How does the energy transition succeed?

Renewable energy is being expanded on a massive scale throughout Europe, and Germany remains one of the major drivers in the push for clean energy. With a full wind harvest, our northern neighbour’s installed wind capacity alone would be sufficient to cover Austria’s peak consumption almost five times over. Germany’s photovoltaic installations provide the same output again.

The power grid is becoming more and more of a bottleneck. At peak times, the grid’s transmission capacity is no longer anywhere near sufficient to deliver all of the energy to consumers that is generated when wind and solar power production levels are high. Grid operators find themselves more and more often in the situation of having to decouple wind turbines from the power grid to keep the grid stable. This is because to some extent we are still living off the “nuts and bolts” of an infrastructure that was built in the last century and requires constant upkeep and improvements.

Austria has responded by planning important line projects that urgently need to be implemented so that the efficiency and stability of the power grid can continue to be guaranteed.

GRID EXPANSION: WHERE WE STILL NEED POWERLINES
Further information

Salzburg line – the No. 1 energy transition project

The 380-kV Salzburg line is one of Austria’s most important energy transition projects as well as being a project of common interest as defined by the European Network of Transmission System Operators for Electricity (ENTSO-E). Closing the gap in Austria’s 380-kV ultra-high voltage grid between the nodes at St. Peter (in the state of Upper Austria) and Tauern (in the state of Salzburg) is urgently necessary to cope with the growing volumes of electricity being fed into the grid from renewable energies. The Salzburg line is also pivotal in supporting the regional power grid in the state of Salzburg. The new 380-kV line section between the substations at Salzburg and Kaprun will be approximately 114 km in length. The 220-kV line connecting the substations at Pongau and Wagrain/Mayrdörf will cover a distance of approximately 14 km. After years in the planning stages, APG has submitted a grid concept that will greatly reduce the burden on the Salzburg substation. Following construction of the Salzburg line, it will be possible to dismantle almost 200 km of existing 220-kV and 110-kV power lines, some of which now run very close to or even through populated areas. All in all, 678 electricity towers will be able to be dismantled. The investment volume will amount to approximately €800 million. In a ruling issued on 5 March 2019, the Federal Administrative Court in Vienna upheld the environmental impact assessment (EIA) approval notice for one of Austria’s most important infrastructure projects. The project has undergone one of the lengthiest reviews of any infrastructure project in Austria, with court proceedings having lasted a total of 77 months between the first instance and the proceedings before the Federal Administrative Court.
Construction of the APG Weinviertel line replacement

The Weinviertel line, which runs through the north-eastern Weinviertel region, was built 70 years ago and is now in need of extensive renovation. Since this is a region containing large-scale wind farms, and additional wind projects are planned, the existing line is reaching the limits of its transmission capacity. Moreover, electricity consumption has risen considerably in recent decades.

After having requested approval from the state of Lower Austria to replace the 77-km-long line, APG received the green light from the Federal Administrative Court in November 2018 upon conclusion of the appeal proceedings. APG was able to reduce the length of the route by around 15 km by improving the power line routing within the bounds of local possibility. Construction is set to commence in mid-2019. The investment volume will amount to €200 million.
Germany line

The 380-kV Germany line is one of Austria’s most important energy transition projects and is also a project of common interest as defined by the European Network of Transmission System Operators for Electricity (ENTSO-E). The power line connections to Austria’s neighbours have gained massively in importance with the integration of the electricity market. The concept behind the European energy transition is to be able to transmit electricity to consumers Europe-wide from the major wind power plants and solar power generators. This is why APG is reinforcing one of its cross-border power lines. Construction of the 2.5-km-long, 380-kV power line from St. Peter am Hart in Upper Austria to neighbouring Bavaria across the German border began in November 2018. APG is investing around €29 million in the project. Rapid expansion of the 380-kV line running to Altheim on the German side is also important in creating a connection to the German power grid that will remain viable in the future.
Projects of common interest (PCIs)

Having a state-of-the-art infrastructure made up of reliable power grids is crucial to achieving an integrated European energy market, which in turn is essential for being able to provide all consumers with the most cost-effective energy possible. What is more, adapting the existing European grid structure to be able to handle energy generated from renewable sources (wind and solar) is the basis for achieving Europe’s climate targets. On 14 October 2013, the European Commission therefore approved a list of 248 strategic energy infrastructure projects – including some 140 projects for electricity transmission and storage. Two of these projects involve the Salzburg line and the Germany line.

Thanks to these projects, the European power grid – and consequently the Austrian power grid – will be able to integrate increasing quantities of electricity from renewable sources of energy, which will enable a significant reduction in CO2 emissions and thus help achieve the EU’s ambitious climate targets.