (i.e. from the pole to the meter)
- The length of trench that's needed to accommodate the conversion.
- Whether the existing overhead weatherhead extends through the roof of the building, in which case, you may need to incur the cost of roof repair as well as paint and aesthetics. These costs and arrangements are separate from the work FPL would handle and are the responsibility of the customer.

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Community Conversions

Who can request that all overhead facilities in a community be converted to underground?
Existing neighborhood overhead lines may be converted if a community so desires. Anyone willing and able to pay the cost for the conversion and secure the necessary easements to place the underground facilities on private property may submit a written request. The request may be received from local governments, large or small communities, builders and developers.

Does conversion from overhead to underground require a unanimous agreement from all property owners within the conversion area before FPL will convert its facilities to underground?
Generally, yes due to the following conditions for such conversion:

- **Easements** – All the easements (property use agreements from owners) must be acquired before an underground electrical distribution system can be installed. If FPL can design around an occasional customer who refuses to provide an easement -- without jeopardizing the integrity of its electrical system -- FPL will attempt to do so. In the case of converting to underground, this also means deciding whose property will accept the new pad mounted transformer(s) and fairly large switch cabinet(s) that sit above ground as part of the underground grid.
- **Cost** – It's also necessary for all the requesting parties to determine and agree in advance on the allocation of the conversion costs among those benefiting from the project before FPL can begin construction. Otherwise, subsequent disagreements may slow the conversion effort and drive up costs. Since FPL's tariff requires full payment of the calculated customer contribution amount prior to beginning construction, customers may want to consider other options to offset some of the project costs. These options can include taking responsibility for doing some of the boring and/or trenching and installing the conduit. Regardless of who does the work, the installation must meet FPL standards for safety and reliability, as well as, local electrical and building code requirements.

What are some of the impacts associated with converting an older overhead system to new underground?
Converting from an overhead to an underground system basically means abandoning an existing working electrical system. The logistics of converting an existing system in an established neighborhood can be considerably more expensive and disruptive to personal property and surroundings than building new. For example, utilities often share poles above ground. If the objective is to move utilities underground the phone, cable television and Internet service must also be considered. This presents additional considerations, such as different spacing requirements, boring and/or trenching needs and ground-level switching boxes involved in providing each type of service. Driveways, sidewalks, fences, landscaping, sprinkler systems and yards may need to be torn up or may be inadvertently damaged if not clearly delineated. Entry and exit ways to homes and business could be impacted for extensive periods of time. Because permits are needed to change meter-related equipment, conversions of older homes and neighborhoods may trigger city or county requirements that homeowners/businesses bring interior wiring up to current code. This could require the expense of a licensed electrician and potentially extensive interior rewiring and remodeling. Finally, legal easements are needed from all conversion participants that allow FPL access to its underground equipment, including the above ground components – and a number of people must agree to have the large green transformer box and pad or other switching boxes in their yards.

Community Conversion Costs and Funding

Are there different ways the conversion of a full neighborhood or city might be financed?
Yes. For qualified local governments, the PSC has approved FPL's recently established mechanism to recover the costs associated with converting from overhead to underground by adding a fee to customer bills. Additionally, Chapters 197 and 170 of the Florida Statutes allow municipalities to fund underground conversion costs by levying special assessments imposed on tax bills. Landowners benefiting from the conversion must be identified and the special assessment may be collected directly from the local government imposing the assessment or through annual property tax bills. Another Florida Statute – 125.01(q) – allows counties to establish municipal service benefit units and municipal service taxing units in certain areas. These governmental units may levy service charges, special assessments or taxes within these units to fund underground conversion costs.

What is the Government Adjustment Factor (GAF) and what are the requirements to receive this incentive?
To help with the high cost of overhead-to-underground conversions, FPL has proposed invest 25 percent of the Contribution-In-Aid-of-Construction (CIAC) of converting overhead lines to underground for qualifying local government-sponsored conversions. In June 2007, the proposal received final approval from the Public Service Commission for qualifying local government sponsored conversion projects.

To be eligible for this CIAC incentive, the project must be sponsored by the local government. As such, the project must incorporate a sufficient amount of overhead facilities which includes a minimum of approximately three pole line miles or approximately 200 detached dwelling units within a contiguous and well defined geographic area. The local government must then require all customers within the conversion area to convert their service entrances, such as the service drop and weatherhead, to underground within 6 months of completion of the underground facilities installation. These criteria help ensure that potential underground service benefits are not affected by facilities that are exposed to causes of overhead outages. The local government will be responsible for paying the remaining 75 percent of the CIAC.

How does the FPL undergrounding tariff work?
In 2003, FPL established a PSC-approved rule and process (tariff) for cities that wanted to have the option of converting to underground in designated areas and who needed a mechanism to recover their costs. Under this new tariff, a city could pay to make the conversion and then recover its costs over a designated timeframe by having FPL add an underground fee on the bills of those customers in their jurisdiction who would be benefiting from the conversion. (Fees may not exceed [1] 15 percent of a customer's bill or [2] $30 for residential and $50 for every 5,000 kWh commercial.) No such arrangements have as yet been established in our service territory under this new tariff.

What might it cost to convert from overhead to underground service in a community?
The two key drivers contributing to the cost calculations are labor and materials. Depending on these factors, underground facilities can cost anywhere from $500,000 per mile to more than $4 million per mile. While these figures have a considerable amount of variability, there is a process in place where FPL generates a "ballpark" estimate to assist in determining the magnitude of the cost a community may be considering.

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What makes it so much more expensive to do conversions versus new construction, especially considering that the customer pays for most of the peripheral work?
With conversions, FPL's costs are significant. The work includes building a whole new system while operating the existing system. Then, the older system is dismantled once the new one is up and running. The higher costs also reflect the fact that conversions in older neighborhoods – regardless of the type of excavation we use (boring or trenching) – require working near and avoiding other utilities such as phone, cable, sewer, gas lines, water lines, etc. Finally, all new underground components must be acquired and installed, including conduit, cable (wire), pad-mounted transformers and switch cabinets. Typically, dismantling represents about 15 percent of the cost; installing underground components about 65 percent; and actual excavation about 20 percent.

What will it cost to bury the other utilities such as telephone and cable television?
This question will need to be addressed by the other utilities involved in the conversion.

What experience does FPL have assisting any groups with evaluating or actually performing a conversion?
Actually, our experience is limited, as many government entities or neighborhoods have abandoned the idea after fully investigating the impacts. In other cases, voters have determined the disadvantages of conversion outweighed the advantages, and have failed to authorize funding. Some exceptions have involved city-initiated, limited-scope conversions involving primarily a few downtown streets, such as in beach towns in Miami-Dade, Broward, Palm Beach and Sarasota counties.

What are some examples of instances where proposed overhead to underground conversions would not be feasible?
Instances in which private property owners aren't willing to provide the easements that are necessary for FPL to design and engineer the conversion. Also, locations where necessary safety standards and operational clearances cannot be met such as extremely congested areas where switch cabinets cannot be installed with sufficient operating clearances. Areas prone to flooding as excessive flooding can cause transformers to fail, which then cannot be safely restored until flood waters recede.

Construction Requirements

Can the requester have a contractor perform the conversion work?
Yes, that's an option. The tariff requires only that the work be preformed to FPL standards and the facilities be maintained and operated by FPL.

If easements are difficult to obtain, why not place underground facilities in the public right-of-way instead of on private property?
Typically, the only underground facilities FPL places in the public right-of-way are those necessary to cross under streets, like cable and conduit. The reason is that, otherwise, every road widening or improvement project could potentially compromise the company's ability to deliver safe, reliable, uninterrupted power. On the other hand, if a local government offered FPL an easement or equivalent (a signed legal agreement) in the public right-of-way, we would consider this alternative only if we could not physically install the cable on private property. Only cable and conduit are allowed in the public rights-of-way in these rare cases. These public right-of-way easements would also need to be legally conveyed and expressly reserved on FPL record drawings. However, it's been our experience that local governments are reluctant to grant such right-of-way easements or easement equivalents. As for other facilities and equipment needed for underground – such as primary splice boxes, transformers and switch cabinets – these components of the underground system would still need private property easements for us to be able to routinely access and maintain the equipment and ensure reliable service.

Frequently Asked Questions

Why must the easements associated with underground facilities be at least 10 feet wide?
Ten feet is our standard easement requirement for "front" distribution neighborhoods to provide: (a) adequate space for the necessary pad-mounted transformer and underground cables; (b) sufficient area for FPL crews to safely work away from roadways; and, (c) enough room for other utilities that might occupy the same easement to install future cable and conduit without interfering with the electric transformers located in the same vicinity. Each pad mounted switch cabinet requires a 20 foot by 20 foot easement for installation and operation.

Does FPL perform overhead to underground conversions in rear easements?
Front easements are required for new construction and are also typically required for conversions from overhead to underground, as they allow for quicker access to the facilities. Should a power outage occur, facilities in the rear of a property may be inaccessible due to locked gates or dogs. The inability to access transformers and other equipment could delay the restoration of an entire neighborhood. FPL would consider locating easements in the rear of the property if an access road or alley existed that would allow for quick access to the facilities. The 10-foot easement requirement will still apply.

In the case of conversions, what is FPL's preferred method of burrowing underground to lay cable and conduit and why?
Directional boring is generally preferred in conversions to minimize impact to other utilities that are generally buried higher in the ground than electrical conduit and cable. Directional boring, while it may save on site restoration costs, is substantially more expensive work to perform. Open trenching is usually preferable for the paying party because it is the least expensive method available. An advantage of trenching is that other underground utilities may use the same trench, reducing the collective cost of burying all different facilities. This, however, requires significant coordination. A disadvantage of open trenching is the amount of surface restoration required — such as landscaping and sidewalks. Given that the locations of other utilities are not always known, especially in older communities, there is still a risk both trenching and boring may impact other subsurface utilities, such as water and sewer lines, gas lines or drainage lines.

Why must some of the equipment in an underground system remain above ground?
While conduit and cable can be placed underground, which eliminates poles and wires, transformers and switch cabinets need to be at ground level and accessible to FPL crews for timely maintenance, outage repairs, rerouting power and other functions.

Frequently Asked Questions

Requests & Estimates

How long does it take to get a "ballpark" estimate?
Typically, it may take from two to three weeks. This time period may vary depending on several factors such as:

- The complexity of the job
- Geographic size of the area to be converted
- Facilities involved and type of equipment needed
- The electrical load being served, including the population density and number of switch cabinets required
- The current workload of FPL project managers

How does FPL ensure the "ballpark estimates" are consistent throughout the territory?
FPL is establishing a comprehensive, standard plan and process that takes into account the many types of facilities and different population densities across the system. The "ballpark estimate" is simply an order of magnitude (for example – $5,000 vs. $500,000) to assist the requestor in determining whether to move forward with a conversion project and seek a binding estimate. Unfortunately, due to innumerable variables, there is no single blanket cost.

Can FPL provide a simple cost or range of cost for conversion from overhead to underground based on dollars per linear foot?
No. There are just too many factors and variables that are unique and distinct to each conversion request.

How long does it take to get a detailed, binding estimate?
Typically it takes approximately 10 to 16 weeks (pending agreement on easement locations) to obtain a binding estimate. However, this timeframe may vary due to the size and complexity of the job, the facilities involved and other factors.

How does FPL ensure the binding estimates are consistent throughout the territory?
All actual "for construction" estimates are valid for a period of 180 days where all material and labor are inventoried in a computer-based estimating system, This is the same system used for construction estimates for all FPL work system-wide. In addition, the PSC rule governing overhead to underground conversions specifies exactly how the charges are to be calculated [see Florida Administrative Code 25-6.115, and FPL's Electric Tariff sheets 6.300 – 6.330, specifically].

Are any credits available for existing facilities that can be salvaged and will they be factored into my estimate?
Some salvage credits may be available. Salvage value is only given for equipment that can be removed from the field and then re-issued for use with no testing or refurbishing required before re-use, such as concrete poles. Typically these credits are not significant [see FPL Electric Tariff sheet 6.300].