

Energy future Europe 2024

The Austrian
electricity industry's
roadmap for the European
energy system





Security of supply, affordability and sustainability

The European Commission has set itself the target of making Europe the world's first climate-neutral continent by 2050, and has adapted its climate policy agenda to create an economic agenda. Meeting this extremely challenging goal will only be possible if the whole of Europe pulls in the same direction. The EU's institutions have agreed on a framework that will have to be monitored, advanced and, in places, adapted during the next legislative period. In view of the EU's 2040 climate target, for which negotiations are still to be held, it will be essential to quickly achieve a level of certainty that will support progress towards climate neutrality by means of specific and reliable measures.

Physical energy exchange between Austria and its neighbouring countries 2023

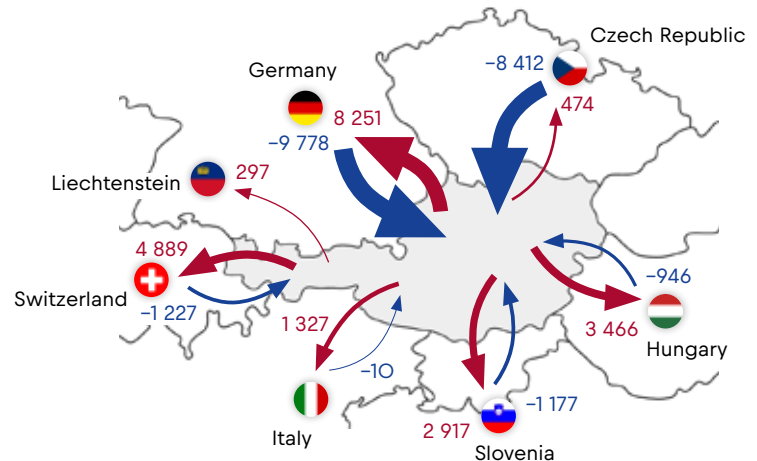
■ Exports ■ Imports

Exchange balance (+) = net exports

Exchange balance (-) = net imports

Source: E-Control, Association of Austrian Electricity Companies

Figures in GWh



In order to meet the challenge facing Europe, Oesterreichs Energie will focus on the core elements of the electricity industry – security of supply, affordability and sustainability. Therefore, we are calling for:

- **national implementation of current EU legislation on energy and climate targets**
- **a concerted effort to expand renewable generation**
- **expansion of grid infrastructure**
- **an electricity market design that promotes stable investment conditions**
- **a resilient Europe**

In order to ensure long-term planning certainty and strengthen the European internal market, previously agreed European targets for achieving climate neutrality must be implemented in good time and uniformly at national level. The expansion of renewable generation will play a key role in climate protection. Rapid authorisation procedures and coordinated zoning are required in order to achieve the ambitious targets and create a stable investment environment.

Grid infrastructure will form the backbone of the energy transformation. Infrastructure will have to be expanded accordingly in order to satisfy increasing energy demand and to integrate renewable energies efficiently. A stable investment

environment, which is essential in terms of financing the restructuring of the electricity system, is another key factor. The electricity market design must prevent market distortion. In addition, customers will play a vital role in the decentralised electricity system of the future and must be involved accordingly.

Developments in recent years have shown that Europe must take a stronger stance in future when it comes to the continent’s competitiveness as a business location and its geopolitical role. Against this backdrop, systematic restructuring of the energy system represents both a challenge and an opportunity. In order to boost the continent’s resilience, it is imperative that we drive forward the restructuring of the energy system, create favourable conditions and facilitate close European-level collaboration in all key areas.



“Austria’s energy sector is facing huge challenges. The country is supposed to become climate-neutral by 2040 – but we can only achieve this if we pull in the same direction at all levels.”

Michael Strugl, President, Association of Austrian Electricity Companies



1. National implementation of current EU legislation on energy and climate targets

In its previous period of office, the European Commission adopted numerous pieces of legislation as part of the Fit for 55 package in order to accelerate the energy system restructuring process and pave the way for achievement of the 2030 energy and climate targets and the shift to a climate-neutral economy by 2050. In order to achieve these ambitious goals, steps must be taken to ensure that previously adopted European legislation are implemented at the national level in good time. Speedy implementation of statutory regulations in all Member States and avoidance of far-reaching interventions by way of Commission delegated and implementing acts will create long-term planning certainty and prevent fragmentation of the European internal market.

European Commission to support Member States with implementation

The Renewable Energy Directive (RED III) gave Member States an instrument that is intended as a means for simplifying and accelerating authorisation procedures for renewable energy projects. When weighing up the various interests in

authorisation procedures, Member States should presume that renewable generation plants, related grid infrastructure and storage facilities are in the overriding public interest and also serve public health and safety. Now, the priority must be to breathe life into this positive development. The first step has already been taken with the establishment of a dedicated expert group at the European Commission. The Commission should support the Member States when it comes to implementation, act as a hub for best practice and use national energy and climate plans to manage target attainment.



“Instead of discussing targets we should put a stronger emphasis on implementation over the coming years. The road lies ahead of us – but we have to actually move along it as well.”

Barbara Schmidt, Secretary General, Association of Austrian Electricity Companies

2. Concerted effort to expand renewable generation

Renewable energy will play a significant role in protecting the climate. This will require a huge increase in renewable generation backed by a stable investment environment, in combination with expanded, high-efficiency storage facilities and substantial strengthening of electricity grids. Investment will be needed on a massive scale: in Austria alone, the required investment in grids, storage and generation will amount to at least EUR 60bn by 2030.

Austria's energy and climate policies set out ambitious targets – full coverage of the country's total electricity demand (national energy balance) from renewable sources from 2030 onwards will play a major part in achieving them.

Rapid authorisation procedures and coordinated, ambitious zoning are the keys to successfully growing renewable generation. The RED III includes effective approaches in both areas, which could speed up this expansion given appropriate implementation at the national level.

Expansion of renewables requires diverse business models

The threat of an economic downturn for renewable electricity generation plants has been largely averted in the EU electricity market design reform. However, a measured approach will be needed when implementing the required changeover in the support payment scheme to a contract for difference (CfD) system. Outside the future CfD system, policies designed to skim off excess profits and similar instruments should be avoided in order to ensure legal certainty as well as the availability of the capital required for substantial investments.



Hydropower to play a central role in renewable expansion

Although wind power and photovoltaic (PV) systems are becoming increasingly widespread, hydropower is still the bedrock of Austria's renewable energy landscape. At around 40 TWh, or 60% of total power generation, it accounted for a significant proportion of total electricity supply in 2023. Alongside its role as a renewable energy source, hydropower stands out for its high degree of flexibility, which is vital in ensuring the secure and stable operation of the electricity grid. This aspect is gaining in importance, particularly in view of the increasing integration of variable wind and PV generation.

Pumped storage power stations with natural inflow (reservoirs) and run-of-river power plants can also deliver flexible power generation at short notice – in seconds or minutes, and across seasonal periods. These facilities allow us to cover shortfalls and maintain system stability when current electricity generation is not sufficient to satisfy demand.

Pumped storage power plants are also central to electricity storage. They withdraw excess electricity from the system and make it available again when demand peaks occur. Although the use of emerging technologies such as battery storage, power-to-gas plants and hydrogen storage is also on the rise, pumped storage still accounts for over 90% of the EU's available storage capacity. In order to leverage the full potential of hydropower and ensure efficient resource allocation, it is essential that legislative initiatives ensure fair competition between the various technologies. In this regard, it is important to prevent possible discrimination by Member States when implementing the legislation.

Specific improvements in the Taxonomy Regulation are also necessary in this respect – at present, the regulation specifies more wide-ranging criteria for hydropower than the Water Framework Directive. Furthermore, the RED III currently includes an option at the national level for excluding hydropower from the accelerated procedures that are vital for bringing about the energy transformation. Similarly, national tariff discrimination – which occurs in Austria, unlike in neighbouring countries, when determining system charges for electricity storage facilities – must be prevented by ensuring a level playing field is in place at the European level, in order to ensure fair cross-border competition.

Workable rules for biomass

Generation of electricity (and heat) from biomass at combined heat and power (CHP) plants will also play an important role in Austria when it comes to increasing the share of renewables in the electricity and energy system. The RED III sets out strict sustainability rules, including extensive and time-consuming certification requirements for the fuels used, which will now have to be implemented in Austria.

Oesterreichs Energie supports these sustainability rules because, in principle, they can be fulfilled, and because they underline the industry's sense of responsibility in the use of forest biomass. However, especially in view of its negative experiences regarding the timely and practicable implementation of the RED II sustainability criteria in this sector, the industry insists on ensuring legal certainty and unbureaucratic implementation. Consequently, we favour making the regulations permanent and call for them to be implemented as quickly as possible at the national level, with barriers to implementation kept to a minimum. We welcome the exceptions to the principle of cascading use specified in the RED III. This means that solid biomass can serve as a transitional solution to ensure energy supply security.

Red tape should also be avoided when implementing the annual submission of sustainability certificates and figures for sustainable energy volumes, due to the differences between the audit and reporting periods. The need to purchase CO2 allowances in the event of a lack of certificates for biomass used in the value chain should be avoided at all costs. The highly efficient system currently in place for the supply of energy from biomass was made possible partly by means of various support schemes, so it is important that investment certainty is maintained for the remaining period of the support payments (as stipulated in the Austrian Renewable Energy Expansion Act).



3. Network expansion – a key pillar of the energy transformation

Grid infrastructure will be the mainstay of the energy transformation. Heat pumps, e-mobility and the decarbonisation of industry are leading to rising energy demand. Large-scale integration of wind and PV systems into grids is essential. However, the fluctuations in generation from these technologies must be taken into account. PV systems in particular inject large quantities of electricity into the grid on a decentralised basis – which has an impact on all grid levels. This also poses major challenges for Austria's distribution and transmission networks, which have to deal with enormous peak loads and injection peaks.

Promoting anticipatory investments

Especially over the coming years, forward-looking investments by distribution system operators (DSOs) will be vital for building a future-proof, climate-neutral and resilient energy system. According to a 2022 study¹, this requires a

stable regulatory framework that promotes and provides appropriate incentives for such anticipatory investments. To achieve this, DSOs need to receive appropriate financial returns on their investments. Investment is urgently needed in order to improve and digitalise physical infrastructure, with a view to enhancing observability and manageability. However, outdated legislation can be an obstacle to forward-looking investments by DSOs, as investments that do not directly satisfy a particular demand are regarded as inefficient. In addition, system charges that include a stronger performance component give customers incentives to optimise their consumption and generation, while also helping to enhance the efficiency of the entire energy system.

It is essential that system operators make investments with an eye on the future. In this regard, an even distribution of risk and further regulatory clarification will be extremely important so that financial disincentives in case of underutilised grid capacity can be avoided. In order to facilitate adaptation to the constantly evolving energy system, the EU should insist on a forward-looking regulatory framework in the Member States that promotes proactive network planning and puts suitable instruments at DSOs' disposal (e.g. the right of system operators to limit load, flexible system access, etc.).

¹ Study: Der volkswirtschaftlich Wert der Stromverteilnetze auf dem Weg zur Klimaneutralität in Österreich (The economic value of electricity distribution networks on the road to climate neutrality in Austria; German only)

Steps should also be taken to ensure non-discriminatory access to financing and funding instruments at EU level, regardless of the ownership structure – in other words, whether a market participant is publicly or privately owned.

A key role for flexible smart grids

Grid digitalisation is crucial in order to support the transition to renewables and overcome the challenges posed by volatile generation. Smart meters that are replacing conventional metering equipment enable remote monitoring of energy consumption and generation, as well as simplifying reliable data collection. These data can support forecasting and management of electricity demand and supply, and also enable customers to adjust their consumption in line with network conditions. The availability, collection and use of these data by DSOs is a fundamental component of every aspect of grid operation. They enable opportunities to be opened up for consumers and energy suppliers alike as regards digital customer processes and flexibility services, and also promote efficient and sustainable energy use. In view of these goals, it is imperative that data sovereignty and data manageability for system operators are preserved so as to safeguard both system security and cybersecurity in the network.

System operators currently implementing projects for the energy transformation

Austria's system operators are playing a pioneering role and are developing concepts that will help to bring about the energy transformation. Examples of best practice in projects implemented voluntarily by system operators include:

- ebUtilities information platform² (for publication of industry-specific technical documentation on business processes and data formats for market communication)
- Smart meters: customer interface adapter for the standardised integration of various technical standards³; regulatory body⁴ monitoring compliance with rules of conduct for the processing of personal data
- Austrian Energy CERT (AEC)⁵ to build up IT security expertise in the energy sector

² www.ebutilities.at/

³ <https://oesterreichsenergie.at/publikationen/ueberblick/detailseite/lizenzvertrag-fuer-smart-meter-adapter>

⁴ <https://oesterreichsenergie.at/wir/services/ueberwachungsstelle-fuer-verhaltensregeln/allgemeine-informationen>

⁵ <https://aec.arge.or.at/index.php/de/home.html>



4. Electricity market design must be fit for the purpose of addressing energy policy challenges

A stable investment environment is an essential prerequisite for the achievement of European and national energy objectives. A competitive market is the most efficient market design for financing system restructuring. Oesterreichs Energie welcomes the current reform of the European electricity market design as it represents a meaningful step forward. It is important that a fundamental social consensus is reached to realise this change process, based on a commitment to affordable energy supplies for end customers, the preservation of industrial competitiveness and the achievement of climate neutrality.

Refraining from intervention in tried-and-tested market and price-formation mechanisms is the correct approach, as a merit order with pay-as-clear pricing ensures optimum use of available generation capacity. This model is the best available option in order to send accurate scarcity price signals to

market participants. It also provides incentives for possible or necessary adjustments in demand by consumers, and for investments in new generation capacity. Cost-effective use of available generation capacity prevents market distortion and ensures that as many renewable generation stations as possible – which are also cheaper to run – actually produce electricity. This also minimises CO2 emissions.

The interaction between the Austrian electricity market and neighbouring countries/markets is an important, if not the most important, factor in the energy transformation. Therefore, Oesterreichs Energie supports moves to further develop the European internal electricity market through the integration of national markets. In this respect, we call for action to simplify network expansion, in view of the need to integrate fragmented renewable generation into the markets, and to integrate national markets. Taking into account seasonal imbalances, long-term security of supply can only be ensured by means of a sufficiently extensive grid with the widest possible range of exchange options, including across bidding zone boundaries (target of 70% in the day-ahead market by the end of 2025).

5. Resilience of Europe's electricity industry

The Covid-19 pandemic and Russia's invasion of Ukraine have laid bare Europe's vulnerability. The electricity industry comprises critical infrastructure, which makes it particularly vulnerable, and the sector therefore requires a straightforward economic support initiative – along the lines of the US Inflation Reduction Act (IRA) – to bring about the energy transformation. This could also build resilience in Europe, particularly in connection with the following segments:

LOW-RISK SUPPLY CHAINS

Keeping key infrastructure in Europe, or bringing it back, must be a leading priority. The EU Green Deal Industrial Plan must ensure that electricity industry supply chains are low-risk and that production in critical areas is relocated to the EU. By contrast, the initiation of anti-dumping and/or anti-subsidy investigations and the imposition of tariffs on imports of particular goods could have a detrimental effect on the entire European value chain.

SKILLED WORKERS FOR THE ENERGY TRANSFORMATION

Considering continuing advances in technology, as well as the challenges we are currently facing, qualified and versatile specialists will have a decisive part to play in driving the energy transformation. Funding earmarked for energy infrastructure upgrades as part of the shift towards climate neutrality must also be used to increase expertise and human resources. Such spending will be essential in driving forward the energy transformation.

ENABLING THE DEVELOPMENT OF INNOVATIVE TECHNOLOGIES

Sector coupling

If we fail to take a holistic view of the energy system, with a view to achieving sector coupling, important opportunities to improve cost effectiveness will be overlooked. Effective integration of the electricity, gas and heating sectors could help to minimise overall system costs for consumers and industry.

Ramping up the hydrogen industry

During the previous legislative period, the Fit for 55 package – and particularly the decarbonisation package – laid the foundations for regulation of the hydrogen industry. In the coming legislative period, there will need to be an emphasis on extending and supplementing the framework and making progress on implementation. These plans for European legis-



lation will have particular significance at the national level, in particular the strict implementation of the industry quota set out in the RED III and creation of a regulatory framework for hydrogen networks.

Certification systems for hydrogen are yet to be introduced at the EU level. These are crucial for the allocation of quotas to consumers. Rapid publication of the required delegated acts on the definition of low-carbon hydrogen (within 12 months of entry into force) in the decarbonisation package (Gas Directive) is also absolutely essential.

Besides ramping up production in Europe, diversified import routes will also have to be opened up in order to secure supplies of hydrogen for the EU in the long run. Under the RED III, the Commission is required to prepare an import strategy. All participants involved in the ramp-up of the hydrogen industry will require details of this strategy in good time. The EU should also support activities on the market and in Member States by means of international agreements. The aim should be to facilitate private investment and create legal certainty for investors.

In view of the significant shortfalls in the profitability of hydrogen projects, further action to develop the European Hydrogen Bank is required. The first Hydrogen Bank auctions (domestic leg) took place in the first quarter of 2024; the international leg (aimed at promoting imports from third countries) will have to be initiated at the earliest possible stage.

The scale of support payments must also be appropriate to allow for the implementation of individual pilot facilities as well as large-scale projects.

It should also be noted that Europe-wide hydrogen infrastructure will be required from 2030 so that the continent can receive hydrogen imports from third countries. Here, it is essential that landlocked countries are involved in this process and in a position to connect to the network from the very beginning, otherwise the attractiveness of the regions concerned as business locations will come under threat.

ENABLING FRAMEWORKS

EU support programmes can facilitate projects designed to implement the energy transformation. However, support payments alone will not be sufficient – workable administrative rules for the implementation of cross-border business models will also be required.

EU support programmes

Energy and climate protection must be given priority in the EU budget. There has never been a more decisive time to ensure that EU support programmes fulfil their intended purpose and to increase allocations to the programmes.

The design of calls for support payment applications must be as technology-neutral as possible, and promote research activities as well as investments in market-oriented demon-

stration projects. There should also be a focus on ensuring the fair distribution of funding between the Member States, in line with the various framework criteria (e.g. project size, availability of resources, etc.). Likewise, the administrative burden of submitting and processing applications must be significantly reduced, and funding-related processes speeded up and made more flexible. Close coordination and interlocking of European and national support programmes could also help to enhance the attractiveness of funding, for instance through the use of identical or similar calculation and application forms, by means of simplified access to national support payments for projects that receive an excellent rating at the European level, but do not receive support payments due to budget restrictions.

Practicable legal framework – example: e-mobility

European citizens are increasingly using electric vehicles, and many are opting for subscription-based payment options offered by e-mobility service providers (eMSPs) for charging at publicly accessible charging stations. This allows vehicle users to move freely between Member States and pay for charging with a single subscription thanks to the roaming services offered by eMSPs.

Under the current VAT Directive, eMSPs must be registered in every Member State where they allow subscribers to charge their vehicles, as they are liable for VAT in all of the Member States in which they operate. The associated bureaucracy and administrative costs represent an obstacle to Europe-wide, cross-border vehicle charging services.

In order to achieve legal certainty and reduce the administrative workload for eMSPs, a comprehensive solution for the tax treatment of cross-border vehicle charging is required. The resulting increase in the use of roaming services by eMSPs will boost competition, resulting in lower costs for customers. Expanding the range of competitive offerings for consumers will contribute to the enhancement of the framework for decarbonisation of the transport and mobility sector further down the line.



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