Overhead/Underground Power Lines

Does Idaho Power offer the alternative of installing power lines underground?

Idaho Power's standard practice is to utilize overhead facilities to provide the most cost-effective service to its customers.

Underground transmission facilities are much more expensive and complicated to install and operate.

If Idaho Power were to receive a request to bury a proposed transmission line, it would require advance payment from the requesting party to perform a detailed engineering analysis of the project.

If the project were determined to be feasible, additional advance payment would be required from the requesting party for the increased cost of installing and operating the transmission line underground.

What factors affect whether transmission lines can be installed underground?

While technologies are emerging for underground transmission lines, there are currently several disadvantages to using them.

Reasons that discourage utilities from using underground transmission lines include:

- Less Capacity

  Underground cables carry far less capacity than overhead lines in similar sized cables; therefore, much larger cables are required to achieve the same capacity.

- Operations and Maintenance

  While underground lines would be less susceptible to weather related outages (e.g., wind, ice, fire and trees), a cable failure would be more difficult and take longer to repair. When repairs are needed, greater time constraints are required to find, excavate and fix the problems. When a failure of underground equipment does occur, the repair times on an underground cable can be expected to take more than two weeks per segment of cable (even if a spare duct bank and material are readily available), whereas repairs on an overhead segment can be completed much faster.

- More Equipment

  Typically, more aboveground substations are required for underground lines. In addition, underground splice vaults (large concrete encased structures) are required approximately every 1,000 to 1,600 feet, depending on the voltage.

- Disturbance and Impact

  Underground transmission lines require large excavations through all habitat types. Approximately 50- to 80-foot-wide areas are needed to be cleared for construction and maintenance for the length of the route for underground lines. The right of way needs to remain free of woody vegetation to prevent interference to the underground lines from tree roots. Access roads also need to be maintained for underground lines for maintenance and repair.

- Less Reliable

  Underground systems tend to be less reliable than overhead installations due to a variety of factors (like conductor heat buildup, underground water and bacteria). An underground conductor may last only 20 years, whereas an overhead line can last as long as 100 years.

- Visual Resources

  Underground lines would remove most of the concerns of visual impacts associated with a traditional overhead transmission line system but the right of way could be more visually apparent due to vegetation management.

- Costs

  Estimates vary widely, but literature indicates costs could be as much as 10 to 20 times the cost of overhead transmission lines. It is the responsibility of Idaho Power to provide power to customers using the least-cost alternative. The most affordable industry standard is to use overhead power lines.