

# Sustainable cities

## Energy scenarios for the future

Renewable energy sources have started to bring profound changes to traditional methods of energy distribution. For almost a century, electricity has been travelling over long transmission lines from power plants to residential, commercial and industrial settings within a centralised system, in which each component is highly dependent on the others. The use of alternative energy sources may start a process of decentralisation, which could lead to a more efficient and reliable system, apart from being more environmentally friendly, and the autonomy of this new system could spare people problems concerning energy availability. Decentralising power distribution could, in fact, make the system much less exposed to dangerous natural events and less affected by demand overload.



## An example of an energy autonomous town

In Germany, the small town of Feldheim, situated southwest of Berlin, is supplied entirely with energy that comes from renewable sources via an autonomous local grid: electricity comes from a nearby windfarm and heat is provided by a biogas power plant. This has allowed this small town to disconnect from the national grid and its landscape is untouched by high pylons or cables and pipes connecting the city's buildings, as all of the electrical cables and heating pipes run beneath the streets.

One of the greatest benefits comes from the fact that the locally produced heat and electricity are directly fed to the users, saving money and allowing consumers to be independent from conventional utility companies.

Adapted from: <https://www.nytimes.com/2013/10/09/business/energy-environment/bypassing-the-power-grid.html>

to feed: *somministrare*



### 1 Decide whether the statements are true or false and correct the false statements.

- |  | T                        | F                        |   | T                        | F                        |
|--|--------------------------|--------------------------|---|--------------------------|--------------------------|
| 1. In a centralised system, each component depends on the others.  | <input type="checkbox"/> | <input type="checkbox"/> | 4. Feldheim relies mainly on solar energy.  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Decentralisation can make the grid more inefficient.  | <input type="checkbox"/> | <input type="checkbox"/> | 5. The transmission lines going across Feldheim ruin its landscape.                   | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. When the different components of the grid do not depend on each other, many power supply faults can be avoided. | <input type="checkbox"/> | <input type="checkbox"/> | 6. Utility companies are still paid by the residents to supply them with electricity. | <input type="checkbox"/> | <input type="checkbox"/> |