Efficiency! first

Urban Energy Efficiency Programme 2030

Summary

SEP 2030

Vienna! ahead
Energy Planning

City of Vienna

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Urban Energy Efficiency Programme 2030 (SEP 2030)

Summary

Vienna, January 2019

Foreword

Climate protection is one of the great challenges of our times. Cities worldwide have a key role to play in finding and implementing solutions for the climate crisis. Vienna aims to take on a model function in the area of green energy supply and to undertake ambitious steps.

In order to overcome the challenge, many different measures are needed – improving energy efficiency is an important part of them. Our goal must be to manage with considerably less energy than today thanks to increased efficiency, thus making an important contribution to climate protection and the long-term security of our energy systems. Increasing energy efficiency is of paramount importance if we are to meet our energy and climate goals.

With the Urban Energy Efficiency Programme 2030 (SEP 2030), Vienna shows how these goals can be met. Increasing energy efficiency is not only the key to meeting our climate and energy policy objectives, it also supports social and economic policy goals, improves local value creation, and reduces energy poverty. The new SEP 2030 is an implementation programme for the Energy Framework Strategy 2030 and is in line with the goals of the Smart City Wien Framework Strategy.

Vienna has been on a consistent path towards more energy efficiency since the 1990s. The list of the city's landmark decisions includes the changeover to district heating using high-efficiency cogeneration, waste incineration, and industrial waste heat, and the introduction of subsidies for the thermal energetic refurbishment of residential buildings. In 2006, the Vienna City Council adopted the first Urban Energy Efficiency Programme (SEP), which prioritised increasing energy efficiency and saving energy. This comprehensive view of energy efficiency at all levels has since been characteristic of Vienna's energy policy. The Vienna City Administration is well aware of its responsibility to lead by example when it comes to energy efficiency. Therefore, SEP 2030 contains numerous bundles of measures specifically for the City Administration and its enterprises, particularly in the areas of buildings and mobility.

Maria Vassilakou
Ulli Sima
Kathrin Gaal

Much has changed in building refurbishment in the last years. The City of Vienna has subsidised the comprehensive refurbishment of many residential buildings. Refurbishment and urban renewal will continue to be important areas of activity to ensure that housing remains affordable and the city's high quality of living is preserved.

The mobility sector, in particular, has the potential for high increases in efficiency. An increasing number of people prefer to travel by bus, tram or underground – thanks to not only the cheap yearly public transport pass but also the ongoing expansion of the public transport network and shorter intervals. As a result of this development, more people in Vienna now own a yearly pass than a car. In addition, the city is continuously investing in cycling and walking infrastructure.

SEP 2030 ensures that energy efficiency remains a high-priority topic on Vienna's agenda, pooling all resources to implement measures that help increase energy efficiency at all levels.

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Summary

Energy efficiency as a political priority

The efficient use of energy has been a high-priority item on the energy policy agenda of the City of Vienna since the 1990s. Important measures included the shift to district heating from high-efficiency cogeneration, which began in the 1990s, and the thermal energetic refurbishment of residential buildings, which has been subsidised since 2000. The framework for these and other measures is provided by the city's climate protection and energy efficiency programmes KliP and SEP.

Over the last 15 years, energy efficiency has become increasingly relevant at EU level, as well. With the Energy Performance of Buildings Directive[1], the Energy Efficiency Directive[2] and the Ecodesign Directive[3], the EU has created a regulatory framework for the improvement of energy efficiency, particularly in buildings and products.

The goal is to reduce energy consumption across the EU by 32.5 percent and carbon dioxide emissions by at least 40 percent (from 1990 levels). Since 2015, increasing energy efficiency has been one of the five dimensions of the energy union, which is among the EU's priorities. The objective of a crisis-proof energy union based on an ambitious climate policy is to ensure that private households and businesses in the EU have access to secure, sustainable, competitively generated and affordable energy. The "Clean Energy for all Europeans" package proposed by the European Commission simplifies and updates a number of energy-related legislative acts (including the Energy Performance in Buildings Directive, the Energy Efficiency Directive, and the Renewable Energy Directive) in aid of reaching the goals.

Increasing energy efficiency is not only of paramount importance for reaching energy and climate policy goals, it also supports social and economic policy goals, promotes local value creation, and helps reduce energy poverty.

At the Austrian level, the Energy Efficiency Directive 2012/27/EU was transposed into national law with the Federal Energy Efficiency Act[4]. In addition to limiting final energy consumption to 1,050 Petajoule in 2020 (2016: 1,121 Petajoule), it also obliges energy suppliers to implement energy efficiency measures at end customers and promotes energy saving in (large) businesses through energy audits and energy management.

With #mission 2030[5], the Austrian climate and energy strategy introduced in June 2018, the government took a long-term view to 2030, setting the following targets: a 36 percent reduction in CO_2 emissions compared to 2005, an increase in primary energy intensity by 25 to 30 percent from 2015, and a 45 to 50 percent share of renewables in gross energy consumption.

However, these improved regulatory frameworks are confronted by economic conditions that run counter to their goals (lower prices for fossil energy, increasing but still low cost of CO_2 certificates, low economic growth), which threaten the economic viability of energy efficiency increases.

The City of Vienna set a long-term course towards decarbonisation in 2014 with the Smart *City Wien Framework Strategy*[6], which contains goals up until 2050. It aims to reduce CO2 emissions dramatically by 2050 by means of development and transformation processes in the energy,

1 Directive (EU) 2018/844 of the European Parliament and of the Council of 30 May 2018 amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency

2 Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency

3 Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products

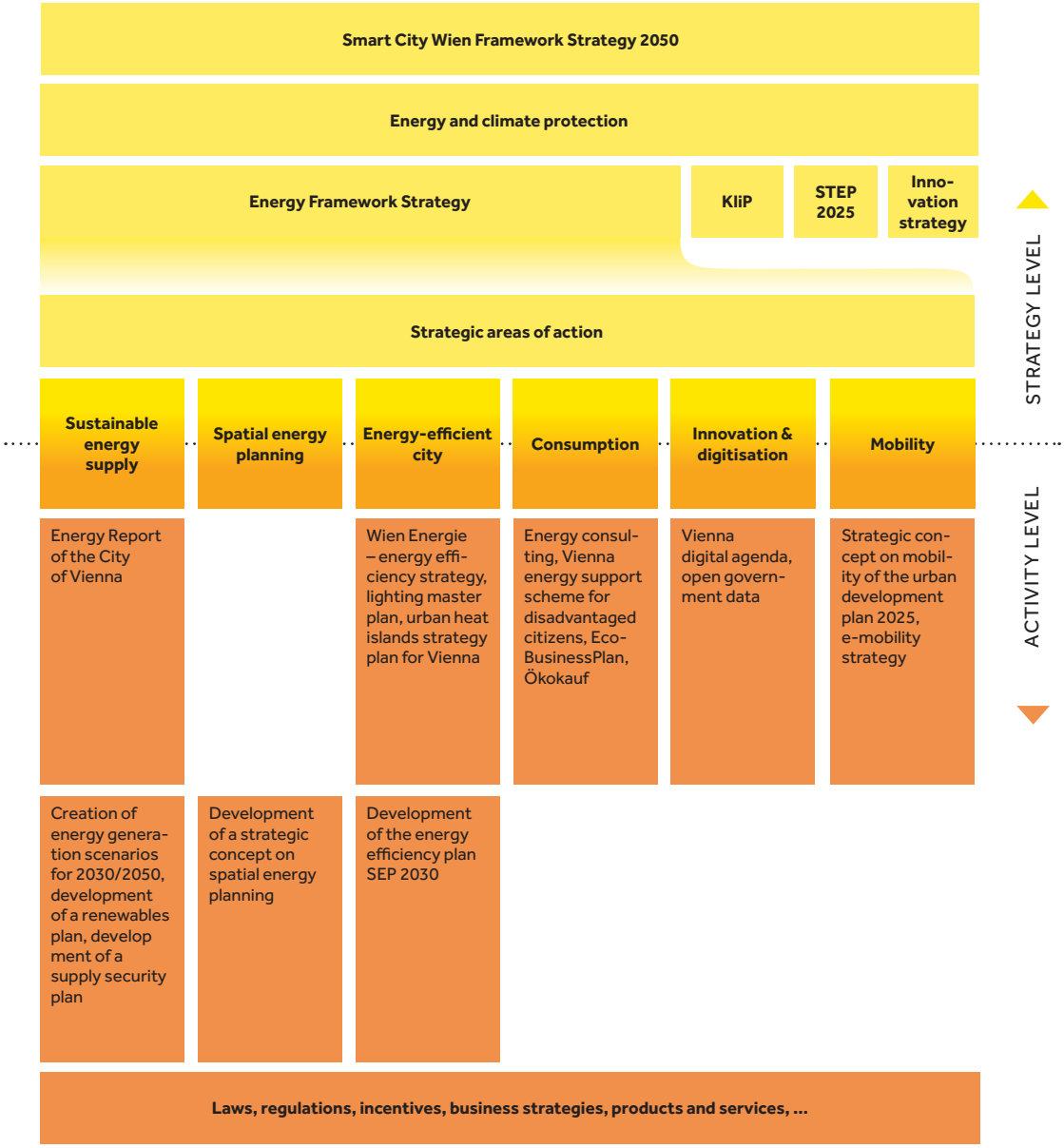
4 BGBl. I Nr. 72/2014

5 Bundesministerium für Nachhaltigkeit und Tourismus und Bundesministerium für Verkehr, Innovation und Technologie (Ed.) (2018): #mission2030. Die österreichische Klima- und Energiestrategie, www.mission2030.bmnt.gv.at

6 Magistrat der Stadt Wien, Magistratsabteilung 18 – Stadtentwicklung und Stadtplanung (2014) (Ed.): Smart City Wien Rahmenstrategie, ISBN 978-3-902576-88-0

mobility, infrastructure and buildings sectors. The 2017 monitoring report of the Framework Strategy showed that Vienna's energy and climate goals need to be adjusted as a result of the Paris Agreement. The Framework Strategy will be updated in 2018/2019. In the medium term, the climate protection programme KliP and the Energy Framework Strategy 2030[7] will lay the foundation for the implementation of the energy and climate goals of the City of Vienna. The Energy Framework Strategy 2030 outlines the strategic areas of action until 2030. The Energy Framework Strategy connects the different objectives of the Smart City Wien Framework Strategy and its long-term decarbonisation plan with the operative short-term strategic concepts and measures of the relevant departments and institutions that are owned by or have close ties to the city, such as the *Urban Energy Efficiency Programme (SEP).*

7 Magistrat der Stadt Wien (2017) (Ed.): Energierahmenstrategie 2030 für Wien, https://www.wien.gv.at/stadtentwicklung/energie/pdf/energierahmenstrategie-2030.pdf



Urban Energy Efficiency Programme 2030 (SEP 2030)

In 2006, the Vienna City Council adopted the first *Urban Energy Efficiency Programme (SEP)*, which prioritised increasing energy efficiency and saving energy. It ran until 2015 and focused especially on the buildings sector and the activities of the City Administration itself. The efforts for the successful implementation of the SEP have yielded measurable successes: Although final energy consumption had increased until 2004, it has gone done slightly since 2005 despite a growing population.

The Vienna *Urban Energy Efficiency Programme 2030 (SEP 2030)* presented in this publication takes up the basic principles of the original SEP, updates them for the current energy efficiency policy framework, and helps energy efficiency maintain its strong position in Vienna. It connects the energy efficiency-related goals of the overarching *Smart City Wien Framework Strategy* and *Energy Framework Strategy* as well as other strategic concepts of the City of Vienna and focuses on providing guidance and tools for reaching these goals.

In keeping with the city's energy policy priorities, the focus is on measures to reduce final energy consumption. However, in the interest of total efficiency and in light of the increasing interconnectedness of energy systems, efficiency increases in the transformation chain before reaching the end consumer are considered as well. A new feature of SEP 2030 is the inclusion of the transportation sector.

The measures and instruments focus on Vienna's areas of competence as a city and federal province. By implementing these measures in its own sphere of influence, the City Administration has a model function for others.

Vienna's energy efficiency roadmap for 2030

In the long term – by 2050 – Vienna aims to reduce per capita final energy consumption by 40 percent from 2005 levels, as laid out in the Smart City Wien Framework Strategy.

In the 11 years from 2005 to 2016, Vienna's population grew by 13 percent. In the same time, final energy consumption went down by 6 percent in absolute figures and by 17 percent per capita (see Fig. 1.2).

In view of the overarching goals and the developments of recent years, SEP 2030 sets an indicative interim goal for 2030: **Following the SEP 2030 energy efficiency scenarios, the City of Vienna aims to reduce per capita final energy consumption by 30 percent from 2005 levels by 2030.**

However, Vienna cannot reach this goal on its own. It is necessary for the federal government and the EU to introduce suitable frameworks to achieve this, in particular in the transport sector, and the successful efforts in the buildings sector must be continued.

Despite the city's strong population growth, Vienna is aiming to continue reducing absolute energy consumption until 2030. This requires special efforts in the transportation and buildings sectors.

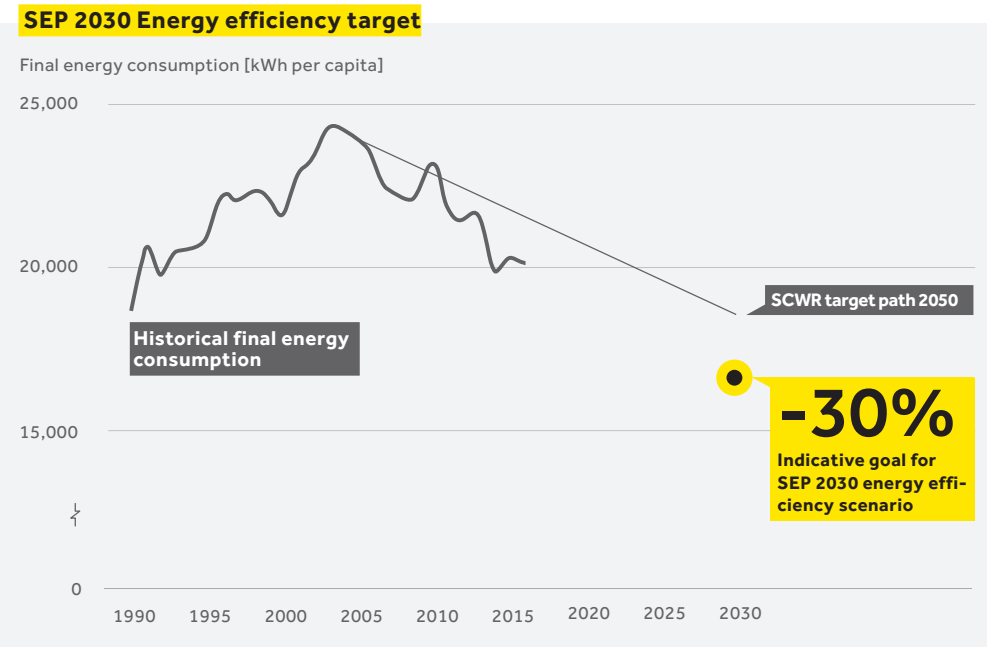


Fig. 1.2: Indicative energy efficiency target of minus 30 percent per capita final energy consumption by 2030

Measures and instruments
24 packages of measures with over 80 individual measures were created for the short and medium term. The measures are divided into packages for the mobility, buildings, industry and trade sectors, cross-sector measures, and packages for the Vienna City Administration and its enterprises, allowing the city to provide a good example for others.

The measures for increasing energy efficiency are selected with the following aspects in mind:

- energy savings to be achieved
- long-term cost-benefit ratio for citizens, businesses and the city
- positive impact on value creation in Vienna
- support for the regulatory framework in the energy efficiency domain
- holistic view of the energy system

Many of the approaches for increasing energy efficiency and saving energy are not new and have been pursued for years. It remains important to continue implementing and financing them, and they must also be re-evaluated and adapted regularly to account for changing conditions. Therefore, measures have only been set for the next five years and will then be adjusted for the remaining period until 2030. For them to be effective, they also require a supportive overarching framework.

The transportation and buildings sectors currently account for 78 percent of Vienna's final energy consumption, with space and water heating in buildings (41 percent) just ahead of mobility (37 percent). The remaining 22 percent are accounted for by process heat and electrical appliances. Therefore, the buildings and mobility sectors are at the centre of the programme, with a focus on measures in the city's area of competence that can sustainably reduce energy consumption.

The most important areas of action of SEP 2030 are:

Mobility

Technological alternatives and new business models for multi-modality in a sharing economy have in recent years turned the mobility sector into a dynamic sector with significant reduction potentials.

The Vienna City Council adopted a strategic concept on mobility in December 2014. SEP 2030 adopted the energy-related measures and instruments of this concept and addresses them from an efficiency perspective. In contrast to the first energy efficiency programme, the transportation sector is a priority in SEP 2030. The bundles of measures created for SEP 2030 focus on parking management as well as on making public transport, cycling and walking more attractive options in order to continue the reduction of individual motorised transport.

The most important overarching measure, which has a massive impact on reducing local energy consumption, is the EU Regulation on reducing fuel consumption of vehicle fleets. Combined with global market developments, this measure is sparking technical innovations for improving efficiency in vehicles and increasing electromobility.

Buildings

At the local level, the most important measure in the buildings sector remains the continuous reduction of space heating and hot water consumption in existing buildings. The cost-optimal requirements of the National Plan – implemented in Vienna's regulations on civil engineering, construction of new buildings, and refurbishment of existing buildings – provide an ideal framework for this. With the impetus given by the EU Buildings Directive and the National Plan, which runs until 2020, the rules for housing promotion as well as building regulations must be gradually transformed to comply with a minimum-energy construction standard. This route must be continued. In view of the increase in hot days (30° C and above) in summer, which are also making people more aware of climate change, passive measures for avoiding overheating in summer are of particular importance. Quality assurance and monitoring must be carried out for all measures to assess their effectiveness.

The traditional funding tools for the construction of new buildings are changing due to increasingly strict standards, but there is still a great need for subsidies for the thermal energetic refurbishment of existing buildings. In order to generate more energy savings in refurbishing buildings, it is important to make additional changes to framework conditions, e.g. the apartment ownership and tenancy laws, as well as consistently higher prices for fossil energy sources. To achieve this, the funding instruments must be developed further in line with their goals. Where subsidies for new construction are concerned, the emphasis is on the necessity to create affordable housing.

City Administration

The model function of the Vienna City Administration was already recognised in the first SEP. This function is maintained in SEP 2030 and underscored by a number of bundles of measures for the City Administration and its enterprises, particularly in the areas of buildings and mobility.

Implementation and monitoring of SEP 2030

Consistent implementation and development of measures after the first four to five years as well as the necessary monitoring of the programme are supported and assessed by the steering group for the *Energy Framework Strategy.* The monitoring requirements will be added on to existing reports, formats and timelines to utilise synergies and minimise resources needed (e.g. reporting duties tied to the EU Energy Efficiency Directive, the Federal Energy Efficiency Act, and the Smart City Wien Framework Strategy (SCWR) monitoring).

The SEP coordination department has a central role to play in this. It is embedded in Municipal Department 20 – Energy Planning and is tasked with raising awareness internally and externally for the priority of energy efficiency and the ways in which energy consumption can be reduced.

Mobility

Buildings

City Administration

Implementation and Monitoring

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