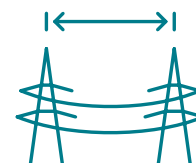


Underground cables or overhead lines?

Elia is the operator of the Belgian high-voltage electricity grid from 30 kV to 380 kV, which consists of over 8,965 kilometres of connections, comprising 5,596 km of overhead lines and 3,369 km of underground cables. When expanding the grid, Elia always tries to use existing infrastructure as much as possible.

Existing overhead lines

Where an overhead line already exists, Elia opts to develop it further. Elia then hangs **additional or new conductors** that can transport more electricity. In some cases, the existing overhead line is dismantled and a new overhead line able to transport more electricity can be **built at the same location**. The advantage is that the existing infrastructure and routes are thus used optimally and **without new impact**.



Number of kilometres of overhead lines remains the same

The total number of kilometres of overhead lines in Belgium is no longer increasing. If a new overhead line is erected somewhere, another must be brought underground elsewhere.

In doing so, Elia is consistently seeking an optimum balance between integration into the landscape and security of supply.



Overhead lines



Underground cables

New connections: underground or overhead?

1 30 kV, 36 kV and 70 kV connections: underground installation

Both existing and new connections at low voltage levels (30 kV, 36 kV or 70 kV) are realized underground, once a feasibility study has been conducted.

2 New 110 kV and 150 kV connections: underground installation possible

New connections from 110 to 150 kV are increasingly being laid underground. If the site allows it and if the necessary studies are favourable, Elia will make the proposal. For existing links, see paragraph below.

3 New 220 kV and 380 kV connections: overhead installation

New 220 to 380 kV connections are realized above ground, following existing routes through rural, residential and protected areas as much as possible. Wherever feasible, **overhead lines are bundled with other infrastructure**, such as existing high-voltage connections, railway lines and motorways.



Why not underground?

It is technically possible to construct short sections of a 220 kV or 380 kV line underground, but **operation at these voltage levels is still under development**. There are more malfunctions and the risk of **grid instability** is much higher than with overhead lines. Experience shows that it takes much longer to rectify these malfunctions. Given the need to guarantee security of supply, the large-scale use of underground connections is therefore not justifiable. **More experience** must first be amassed around the world before we could possibly consider it.



Click for more information about the 380 kV [Ventilus](#) and [Boucle du Hainaut](#) projects.

More info?