Vegetation Management for Distribution Lines
Trees contacting power lines and other electric facilities are the major cause of electric service interruptions, especially during severe weather. To prevent interruptions to your electric service, FirstEnergy has a year-round vegetation management program aimed at keeping approximately 200,000 miles of lines in our six-state, 65,000-square-mile service territory clear of trees and undergrowth.

Since 1998, FirstEnergy has been named a Tree Line USA utility every year by the National Arbor Day Foundation in cooperation with the National Association of State Foresters. The award recognizes utilities that promote the dual goals of dependable utility service and abundant, healthy trees along America’s streets and highways. Award-winning companies demonstrate excellence in tree care, training and public education.
What are Distribution Lines?

Electrical distribution lines are underground or overhead power lines that carry electricity from a substation to your home. Overhead lines are typically visible throughout your neighborhood, extending from pole to pole. Occasionally trees or other types of vegetation can interfere with these lines and it is important to manage this before it affects your electric service.

Why is Tree Trimming Necessary?

Trees can threaten service reliability

Trees interfering with power lines can cause two different types of outages.

1. A momentary power interruption – When a tree limb contacts a power line, the tree becomes an alternative path for the electricity, which creates a short circuit. Small branches and twigs often clear from the line before a strong path to ground is established. The result is a momentary power interruption that lasts just long enough to cause your lights to blink. However, when many twigs and branches are in contact with a line, the cumulative effect can be enough to cause a complete loss of power.

2. A complete loss of power — Lightning, wind or the weight of ice and snow can snap tree branches and topple them into power lines. Trees and tree limbs weakened by age, disease or insects can also break and damage power lines. This results in a sustained interruption that requires repairs to the line.

Trees can threaten public safety

When trees impact electric lines and cause power outages, it’s more than inconvenient. Such situations can also threaten public safety, especially when they involve fallen wires or when service is interrupted to hospitals, nursing homes, traffic light controls, water pumps, fire alarms and other vital facilities. Never go near a downed wire and warn others to stay away. Report downed wires to your local police or fire department, or call our outage reporting number at 1-888-LIGHTSS (1-888-544-4877).

Trimming Intervals

Although it is not possible to predict all tree-related problems, FirstEnergy’s tree-trimming program is designed to prevent safety or reliability problems from occurring. Typically, we trim trees on a maintenance cycle every four or five years. We also review records of power interruptions attributed to trees to help establish our tree-trimming priorities.
**Professional Tree Trimmers Help Keep the Lines Clear**

FirstEnergy employs independent contractors whose skilled, professional crews trim trees to provide enough clearance between limbs and lines for safe and reliable service. Crews perform the work under the guidance and inspection of FirstEnergy’s foresters.

We encourage our contractors to use a natural trimming method called drop-crotch or directional pruning, proven to be the best method for the long-term health of the tree. It is called drop-crotch trimming because the proper cut for the best health of the tree is at the crotch of the branch where it joins a larger branch or trunk. It is also known as directional pruning because it directs subsequent growth away from the power lines. This type of trimming reduces the amount of wood to be removed in future trims.

**When Trimming Isn’t Enough**

Occasionally, trees are planted in unsuitable areas. Some trees belong in the forest, not in an urban environment. For fast-growing trees like silver maples, willows and sycamores, the repeated trims required to keep limbs clear of power lines increase tree decay and make trees more susceptible to disease. When these types of trees are placed directly under or near power lines, removal is the best solution.

**Wood Disposal and Stump Removal**

Generally, vegetation management crews do not remove stumps or roots of trees, although this service may be available at a minimal cost to property owners in some areas. In most cases, stumps will be cut off flush with the ground. Trees that are located in fencerows or that contain metal, cement, rocks, etc., will be cut above the interfering material.

After a tree is pruned or removed, small tree limbs and branches are disposed of in a manner that is acceptable to the landowner and FirstEnergy. Wood that is too large for the chipper is cut into manageable lengths and left on the property, near the base of the tree. Disposal or use of all such wood is the property owner’s responsibility.
Customer Notification is Important

In most cases, we will attempt to notify the property owner before removing a tree. However, in an emergency, we are not always able to contact the property owner in advance. If the tree in question is located between utility poles, FirstEnergy will remove the tree free of charge. If the tree is located between a utility pole and the customer’s home, we will disconnect the service free of charge, but in most cases the homeowner will be responsible for the actual tree removal. Please call your FirstEnergy utility for specific details about your tree and power lines.

Proper Tree Placement

Tree management around power lines requires a long-term perspective. The conflict between trees and power lines can be resolved through timely, effective trimming and also by making sure that the right trees are planted in the proper place.

Our foresters recognize that each tree has its own unique characteristics. While many trees contribute greatly to our living environment, others don’t do well in certain areas. Tall-growing trees are not compatible with electric lines. Areas around distribution power lines have only 25 feet of growing room for tree height, so it does not make good sense to plant trees that will grow 80 feet tall in such a place.

We prefer that you avoid planting any tree underneath power lines, but if you do the key is to select the right kind of tree for the location. As the diagram shows, make sure any tree planted within 20 feet of neighborhood distribution power lines is a variety that will grow to a mature height of 25 feet or less. Small trees such as flowering crabapple, dogwood or serviceberry are ideal for these locations. In addition, such trees often feature smaller root structures. So they’re also less likely to crack sidewalks and driveways or to clog underground drain lines.

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Plant taller trees farther away to ensure they can’t grow into power lines. At distances of 20 to 50 feet, plant trees that grow to a height of 40 feet or less. For instance, linden or magnolia trees are a good choice in these areas.

If you want to plant a tree that grows tall, such as a maple, oak, pine or spruce, make sure it’s at least 50 feet from the nearest residential overhead lines.

There are a number of tree varieties that are specifically not recommended for use near overhead lines of any kind. The disadvantages of these trees include brittleness – which makes them vulnerable to storm damage – or susceptibility to disease and insect infestations.

**Trees to avoid** for these reasons include:

- Black Locust
- Callery Pear
- Catalpa
- Box Elder
- Elm – American
- Elm – Siberian
- Horse chestnut
- Mulberry
- Poplar *(Carolina, Lombardi or other hybrids)*
- Silver Maple
- Sycamore
- Tree-of-Heaven
- White Pine
- Willow

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**Underground Electric Service**

Do not plant trees and shrubs too close to underground lines. Trees with shallow surface roots or deep spreading roots can damage them. Special care also should be taken when planting near above-ground pad mount transformers. Please plant trees and shrubs at least 10 feet away from a transformer’s service door, and at least three feet from its back and sides. Remember to consider the plants mature width prior to spotting the location.
Transmission Lines and Rights-of-Way

Vegetation around transmission lines is treated much differently than vegetation around distribution lines. On transmission rights-of-way, we typically clear rather than prune established trees in order to maintain safe and reliable electric service. Some low-growing shrubs are allowed to remain in the transmission corridor to provide a viable habitat for wildlife as long as they do not obstruct safe access.

The approach that FirstEnergy employs is the control or removal of all incompatible vegetation in the wire zone and border zone that has the potential to interfere with the safe and efficient operation of the transmission system. The goal in the wire zone is to promote a low-growing plant community of grasses, herbs and shrubs (approximately 3 – 5’ in height). In the border zone, we support a plant community of flowering plants and taller compatible shrubs (approximately 12 – 15’ in height).

If you are considering planting shrubs on any transmission right-of-way, please contact our forestry staff for information.

Note: The Wire Zone/Border Zone approach is used for rights-of-way wider than 100’. In locations where the rights-of-way are 100’ or less, incompatible vegetation is controlled from edge to edge of the right-of-way.
Call **Before You Dig**

Before you plant trees or shrubs, dial 8-1-1. This federally mandated national “Call Before You Dig” number was created to help protect you from unintentionally hitting underground utility lines. Call at least 48 hours prior to starting your project to have your lines marked so you can dig safely.

**The Big Picture**

We take our job of providing reliable and safe electricity to your home and community very seriously. One tree-related outage can affect hundreds of customers. We appreciate your cooperation in supporting our vegetation management program. By working together, we can hold down the cost of your electric service, reduce the possibility of power interruptions to your neighborhood, and still enjoy the positive qualities that trees contribute to our lives.

If you have any questions about our vegetation management program, please visit [www.firstenergycorp.com/trees](http://www.firstenergycorp.com/trees) or call your FirstEnergy electric utility.

The Illuminating Company . . 1-800-589-3101  
JCP&L ...................... 1-800-662-3115  
Met-Ed ..................... 1-800-545-7741  
Mon Power ............... 1-800-686-0022  
Ohio Edison ............ 1-800-633-4766  
Penelec .................... 1-800-545-7741  
Penn Power .............. 1-800-720-3600  
Potomac Edison .......... 1-800-686-0011  
Toledo Edison .......... 1-800-447-3333  
West Penn Power ........ 1-800-686-0021