



Undergrounding Electric Distribution Lines in NSPM

Xcel Energy owns and operates thousands of miles of above ground and underground distribution lines. Locating the lines above or underground is considered when original installation occurs. Today only 20% of new line construction in NSPM is overhead.

Here are some of the reasons why we initially build lines underground:

- If an entity, such as a local government or developer, is willing to pay the additional costs to underground the line.
- Installation of above ground facilities is not achievable because of physical limitations such as: roadways, railroad lines, and topographic land issues.
- We have enough room in the public right-of-way to install our facilities, which includes using bores and making large trenches.

Here are some of the reasons we initially build lines overhead:

- Constructing and installing lines underground can cost more than twice overhead construction practices.
- We don't have enough room in the public right-of-way to install our facilities. This is often true in urban or already developed areas.
- Topographic conditions, such as bodies of water or excessive hills and valleys, are cost prohibitive.
- It can be more difficult to find faults in underground lines, which means it can take longer to repair them and to restore power.
- As underground lines move towards their end-of-life failure rates increase significantly and will cause frequent outages.
- Overhead lines have a longer life than underground lines.
- When underground lines reach end of life, the cost to replace is much higher than overhead and is disruptive to the customer.
- Avoid damage to our lines from other utility work in public right-of-way.

Issues with replacing existing overhead lines with underground lines:

- Conversion of lines from overhead to underground is more than three times the cost to initially build a line overhead
- Conversion of lines disturbs mature landscaping and other infrastructure
- In NSPM, if all lines were converted the average residential utility bill would double
- Customers would experience additional expenses associated with their facilities during Xcel Energy's conversion of overhead to underground

	NSPM	NSPW	PSCO	SPS
% of new construction that is underground	80%	30%	95%	30%
Residential Bill increase if all OH lines are UG	101%	218%	240%	700%
% of existing distribution OH	59%	78%	43%	95%
Average % cost increase to UG vs OH – new construction	158%	127%	241%	233%
Average % Cost increase to convert OH to UG compared to original OH	216%	184%	284%	415%