



VIENNA 2021 Master GETEC

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SciencesPo
ÉCOLE URBAINE

Table of Contents

Acknowledgment..... p.3
Executive summary..... p.4
Introduction..... p.5

1 Exploring Vienna's legacy to unravel current metropolitan orientations in face of climate pressures

1.1 A historical perspective on Vienna's social, economic and environmental policy shifts since the 19th century: exploring the city's path dependency to inform its current municipal vision..... p.9

1.2 Assessing Vienna's roadmap for carbon neutrality..... p.16

1.3 Vienna's architectural and community identity at stake..... p.21

1.4 Stakes of residential housing in Vienna : what about just transition?..... p.27

2 Contemporary sectoral approaches to environmental urban planning

2.1 Unpacking mobility dynamics in the city of Vienna..... p.35

2.2 Stakes of waste management / circular economy in Vienna: an overlooked matter ?..... p.42

2.3 The world's greenest city: promotion of social well-being equipment, but for what ecosystemic services?..... p.47

2.4 Climate adaptation : assessing the risk and preparing for climate crises in Vienna..... p.54

3 Governing ecological avenues for change

3.1 Participatory dynamics in Vienna's ecological transition..... p.59

3.2 Public Private Partnerships (PPPs) and the role of the private sector in the ecological transition..... p.66

3.3 The narrative of Red Vienna : a hurdle for an ambitious ecological transition plan?..... p.72

Conclusion..... p.79

Credits..... p.80



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Executive summary

Vienna is a fascinating European city. Once the capital of an Empire that disappeared after 1918, Vienna was then known as Red Vienna, one of the most progressive and innovative cities, pioneering housing schemes that marked the heyday of municipal socialism in Europe. Apart from the Nazi-Austria period, Vienna has remained a social-democrat bastion until today. The consecration of Vienna as not only a city but a federal state in 1922 gave its political situation another dimension, making it a “political isle” in a mainly nationalist state. Austria began to modernize after regaining its complete independence in 1955 with the signature of the Austrian State Treaty, becoming a neutral state in the midst of the Cold War. After the wall fell apart, the city developed its relationships and exchanges with the Western part of Europe, eventually being integrated within the European Union. Benefiting from this new political and economic impetus, Vienna’s development accelerated, while Viennese elites aimed to invent a sustainable urban model for the city centre. Since the 1980s, the period in which the municipality started laying its environmental vision, Vienna has flourished and is now often presented as a dynamic and trendy European city from which to learn innovative “green” policies.

In face of recent exacerbated climate pressures, the idea of the “commons” in the public space, municipal services or the collective aspirations in the housing sector are on the rise again, while pathways towards just transition and climate justice bloom in the public discourse. Vienna thus has a chance to reconnect with its social-democrat heritage: how can the city make the bridge between its “Red” legacy and today’s critical call for moving towards green ? While many aspects have been taken under consultants and international organizations’ umbrellas, it is one chance for the municipal authorities to reconnect to its past episodes and develop innovative policies.

As GETEC students come back from a 4-day field study in the Austrian capital, this report encompasses some of the learnings they have made on the field with experts, while tying them back to the political, historical, socio-cultural and economic challenges of the city. In fact, this work successively explores the legacies of Red Vienna and its various influences on contemporary environmental and climate policies in face of climate urgency. It also offers a sectoral analysis, looking at the echoes between the explored

path dependencies and current avenues for transition in, for example, energy, mobility or biodiversity areas. To broaden these observations, it eventually questions the governance articulations at play, interrogating the power of the private sector in driving Vienna’s ecological transition or the influences citizens may have in shaping environmental politics, while digging the narrative the city has nurtured over the years and how this has driven the authorities to foster efforts in specific sectors, while neglecting some others. Eventually, this report aims to answer the following question : to what extent is Vienna working towards an ecologically sound and fair transition for its citizens ? Who benefits from its policies, how is it governed and what is being overlooked ?

We wish you a pleasant reading,

The Editorial Team.



Introduction

From Red...to Green Vienna? Continuities and discontinuities between Vienna's socio-democratic inheritance and current environmental pressures

Anna Luise BÜTTNER, Maëva FLEYTOUX,
Camille LARMINAY

In times of exacerbating environmental pressures and climate-related impacts on human populations and natural ecosystems, institutions, organisations and individuals are increasingly recognizing the urgent need for bold climate action and long term ecological transitions. Decision making is called into question as an increasing share of the society calls for urgent political mobilisation in face of climate urgency. If one can observe the increasing development of multi-level political strategies and projects, climate governance yet faces the considerable challenge of tackling jointly environmental and social issues. This global observation suggests that societies have not yet found the most effective transition roadmap to respond together to climate change and structural patterns of inequality. In face of the risk for vulnerabilities and discriminations

to increase due to climate change, associations and grassroot movements have flourished to promote environmental justice, emphasizing structural inequalities between people, notably in terms of exposure and resilience capacity. Following university Professor David Schlosberg¹, environmental justice includes four main components which are: distributive justice as the principle of allocating the environmental burdens and benefits equitably, procedural justice concerning the rights of all to be involved in important decisions which affect their lives, recognition justice standing for the need to place the groups most affected by climate change consequences at the core of public discourses, and finally, building of capacities to provide basic resources and opportunities for people to be active citizens. From that, we consider the notions of rights and responsibilities essential to think about fair transition as well as, identifying winners and losers, inclusion and exclusion.

Central to our thinking is more particularly the analysis of how local authorities engage with the articulation of environmental and social issues. Moreover, beyond that dimension, we have a special interest in their growing active involvement in the climate change debate. Indeed, in a context where traditional institutional actors seem to show little ability to provide the needed answers to the multi-scalar threat of climate change, emerging new actors like cities gain recognition as legitimate and relevant stakeholders that often lead actions in the absence of, or in spite of, initiatives from the State they are subjected to.

Indeed, if urban centers are part of the climate change problem, emitting 70% of the global greenhouse gas emissions according to the International Energy Agency², they therefore have a great potential in terms of local and global mitigation impacts. Moreover, cities are sites of innovations and

1 Mendez, Michael (2020) *Climate Change from the Streets: How Conflict and Collaboration Strengthen the Environmental Justice Movement*. New Haven : Yale University Press.

2 IEA website (2016) "Cities are in the frontline for cutting carbon emissions, new IEA report finds" <https://www.iea.org/news/cities-are-in-the-frontline-for-cutting-carbon-emissions-new-iea-report-finds>

experimentations whose level of operation enables them to provide tailored responses to local contexts. With globalisation, the stakes are actually very high for cities to show their commitment to mitigate as well as adapt to climate change through innovative ideas. Not only do they have to protect their citizens and assets, but they are more and more in competition between one another within and across national borders to attract inhabitants, investors, and tourists. As a result, cities develop strategies to build a green reputation that they publicize, they participate in transnational city networks, use flagship projects, invest in green infrastructures, apply to green awards, try to create new standards and norms to increase horizontal and vertical influence etc. At the same time, the institutional, economic and social settings cities are embedded in should not be overlooked as they greatly influence the way cities pursue ecological objectives and their actual achievements.

Exogenous as well as endogenous factors are to be taken into account.

This report will project these global observations and concepts onto the city of Vienna and analyse its governance responses to climate change, taking into account the city's various specificities. Vienna, capital of Austria with about 1.9 million inhabitants, is known for ranking among the top cities worldwide in terms of quality of life - a state which has its roots not only in territorial conditions or

very good governance qualities, but also in the political evolution of the city in the 20th century.

A very important aspect for Vienna's development is its strong social-democratic heritage from the last century. After World War I, Austria became a republic and Vienna a Land separated from Lower Austria. The city government thus gained fiscal sovereignty and supplementary policy competencies while being backed by an urban population strongly supporting the social-democratic party. These favourable conditions allowed for pioneering policies in the 1920s, a period that is also called "Red Vienna". At that time, the progressive socialist city government succeeded in combating the housing crisis by providing municipal housing on a large scale. Simultaneously, through the Austro-marxist ideal of strengthening an emancipated workforce, many social institutions were created and education and hygiene took an important role in workers' daily lives, eventually favoring an impressive increase in life expectancy which improved by ten years during Red Vienna. Nowadays, the huge municipal housing complex Karl-Marx-Hof is one of the symbols that still represent the socialist decade and its ideals.

In addition to that, the second half of the 20th century in Vienna was marked by a particular continuity of social-democratic rule which lasted until today: all mayors since 1945 were members of the social-democratic party.

In the last election in 2020, the party (now SPÖ - Sozialdemokratische Partei Österreichs) still gained 41.6% of votes and built a coalition with the liberal party NEOS - after ten years of coalition with the greens. This Viennese specificity of continuous social-democratic governance allowed for strong social and anti-neoliberal policies over years, which include opposing the privatisation of public property and supporting solidarity among the urban population. The city keeps its hand on strategic services, where municipal companies have a lot of control. Especially the housing sector is to be positively emphasized, as the level of privatisation remained comparatively low, and the important municipal housing stock allows for moderate rents and high standards for social mixity. This is also partly possible thanks to a favourable demographic evolution: despite modernisation and positive economic development after World War II, the city did not experience any population explosion. Quite the contrary, the number of inhabitants stagnated and even moderately declined for some time, which makes that the growth since the 2000s does not lead to unmanageable population pressure.

A final factor that should not be neglected when talking about Vienna's virtues is its strategic position at the heart of Europe: Especially since the fall of the Iron Curtain, Vienna benefited from its new role of being a node between Central and Eastern European Countries and Western Europe. But also the

settlement of international organisations since Austrian neutrality in 1955 contributes to the high reputation of the city. Another factor for favourable development in the last years is the integration of Austria in the European Union in 1995, which allowed for new upswing in the capital.

At the same time, Vienna is increasingly subjected to climate change pressures. This cannot be separated from the national geographic context: Austria faces faster climate change than global average. An observed temperature rise has been observed since 1880 in Austria, which is twice the global average for this period. Because of its mountainous geography, 37% of Austrian territory is, to this day, inhabitable, which makes the consequences of such important global warming even more hazardous. The national territory is highly vulnerable to landslides, extreme precipitation, and flood risks; Vienna may not face exactly the same threats in its territory but the city remains highly dependent on the territory it is enshrined in, notably regarding mobility and supply issues.

However, the city also has to face direct climate change threats inside its territory, namely floods and heatwaves. The city government estimates that the city faces at least twice the number of heat days per year compared to 1990, a phenomenon that gains significance due to increasing population forecast, urban development and densification. In 2003, the severe heatwave, which largely

impacted the city's ability to function daily, resulted in 180 heat related deaths, and the frequency of such events is expected to rise in the next decades. As part of the efforts to deploy a strategy for climate adaptation, the city government estimates that ten hot spots are to be identified in the city and require urgent action, especially in the neighborhoods of Favoriten, Ottakring, and Margareten. Without any measures, heat is expected to rise by 8° by 2050 in the city, therefore hindering all other actions taken to increase Vienna's attractiveness and liveability. Furthermore, Vienna is organized around the Danube River, and faced critical flood events in 2002, 2005 and 2013, provoking losses in infrastructures and human lives. One can therefore easily understand why climate adaptation and mitigation are two major issues that Vienna must tackle.

While being a major challenge for the present and future of Vienna, the public salience and scientific relevance of climate change also offers the city the possibility to reconnect with its social-democratic heritage. Vienna has indeed the opportunity to develop public policies geared at the same time toward social justice and ecological objectives.

How can Vienna make the bridge between its “Red” legacy and today’s critical call for moving towards “green”? To what extent is the city working towards an ecologically sound and fair transition for its citizens?

These questions guided our study trip in Vienna, which took place between September 27th and October 1st 2021. We had the chance to spend these days walking the city, but most importantly, meeting and exchanging with a range of actors who analyse, design and shape the city of Vienna. These enriching experiences were an opportunity to better comprehend the articulation between the heritage of the city and its current ambitions at the local, national and international levels, and this report is the final result of our efforts at better understanding the dynamics of governance in the city.

Section 1 provides us with a historic overview of the Viennese legacy and its consequences on the political fabric of the city, be it in its relationship with the national state or its current social housing policies. Section 2 deals with specific fields of action in which Vienna illustrated itself for its ambitious measures around mobility and waste management, while taking a closer look at adaptation measures and urban metabolism fluxes in the city. Lastly, Section 3 examines governance dynamics in the city through the lenses of citizen participation and public-private partnerships. This section also explores the limits of the Red Vienna narratives, questioning its ability to lead the city toward a sustainable future.



EXPLORING
VIENNA'S LEGACY
TO UNRAVEL
CURRENT
METROPOLITAN
ORIENTATIONS IN
FACE OF CLIMATE
PRESSURES

1.1 A historical perspective on Vienna's social, economic and environmental policy shifts since the 19th century: exploring the city's path dependency to inform its current municipal vision

Anna Luise BÜTTNER, Zoé FOULON, Laure LAVIGNE DELVILLE

This chapter presents a historical overview of the urban development of Vienna since its industrialization, providing a framework to understand some of the conditions under which the city is governed today. In addition to “traditional” historical events, the chapter includes insights on the city's material inputs, such as energy or water, and leans on the concept of Social Metabolism developed by the Vienna School of Social Ecology. Acknowledging the inseparability of societal developments and urban material flows, this chapter covers the last 200 years, during which the industrial conditions shaping the city's development were set. It also looks at the recent “green” policies of the city, which are telling of the evolution of Vienna's relationship with its hinterland's resources.

In the Viennese socio-metabolic transition approach, transitions are to be understood as transformational shifts in the characteristics of a system, where political events can play an important role. The analysis of Vienna's current

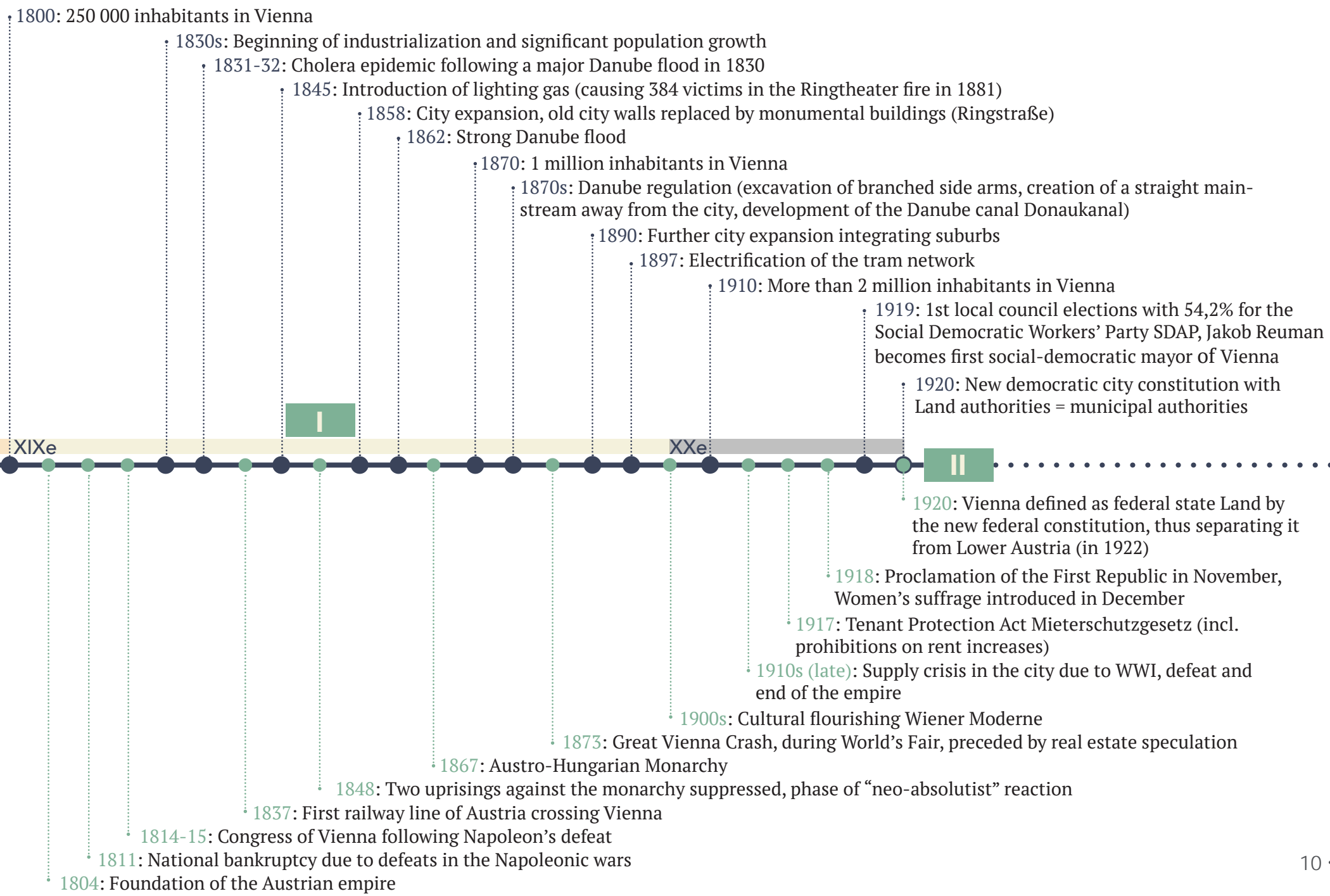
transition towards sustainability therefore requires looking at its political heritage and particularly that of its striking Austro-Marxist past.

A first focal point in this chronological panorama relates to the major urban metabolism and energy transition that occurred with the industrialization and expansion of the city in the 19th century. The second focuses on social policy shifts following the hardship post-World War I, and on the essence of what we call Red Vienna. The last point relates again to systemic socio-material transformations in Vienna's metabolism and its translation in the socialist policy agenda. To conclude, we look at new challenges since the fall of the Iron Curtain and Vienna's recent developments to become a “green” city.

Chronological panorama

EVENTS FROM AND WITHIN THE CITY

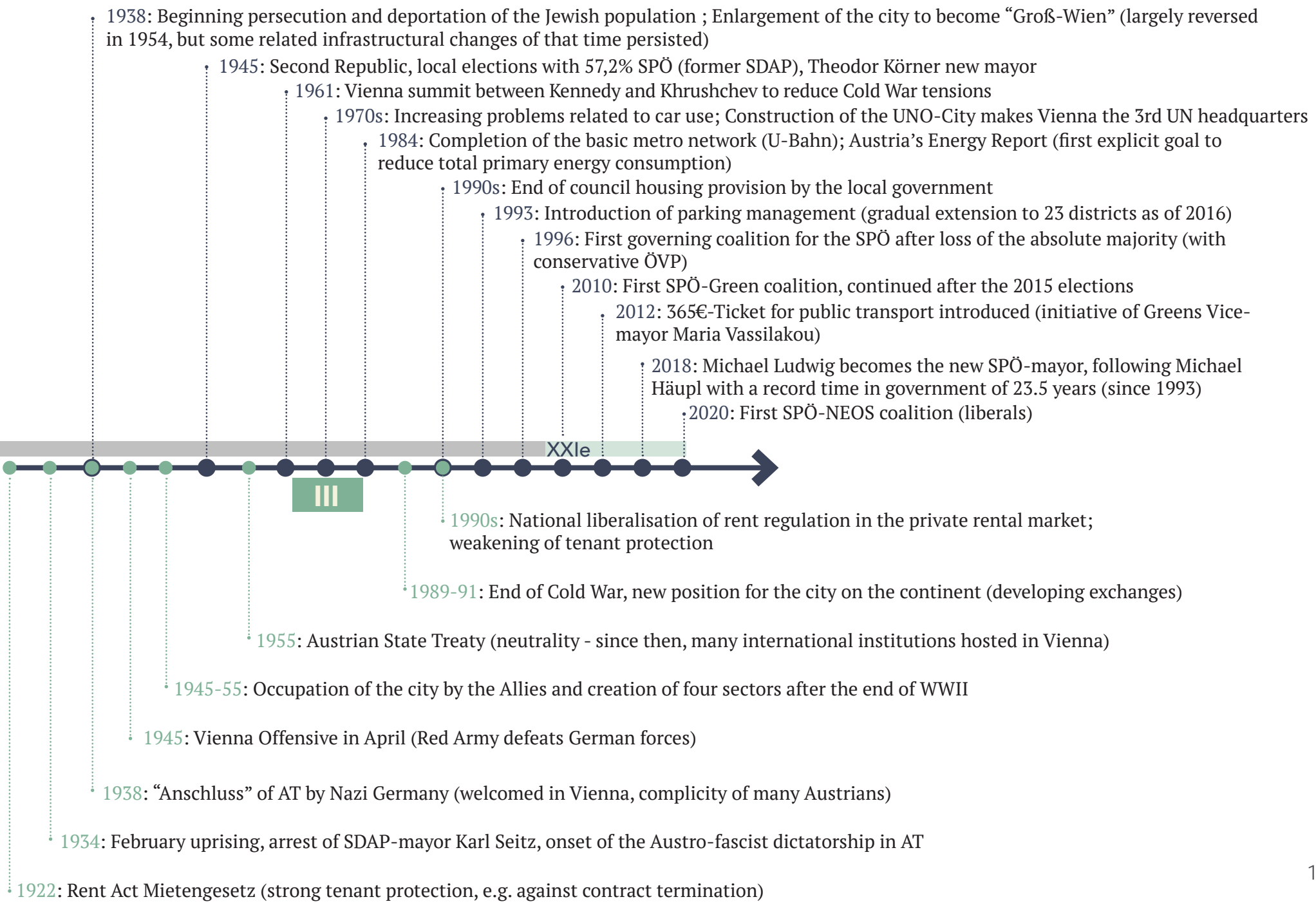
EXTERNAL EVENTS (OR EXTERNAL INFLUENCE)



Chronological panorama

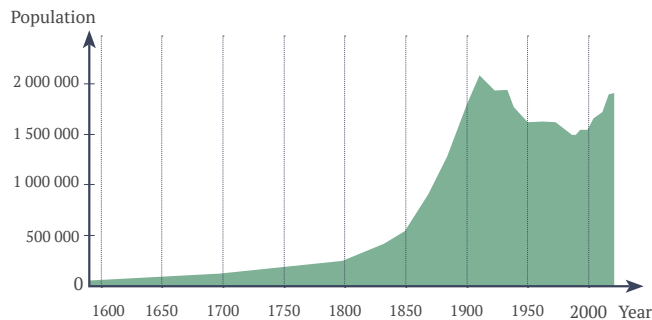
EVENTS FROM AND WITHIN THE CITY

EXTERNAL EVENTS (OR EXTERNAL INFLUENCE)



I. Urbanization, city-growth, energy transition

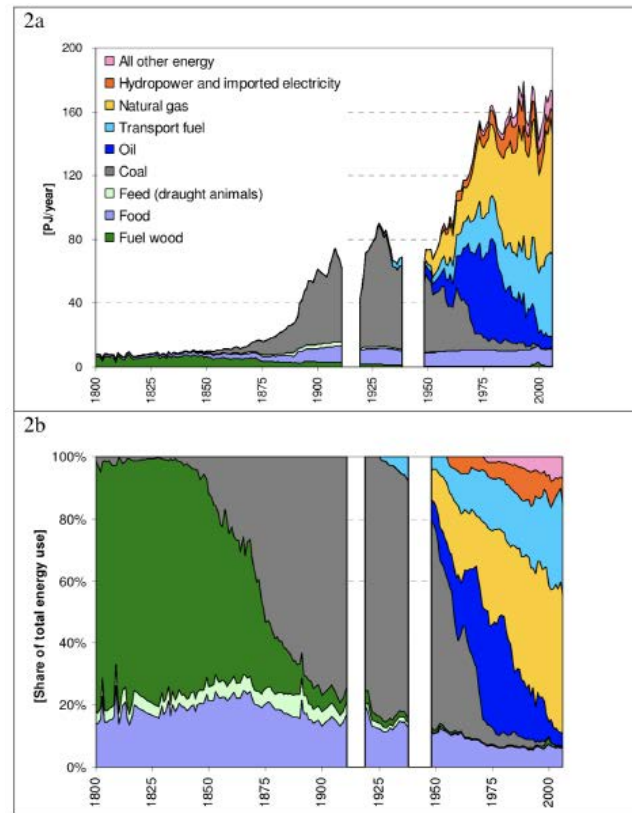
Vienna in the 19th century was not only the administrative capital but also the economic and cultural center of the multi-ethnic and multicultural Austrian Empire (1804-1867) and later the Austro-Hungarian Empire (1867-1918). Despite several political and economic crises, the city grew enormously within a few decades thanks to industrialization: from 250 000 (in 1800) to one million (in 1870) and soon to 2 million inhabitants (in 1910). Urban centers never have been nor will be self-sufficient in the resources necessary for their development. Therefore, it is important to understand the historical center-hinterland relationship to optimize the current patterns of resource supply. The shift from renewable biomass to a fossil-fuel based energy system allowed to override the traditional barriers of growth inherent to the old energy regime but was not



Graph 1: Vienna's population development 1590-2013.
Source: Lopdp (author), Statistik Austria. Statistisches Jahrbuch 2009

a continuous process; some important phases in this energy transition can be distinguished.

Even though Vienna was not a heavy industrial site, the industrial revolution led to a growth in the city's energy use and changes in its composition, following a similar path to other cities across the continent. Replacing



Graph 2: Vienna's energy consumption and energy sources development 1800-2000.
Source: Krausmann, F. (2013). A City and Its Hinterland: Vienna's Energy Metabolism 1800-2006, p. 254

the renewable biomass base that prevailed until the 1850s, coal became the dominant energy source - from 5% in the 1830s to 33% in 1870 and 75% of total energy input in 1910. This energy shift is intrinsic to urbanization; the city expanded correlatively and suburbs were progressively incorporated in the urban center. Nevertheless, 23% of Vienna's land remained dedicated to agricultural uses and 17% characterized as protected woodlands.

During this shift of energy supply from biomass to large-scale amounts of coal, the role of the Danube within the city also changed. The river previously served as the main route to transport wood from upstream areas to fuel the city. While the Danube was subjected to regulations in 1868 and 1875 in response to flood events of 1830 and 1862, the railway gained importance throughout Europe and in Austria. The development of this new transport mode gave the city easy and quick access to coal deposits situated further north, thus accelerating Vienna's energy base shift. These changes in modes of transport, from water to train, and later to roads, involved a remodeling of the relationship between the city and its hinterland: its sources of supply were considerably expanded. These shifts did not in themselves affect Vienna's land use thanks to the legislative protection of forests surrounding the city. However, the control of the Danube River has provided new areas from the wetlands and allowed significant settlement expansion.

The evolution of the city's urban metabolism since this initial industrial boom demonstrates the intrinsic links between urban growth and the emergence of a fossil fuel based energy system. The large amounts of energy consumed by modern Vienna can easily highlight the need for in-depth transformation in the functioning and the organization of cities to achieve material and energy reduction.

II. WWI-aftermath, Red Vienna social policies

World War I was followed by times of hardship and scarcity in the city, characterized by important Migration movements, a middle class impoverished by the hyperinflation of the early 1920s, and important territorial losses, which necessitated a reorganization of Vienna's supply chains. These amounted to catastrophic living conditions. Housing shortage resulted in overcrowded apartments, where diseases could spread easily due to poor hygiene. In combination with food shortages, thousands of Viennese built provisional settlements on the outskirts of the city on their own initiative and out of desperation, with gardens to provide them with the most basic necessities.

After the social-democrats won an absolute majority in the 1919 elections and established a new government, a period known as "Red Vienna" began, lasting until

1934. During that time, the Social Democratic Workers' Party SDAP managed to maintain the position of mayor and gained the majority in the City Senate and City Council. The government soon experimented with new social policies, inspired by Austro-Marxist ideas (for example to achieve transformations via reforms and not a coup). An important element of this ideology was workers' education and culture. Therefore, not only did the government construct and provide large scale social housing with affordable rents to cover peoples' basic needs, it also implemented a whole philosophy around it. Social institutions were created in these municipal housing and living complexes (called Gemeindebauten), and healthcare standards were improved. The implementation of Red Vienna's pioneering policies were made possible by Vienna's specific status as both a city and a state, which it acquired in 1922. It gave the city new policy making and tax raising competences, as well as more independence from the rest of the country, which remained very conservative.

The comprehensive social policies positively contributed to life expectancy of citizens, which increased by 10 years during the social-democratic rule. These reforms, which became recognized internationally, were sustained financially thanks to new taxes. Nevertheless, the 1920s were also marked by great political instability, which culminated in the "February Uprising" in 1934, following

which a Austro-fascist dictatorship was established. It was followed by a Nazi regime in 1938, with horrible consequences for the Jewish city population. After World War II, the City Constitution as well as the social-democratic rule were reestablished, and the construction of municipal social housing became important again. New premises were often built on land plots that had been vacant due to bombings during the war.

III. Second half of the 20th century: demography, energy, transport, etc.

If waves of immigration from other provinces of the Habsburg Empire contributed to Vienna's growing population, which peaked before World War I, the collapse of the Empire combined with the subsequent economic crises and World War II stopped both urban expansion and population growth. During the second half of the 20th century, the number of inhabitants declined further, continuing in this trend until the end of the 1980s. This shrinkage is significant to grasp both the social and environmental policy possibilities of Vienna at that time. Resource needs were necessarily lower, and the pressure on housing and real estate less intense - especially compared to many other European capitals - which gave the municipality some room for maneuver. Only since the 2000s has the population been growing again, mostly thanks to immigration.

In parallel to demographic factors, the municipal social policies have also been built on the city's energy context following the oil price shocks of the 1970s. The body of work of the Vienna School of Social Ecology identifies a second major institutional transformation linked to energy transition around that time. Initially, after World War II, energy consumption per capita had multiplied, driving the overall energy demand upwards, even if urban population was declining. At the same time, the share of coal in energy consumption decreased from 80% to 15% in a few decades. Natural gas emerged as the dominant form of energy in the 1980s and constituted 45% of the energy supply in 2000. In contrast, the share of biomass further declined and accounts for only 10% of energy consumption today. The share of renewable and alternative commercial energy sources (for example hydropower) is even smaller. However, the oil price shocks in 1973 and 1979 brought an abrupt end to a century of urban energy consumption growth. Similar to other mature economies, Vienna's resource use stabilized, while its economy continued to grow. Since then, energy use has remained high, but there is an increasing willingness to reduce energy use and dependence from the municipality.

In the 1970s, Vienna faced new urban issues caused by increasing car use: congestion, air and noise pollution, parking shortages, growing number of traffic deaths

and injuries, etc. The progressive deterioration of the historical city center has been one of the most visible consequences. Deeply related to the shift in energy use, the criticisms associated with the loss of public space to car use have shaped current municipal transport policies. This period marked the beginnings of the proactive public transport policy for which Vienna is currently renowned. In particular, Vienna's metro network completed in 1984 and extended since, and its strict parking measures. The continuity in the governing leadership of the Social Democratic Party (SPÖ, to which all mayors since 1945 belonged) supporting this policy allowed consistency in the planning and implementation.

Conclusion

The continuity of social-democratic governments in Vienna, together with demographic developments, seem to be some of the main factors to understand the city's trajectory. They allowed for the realization of large transformations, such as in the public transport system. In addition to a good budgetary situation, strong social policies have contributed to social peace and stability in the city. Even if the social-democrats experienced some losses since the 1990s, which led them to form several coalitions, the one with the green party since 2010 has allowed them to advance environmental policies with important positive outcomes

for the city. Today, Vienna is one of the cities in the world with the highest quality of life. However, Vienna is not unaffected by the pressures of population growth, competition with other cities and a strengthened private market. Since the 1990s, market influences have been increasing in the housing sector, weakening tenant protection. Therefore, it remains to be seen to what extent Vienna will manage to combine its environmental and social policies in the future.

References

Billen, Gilles, Josette Garnier, et Sabine Barles. 2012. « History of the Urban Environmental Imprint: Introduction to a Multidisciplinary Approach to the Long-Term Relationships between Western Cities and Their Hinterland ». *Regional Environmental Change* 12 (2): 249-53.
<https://doi.org/10.1007/s10113-012-0298-1>.

Fischer-Kowalski, Marina, et Daniel Hausknost. 2014. Large-Scale Societal Transitions in the Past. WWForEurope Working Paper No. 55. WIFO Studies. WIFO.
<https://ideas.repec.org/b/wfo/wstudy/47187.html>.

Fischer-Kowalski, Marina, et Jan Rotmans. 2009. « Conceptualizing, Observing, and Influencing Social-Ecological Transitions ». *Ecology and Society* 14 (2).
<https://doi.org/10.5751/ES-02857-140203>.

Gierlinger, Sylvia, Gertrud Haidvogel, Simone Gingrich, et Fridolin Krausmann. 2013. « Feeding and cleaning the city. The role of the urban waterscape in provision and disposal in Vienna during the industrial transformation ». *Water History* 5 (juillet): 219-39.
<https://doi.org/10.1007/s12685-013-0075-1>.

Gingrich, Simone, Gertrud Haidvogel, et Fridolin Krausmann. 2011. « The Danube

and Vienna: Urban resource use, transport and land use 1800-1910 ». *Regional Environmental Change - REG ENVIRON CHANG* 12 (juin): 1-12.
<https://doi.org/10.1007/s10113-010-0201-x>.

Haidvogel, Gertrud, Verena Winiwarter, Gert Dressel, Sylvia Gierlinger, Friedrich Hauer, Severin Hohensinner, Gudrun Pollack, Christina Spitzbart-Glasl, et Erich Raith. 2018. « Urban Waters and the Development of Vienna between 1683 and 1910 ». *Environmental History* 23 (septembre): 721-47.
<https://doi.org/10.1093/envhis/emy058>.

Krausmann, Fridolin. 2013. « A City and Its Hinterland: Vienna's Energy Metabolism 1800-2006 ». In , 247-68.
https://doi.org/10.1007/978-94-007-1177-8_11.

Krausmann, Fridolin, Heinz Schandl, et Rolf Peter Sieferle. 2008. « Socio-ecological regime transitions in Austria and the United Kingdom ». *Ecological Economics* 65 (1): 187-201.

Kadi, Justin, et Johannes Suitner. 2019. « Red Vienna, 1919-1934 »
<https://onlinelibrary.wiley.com/doi/abs/10.1002/9781118568446.eurs0259>.

Schott, Dieter, et Christof Mauch.

2016. « Are cities sustainable? A discussion of urban metabolism in Europe, past and future ». *Global Environment* 9 (1): 240-55.

Scott, Alan. 2021. « Lecture on Red Vienna at Vienna University during the study trip (2021). »

Website on tenant protection in Austria from 1917 to today: <https://www.mieterschutzverband.at/allgemein/mieterschutz-in-oesterreich-von-1917-bis-heute/>

Website on the Vienna settlement movement in the 1920s: <https://www.werkbundsiedlung-wien.at/en/background/the-vienna-settlement-movement>
Website on Red Vienna: <http://www.rotes-wien.at/start.html>

Winiwarter, Verena, Martin Schmid, et Gert Dressel. 2013. « Looking at half a millennium of co-existence: the Danube in Vienna as a socio-natural site ». *Water History* 5 (juillet).
<https://doi.org/10.1007/s12685-013-0079-x>

1.2 Assessing Vienna's Roadmap to Carbon Neutrality

Garance BREUIL, Mathilde MORCHAIN,
Teresa QUIJANO

This article assesses Vienna's roadmap towards carbon neutrality looking successively at the city's carbon footprint in key sectors, its major environmental policy concerns, as well as the planned budget to implement environmental actions. Then, the chapter highlights the links that can be made with other plans at both urban and national levels. Finally, it provides a focus on the energy issue, looking particularly at key energy trends and constraints.

I. Carbon footprint in key sectors

To assess Vienna's roadmap to carbon neutrality, it is first necessary to have a look at the city's characteristics in terms of greenhouse gas (GHG) emissions. Vienna is the Austrian city which has the lowest rate of GHG emissions per inhabitant, with 5.5 CO₂ tons equivalent in 2006, while the Austrian average is twice as high (table 1). This hints at the engagement of the capital regarding environmental policies.

When taking a closer look at Vienna's GHG emissions per sector, one can

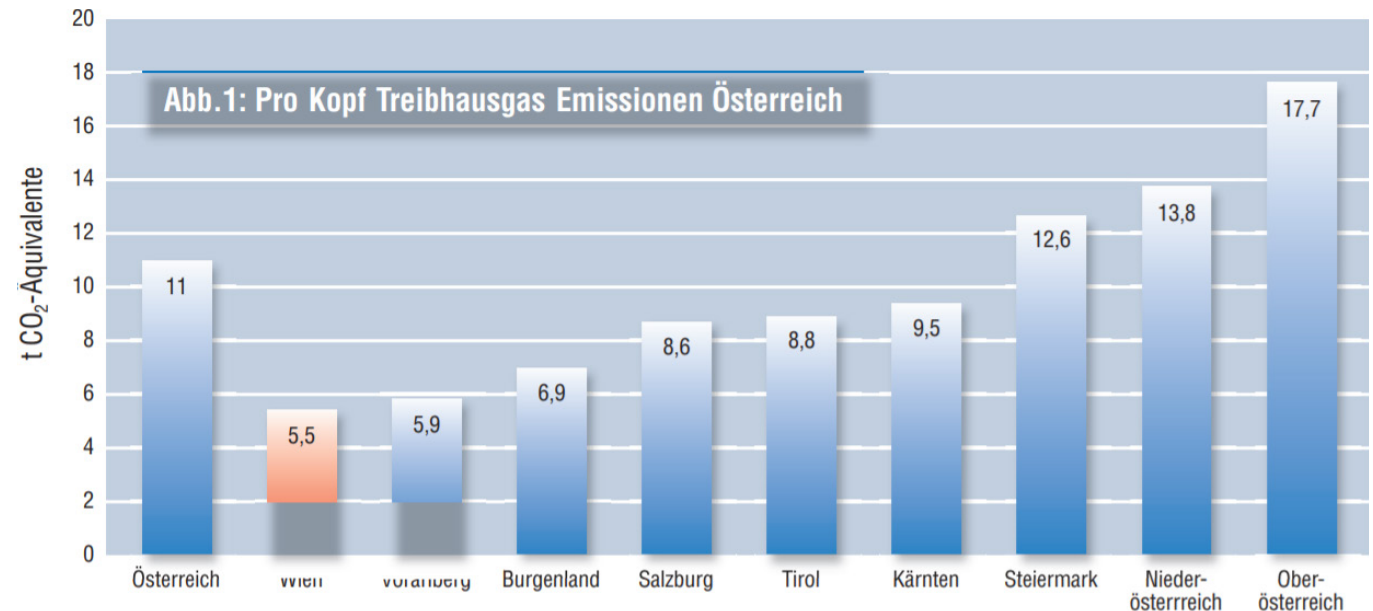


Figure 1: GHG Emissions per inhabitant in Austria
Source: City of Vienna (2009), Klimaschutzprogramm der Stadt Wien. Fortschreibung 2010–2020.

highlight that the main sources of emissions are concentrated in three key sectors: transportation, energy supply, and buildings (table 2). In 2018, Vienna emitted 8.430 thousands CO₂ tons equivalent, including 3.335 for transportation, 2.188 for energy supply, and 1.547 for buildings. Over time, the total of GHG emissions has slightly increased, representing 8.262 thousands CO₂ tons in 1990. However, except for transportation, fluorinated gasses and waste management, all

sectors have reduced their emissions between 1990 and 2018.

II. Policy context

Since 1990, the city has worked on introducing climate concerns and actions in the political sphere, aiming at limiting these increasing emissions. Vienna, as a city and a State, has had some room for maneuver to implement climate policies, which permitted

1.2 Assessing Vienna's Roadmap to Carbon Neutrality

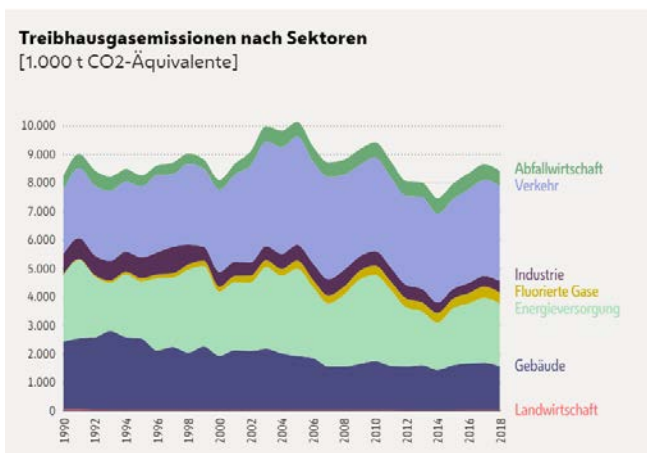


Figure 2: GHG emissions per sector (unit: 1000 CO₂ tons equivalent)
Source: City of Vienna (2021). *Energiebericht der Stadt Wien*.

it to set up Climate Protection Programmes, the first being enacted in 1999. This first climate plan was the KliP I, valid until 2010¹. KliP's goal was to limit annual emissions by 2.6 million tons of CO₂ equivalents by 2010. It was rather a success as 3.1 million tons of CO₂ equivalents were avoided as soon as 2006. This plan was updated with a second plan: KliP II, that aimed to push this reduction to 21% in 2020, compared to 1990. This programme has been provisionally extended to 2021². Its goal is to prevent the annual emission in Vienna of 1.4 million tons of greenhouse gases. This plan focuses on 5 fields of action, which are energy production; use of energy; mobility and city structure; procurement,

waste management, agriculture and forestry, nature conservation; and public relations. Some noteworthy measures of KliP II are the increase in the share of district heating to 50%, the thermal rehabilitation of residential buildings, the reduction of passenger car traffic and promotion of soft mobility, the doubling of the amount of final energy produced by renewables compared to 1990, and finally, the creation of a plan for the secure supply of energy. The coordination of the programme is currently managed by Christine Fohler-Norek and her executive team coordinator of climate protection. The financing of climate protection measures is poorly communicated. Recently, new funds were announced by the city: 2.8 billion euros of investments in climate protection measures, in the next two years. For instance, the infrastructure company of the city, Wiener Stadtwerke, will use 76% of its total investments up to 2025 exclusively for climate-friendly measures, with 2.6 billion euros to Wiener Linien, 1.07 billion euros to Wien Energie, 335 million euros to Wiener Netze and 150 million euros to Wiener Lokalbahnen³.

These elements on the political context of Vienna concerning climate policies show that Vienna is a leader in Austria.

Nevertheless, the city seems less active internationally compared to other European capital cities, it only became a member of the Covenant of Mayors for Climate and Energy in 2014, but did not join any other city networks for climate.

III. The city's major environmental policy concerns

Vienna's transportation system, building and heating, electricity and waste sectors release an estimated 7.8 million tons of carbon dioxide each year⁴. The city's plan towards carbon neutrality starts with decarbonising heating and electricity systems, shifting to soft mobility transport alternatives and using building materials more efficiently.

One of the most important requirements to secure affordability and climate positive energy supply, is the reduction of Vienna's per capita final energy consumption. By doing this, the energy supply can then be sourced from local and renewable sources. Vienna will reduce its local per capita GHG emissions by 50% by 2030, and by 85% by 2050 (using the year 2005 as the baseline). This will be done with major investments on energy efficiency technologies and behavioral changes from

- 1 City of Vienna (2009). The Goal of "KliP II".
- 2 City of Vienna (2009). Klimaschutzprogramm der Stadt Wien. Fortschreibung 2010–2020.
- 3 Janice (2021). Vienna tied up a double budget of 33.3 billion euros. News-in-24.
- 4 EIT Climate-KIC (2019). Vienna's journey to carbon neutrality.

behalf of the city population. Simultaneously, the share of renewable energy has to increase to 25% by 2030 and to almost 60% by 2050.

For the transport sector, the objective is to reduce per capita CO2 emissions by 50% by 2030 and by 100% by 2050. In Vienna, almost one third of the final energy consumption is attributed to transportation⁵. Shifting to eco-friendly modes of transportation, such as walking, cycling and public transport use, as well as the implementation of new technologies, such as electric propulsion in motorized vehicles to reduce emissions, make up some of the measures taken. Additionally, mobility is also complemented by optimizing the use of public spaces to create the “city of short distances” and improve connectivity and traffic management measures in favor of cyclists and pedestrians.

In the construction/building sector, it is essential for Vienna to provide affordable, high-quality buildings at the same time as being energy efficient, in terms of insulation, and built with eco-friendly materials. In order to achieve carbon neutrality in this sector, Vienna's objective consists of promoting greening and solar energy in buildings, heating requirements covered by renewables or district heating from 2025 onwards, and reusing or recycling 80% of building components and materials after demolitions or refurbishments.

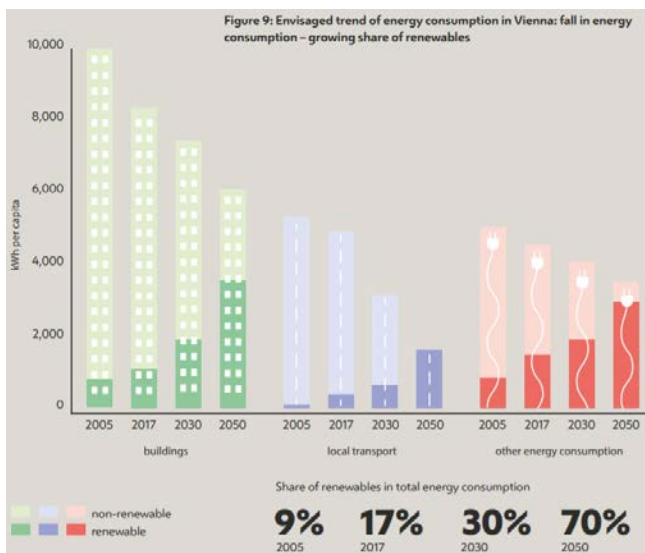


Figure 3: Energy consumption trends in Vienna: fall in energy consumption and growing share of renewables. Source: City of Vienna (2019). Smart City Wien Framework Strategy 2019–2050. Vienna's Strategy for Sustainable Development.

Even though measures to reach these objectives have already put in place, they might be challenging to reach without more support, so, all these targets need the contribution of the federal government and the EU. This notion will be explored in the following section.

IV. Link with other plans at the urban level

Vienna's environmental policies are not evolving in a vacuum. Indeed, they need to be understood as part of a wider local,

national and international framework of strategies, laws and agreements. Like many cities, Vienna's case highlights that climate policies should not just be seen as climate mitigation and adaptation measures, but integrated to all aspects of urban planning. The Smart City Wien Framework Strategy (2019-2050) illustrates this holistic approach followed by the city of Vienna. Vienna intends to build on the sustainability and resilience concepts in order to develop its robustivity and adaptability in the long-term to successfully face the challenges of global climate change. To do so, environmental concerns and goals are integrated to a wide range of domains in urban planning (the “traditional” sectors such as transportation, land use, energy, but also digitalisation, education, social inclusivity, healthcare, economic development...). Smart City Wien is presented as an inclusive plan encompassing all aspects of urban life. The theme of social inclusion is at the heart of the strategy: the City emphasizing the necessity to achieve a good quality of life for all the inhabitants.

V. Links to national policy frameworks

Due to the fact that Vienna's plan to decarbonize different sectors cannot be done in isolation, the support and contribution from the national government and even the

European Union is essential. For example, in the transportation sector, reaching the targeted reduction of carbon emissions by 2030 implies and requires that “the EU regulation on commercial vehicle fleets will succeed in halving CO₂ emissions per kilometer and that measures by the federal government and other provinces will support the shift from private motor vehicles to eco-friendly modes of transport”⁶. This situation highlights the challenges of multilevel governance and the way policies at the international or national level may impact the effectiveness of policies at the local level.

At the national level, Austria has recently committed to be carbon neutral by 2040, which is a very ambitious target, when compared to the European Union's objective of carbon neutrality by 2050. Similarly to the city level, the national carbon reduction strategy is focused primarily in the building and transport sector, since transportation is one of the most polluting sectors at the national level accounting to 46% emissions⁷. The strategy follows the principle of avoiding nonessential travel, shifting towards efficient modes of transport and improving the

“
The overarching goal of the Smart City Wien Framework Strategy is to combine maximum conservation of resources with social and technical innovation to safeguard our city's outstanding quality of life.
”

Mayor Michael Ludwig and Deputy Mayor Birgit Hebein

technologies used. For the building sector, the potential for reduction can be seen in thermal renovation and switching to renewable energy sources and high efficient heating systems. This will allow for a reduction of emissions “in a socially and economically sustainable manner by around 3 mt CO₂eq to around 5 mt CO₂eq by 2030”⁸. Even though Vienna is the Austrian city which has the lowest rate of GHG emissions per inhabitant, it is valuable to integrate and harmonize both the national and local policies, as both approaches contribute to wider, global objectives, particularly to achieve carbon neutrality by 2040 in Austria.

VI. Focus on the energy sector

To conclude this chapter, let's have a closer look at the energy sector in particular. Vienna imports the majority of its needs in energy (88.4%, more than 70% of which being oil and gas) and only produces locally 12.9% of its energy consumption (renewables and combustible waste⁹). Over time, Vienna's final energy consumption has increased, but the GHG emissions have remained relatively stable¹⁰. When examining the final energy consumption, we can see that the main

6 City of Vienna (2019). Smart City Wien Framework Strategy 2019–2050. Vienna's Strategy for Sustainable Development

7 Federal Ministry Republic of Austria, Sustainability and Tourism (2019). Integrated National Energy and Climate Plan for Austria 2021-2030.

8 ibid

9 City of Vienna (2021). Energiebericht der Stadt Wien

10 ibid

sources of energy in Vienna are oil, gas and electricity¹¹. The consumption of electricity, gas and district heating have increased over time, while gas has slightly decreased, and coal and woodfuel disappeared in the early 2000s. The most energy-consuming sector is transportation, followed closely by private households and services (table 4).

The share of renewables in the gross final energy consumption has increased, from 5.5% in 2005 to 9.5% in 2019, partly due to an increase in the production of local renewables. Vienna's production of electricity via renewable energy is dominated by hydropower, and to lesser extents biogenic fuels and solar energy¹² (whose production has been increasing rapidly in the last few years).

In accordance with this diagnosis of the energy sector, the City of Vienna has set up an Energy Framework Strategy for 2030¹³, whose main goals and priorities are: supply security (ensuring a reliable and uninterrupted supply), social impact (ensuring affordable energy prices for all), increasing the share of waste heat and renewables (with an objective of 20% by 2030), economic viability (via technological and infrastructural investments), and energy efficiency (essentially through buildings refurbishments). The authorities intend to

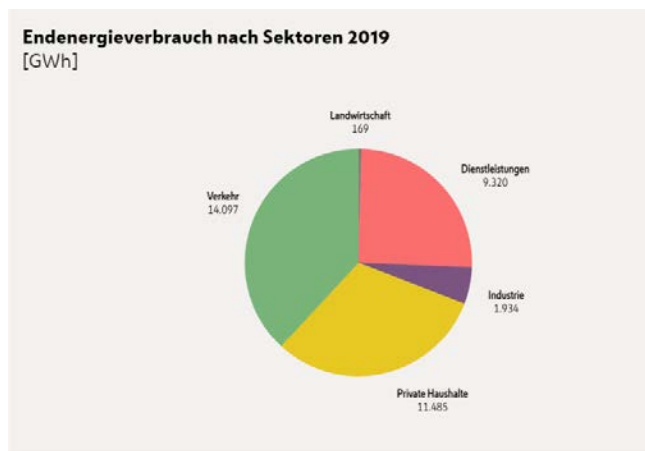


Figure 4: Final energy consumption per sector
Source: City of Vienna (2021). Energiebericht der Stadt Wien.

further develop the “Vienna Model”, based on the production of energy via waste treatment, waste heat and renewables. Different areas for action are identified, including spatial energy planning, innovation and digitalisation, mobility, and energy consumption.

Conclusion

Vienna's Strategy for Carbon Neutrality is certainly one of the best in Austria. The city-state has been working on diminishing its greenhouse gases since 1990 and is today the least polluting Austrian city (in terms of GHG emissions per capita). The environmental policy sets ambitious goals, such as being carbon neutral in 2040, and until now has

been quite successful in reaching the targets, sometimes far in advance (Klip I). The strategy tends to follow the rationale of “avoid, shift, improve” and relies on Vienna's strengths - high quality public transport network, large social housing stock. The policy range is quite wide: as shown by the Smart City Wien Strategy, climate adaptation and mitigation actions are integrated into a broader framework of urban policies, with a specific emphasis put on digitalisation and social inclusion. This is especially important for Vienna as the heritage of “Red Vienna” still shapes current policies, putting social concerns at the heart of environmental policy-making. Regarding energy, the city sets ambitious goals for adopting a local, decentralized and renewable energy production, based mostly on hydropower and counting on the development of wind and solar energy - it can however be questioned whether such a development is truly possible in a highly urbanized area where space is limited and diverse interests are fighting. Moreover, the integration of Vienna's strategy at other larger levels of governance is still a challenge. The national level in particular can threaten Vienna's ambitions, as the capital is considerably more “green” and “red” than the federal government, which is largely conservative.

11 City of Vienna (2021). Energiebericht der Stadt Wien.

12 ibid

13 City of Vienna (2017). Energy Framework Strategy 2030 for Vienna.

1.3 Vienna's architectural and community identity at stake

Loriane HENNINOT, Antoinette DE ROCHEBOUET, Camille TALLON

A great array of urban models have been experimented in European Cities with the aim to provide their inhabitants with a good quality of life. However, the failure of models such as the city garden model, that transformed towns in the outskirts of cities such as Paris into bedroom communities, highlights the challenges to foster social cohesion between urban centers and peripheries. While the city of Vienna is internationally renowned for its very peculiar and impressive architecture, new developments show that what is really at stake is not only the architectural identity of the city but also the identity of its community and how both have been performed since the emergence of Red Vienna. Drawing from our field experience of Vienna and specifically from our visit to Aspern Seestadt in the last section, we will explore how to create environmentally sound buildings, creating greater social cohesion and avoiding fragmented city between the center and peripheries in Vienna?

I. Building on the architectural heritage from red Vienna: the notion of commons, example of Karl-Marx-Hof

Vienna stands out by the great share of public housing in its housing market compared to other cities that sold a large portion of their stock to the private sector. This housing model is the result of a very unique process of socialist transformations of an imperial city and is characterized by an architectural heritage that embodies the notion of commons. Emblematic of this notion is the complex Karl-Marx-Hof, located in the Heiligenstadt neighborhood and built between 1927 and 1930 according to the plans of the Austrian architect Karl Ehn. This complex was part of the ambitious construction project named the Gemeindebauten, which included more than four hundred housing, social services and cultural buildings spread throughout the whole city. This example demonstrates the major role architecture can play in shaping the city, by producing housing units integrated into a global urban model, and displays the links between architectural choices and urban social organization.

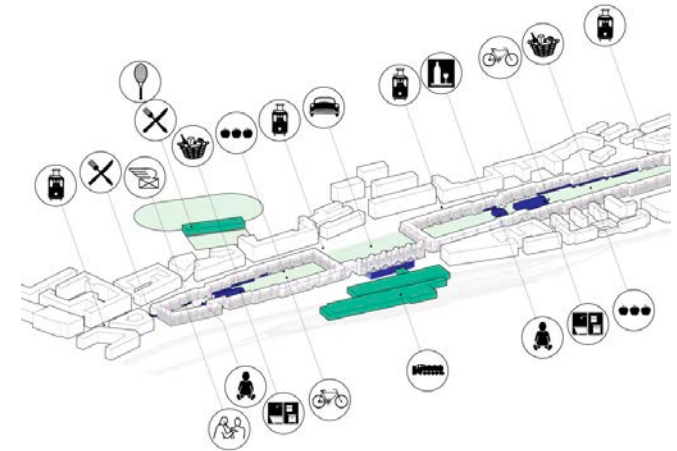


Figure 1: Commons in the complex Karl-Marx-Hof from 1930
Source: Austria University of Waterloo, School of Architecture, Alex Bodkin et al., <https://karlmarxhof-blog.tumblr.com/post/15899663435>

After World War I, a housing crisis hit most European capitals. However, rather than building at the outskirts of the city, Vienna preferred to rebuild the inner city. This choice went against ideals defended by intellectuals such as Marx and Engels who advocated for decentralized settlements. The newly elected Viennese socialist government had to deal with the Habsburg heritage, and rather than reject it, chose to build upon some of its characteristics in order to meet a different political and ideological vision (Blau, 2021). Public housing in Vienna was then not only meant to provide affordable housing to working

classes but also destined to create integrative cultural centers, celebrating the working class rather than the imperial aristocracy. Nevertheless, the first push for public housing came from the need to address sanitary issues related to overcrowded tenements and to the spread of tuberculosis. Complexes built were not only spacious, they also included facilities such as gyms, kindergartens and courtyards. In the end, the design of these buildings was strongly influenced by the bourgeoisie's will to foster hygiene and education among working class men and women. Yet the government was determined to keep working people inside of the city, both reinforcing community bonds and rising living standards (Hatherley, 2015).

Looking closer at the architecture of Karl-Marx-Hof, it is clear that social housing buildings embody particular politics of space and power structures, with specific ideas on the conditions for social cohesion. The building in itself strikes by its monumentality, a common feature with the Hapsburg historical buildings and can be compared to a castle (Hatherley, 2015), with arches and towers. It aims to foster a sense of belonging and a strong community identity, while being integrated to the rest of the city fabric. This design both fits in the architectural trends inherited from the Hapsburg while addressing the need for high-density tenements in Vienna itself. During the Civil War, the buildings of Karl-Marx-Hof, around which some of the confrontations

unfolded, took on a symbolic importance: their physical existence incarnated socialist ideals against fascist ones.

At first glance, Gemeindebauten buildings are not that different from housing blocks built in the city periphery in central Europe, except they are more massive. However, the presence and the quality of the green spaces clearly set buildings such as the Karl-Marx-Hof apart from the aforementioned blocks. Furthermore, their connectedness to the public space has been carefully planned, avoiding a withdrawal of the community from global urban life. The public-private transition is subtle and is key to the encounter between the socialist ideals and the imperial architecture of the rest of the city. The inside of the building itself is designed to give future inhabitants the freedom to furnish their apartments as they wish, and the spaces can be converted to multiple uses, setting out the still praised principle of functional indetermination (Blau, 2021).

The main legacy of the architecture of the commons developed by the government of Red Vienna is the quality of the design of social housing, in contrast with the lack of effort usually put in this type of construction in the rest of Europe. It left a strong ideological imprint in the city fabric. However, the very paternalistic and top-down nature of the architectural design calls for a new model,

more inclusive, to keep fostering social cohesion in a more collaborative way.

II. Adopting the co-housing model as a mean to diffuse social cohesion and social politics

The notion of commons that was so infused in the architectural features of housing developments in Vienna between the two World Wars has paved the way for a more contemporary typology of habitat: the co-housing model. Born in Denmark in the early 1970s, it has spread in northern Europe and Americas. It is now re-emerging in rejection to a society of consumption, where market relations outweighs togetherness (Jarvis, 2019). Co-housing groups can be defined as “associations of people who create living space together for their own use” (wohnfonds_wien, 2018). Residents participate in the design of their future buildings, housing units, and common areas and are active members in the decision-making process for the planning, construction and ongoing operations. Co-housing has shown positive effects on the wellbeing, quality of life and health of the residents, promoting social capital and preventing isolation (Carrere et al., 2020). As Droste argued, this innovative niche solution is a strategic element for cities to accelerate their just and social transition (Droste, 2015).

1.3 Vienna's architectural and community identity at stake

In Vienna, developer's competitions are based on economic, architectural and ecological criteria, as well as social sustainability. A housing project with less than 500 units subsidized by the City of Vienna is assessed by the Land Advisory Board on those pillars (wohnfonds_wien, 2018). In the case of the Sonnwendviertel for instance, the Land Advisory Board reviewed three residential projects from cohousing groups. These cooperative housing combine a new approach to architectural development, with a focus on a community-based design, environmentally sound building techniques and materials, which can intensify social interactions.

First, programming housing buildings as co-living entails providing common areas to enhance social cohesion. This involves (i) community rooms, such as a shared kitchen, a meeting room or a meditation space, as it is the case in another cohousing project in Vienna, the Wohnprojekt (Co-Housing - Wohnprojekt Wien, 2016); (ii) recreational spaces like a community garden, barbecues, or playgrounds for children; and (iii) community infrastructures, for example a laundry room, bicycle garages, or a workshop space. In the Sonnwendviertel, one of the cohousing groups combines a bicycle repair shop and a bicycle café with the apartments. Some projects include a food cooperative. It is a way to also integrate commercial areas and guarantee both goods and services to residents as well as customers for small businesses. Coworking



Figure 2: The common center of WILLDAwohnen cohousing group project in Vienna
Source: www.willdawohnen.at/wohnen

spaces or a guest flat, like in the four houses at WILLDAwohnen, are also amenities that could serve the community and avoid fragmentation between the different plots of an urban layout (WILLDA wohnen — WILLDAwohnen cohousing in Vienna, n.d.)

Second, the bottom-up approach to the design of the building results from ideas

on democracy and citizen participation: inhabitants can contribute to the planning of their neighborhood (see part 3 - chapter 1 on participatory dynamics in Vienna). Thus, a sense of identity, in relation to the notion of belonging that sometimes lacks in recent urban development, can arise from cohousing groups. Creating collective identity is an architectural challenge as co-housing

requires giving “space for the individual and the community” (Co-Housing - Wohnprojekt Wien, 2016). Yet, thanks to an inclusive design process, housing projects can benefit from residents' experimentations and become more resilient. For example, in the Wohnprojekt, the community decided to share a vehicle pool of various types, instead of having individual cars. As a consequence, the amount of parking spaces needed was considerably reduced. Similarly, having more communal places allows to stimulate the ground floor or larger stairways. Even though this adds constraints, it still leaves some room for creativity in the design process to the architects.

Finally, co-housing groups usually encourage sustainable construction. Residents tend to ask for highly energy efficient buildings, photovoltaic panels or other renewable energies, ecological materials such as wood, green roofs etc. In the cohousing group project “Gleis 21” (Track 21) in the Sonnwendvierte, for example, the structure was designed to allow flexibility in the floor plans. In the long term, this means the building could be easily rearranged and thus participates in making the neighborhood more resilient to both societal and environmental changes.

Although co-living can still be considered as a niche in Vienna, the model it conveys in new urban development is inspiring for municipal housing. Programming socially,

designing differently and building sustainably can improve solidarity and connectedness among Vienna's inhabitants. However, this would need to be applied to a larger scale, in urban planning decisions.

III. Reflecting on Viennese new neighborhoods: urban planning decisions and means to create identity - the case of Aspern Seestadt

In addition to addressing issues of social cohesion like small-scale co-housing projects, large-scale urban developments such as Aspern must also think about issues of territorial scale and ensure the project is integrated within Vienna. As a “city within a city”, Aspern must create a “destination” for the thousands of inhabitants and daily commuters that visit or work in its new neighborhoods. Indeed, creating a destiny and an identity is vital to avoid both segregation effects and the risk of falling into a monocentric spatial structure city model, where the economic and amenities related structures are concentrated in the center and where radial movements occur from the peripheries to the center. Different means can be deployed to give social identity to a specific district.

The first method is architectural identity. It involves either innovative and well-thought design structures, a sense of

architectural cohesion between the different infrastructures or the creation of a flagship structure that encourages inhabitants to commute to this place. The Aspern Vienna's Urban Lakeside project has successfully managed to create a spatial identity for the neighborhood. The five-hectare lake forms the heart of the large-scale project. Accessible within less than 30 minutes from the center through extension of the U2 Underground line, it enables inhabitants to enjoy high quality public space and provides room for recreation and social encounters, which are open to all. Moreover, this green and blue project, submitted by a Berliner architectural agency lavaland & TH Treibhaus, is connected to the broader Vienna's Green Belt, which creates a continuity from the city center to its peripheries.

Another fundamental tenet to create a sense of belonging is the integration of diverse actors and a culture of dialogue between experts in charge of developing the projects and civil society (both inhabitants and visitors). Citizen participation can be fostered through temporary urbanism or citizen labs. These initiatives can transform rigid urban planning projects into levers of experimentation, which contribute to an evolutionary and interactionist urban policy and facilitate bottom-up dynamics adapted to local needs. Although these processes can result in friction, they are ways for



*Figure 3: The Urban Lakeside of Aspern project in Vienna
Source: Camille TALLON*

heterogeneous actors to cope with classic antagonisms: bottom up or top down, private or public, institutions or citizens, random or planned. This shift in paradigm no longer involves to plan the city but to facilitate the conditions for the emergence, development and capitalisation of projects that generate “common ground”. For instance, platforms like Aspern Seestadt Citylab regularly involve both local residents or abutters as well as professionals with different fields of expertise in developing new initiatives. In fact, well

before the new city was constructed, the cultural programme Aspern Seestadt PUBLIK was aimed at creating temporary, public places of encounter to examine the credos of urban planning, to investigate new ideas and to test them for their validity. Lastly, the Aspern project includes not only neighbors but also visitors in these processes. Since 2012, visitors can benefit from a comprehensive presentation of the projects and see the construction site from several height levels.

The last field of actions that are worth mentioning to create identity is to give citizens responsibility. Once more, Aspern serves as an example of a project that has successfully made its inhabitants feel empowered. Managed by the Viennese Urban Renewable Office, Aspern offers the opportunity for inhabitants to cultivate food and vegetables for free on a small parcel of land. Candidates are approved by the URO, which ensures a rotation of beneficiaries every 1 or 2 years. This community gardening allows inhabitants to develop a sense of responsibility towards their living environment.

Conclusion

Hence, we can conclude that emotional acceptance of a place fuelled by a positive perception of one's living environment is essential to construct social cohesion within districts as well as with the broader community at a city scale. The legacy of a project such as Karl-Marx-Hof in the last century is a good example of an architectural success of the notion of commons. However, more than a top down approach, social cohesion may arise from local communities themselves and a collaborative design, like it is the case for co-housing groups, should be at the center of new urban developments. In that regard, Aspern can be considered as a flagship project that has successfully onboarded inhabitants to give the district a special identity and that has chances to thrive in the future as well as being smoothly integrated into the city of Vienna.

References

Broe, D. (2020, January 8th). Red Vienna : The enduring legacy of an architecture of hope. People's World.[Online] Retrieved from : <https://www.peoplesworld.org/article/red-vienna-the-enduring-legacy-of-an-architecture-of-hope/>

Carrere, J., Reyes, A., Oliveras, L., Fernández, A., Peralta, A., Novoa, A. M., Pérez, K., & Borrell, C. (2020). The effects of cohousing model on people's health and wellbeing: A scoping review. *Public Health Reviews*, 41(1), 22. <https://doi.org/10.1186/s40985-020-00138-1>

Co-Housing—Wohnprojekt Wien. (2016, November 9). Simon Architecture Prize. <https://www.simonprize.org/co-housing-wohnprojekt-wien/>

Droste, C. (2015). German co-housing: An opportunity for municipalities to foster socially inclusive urban development? *Urban Research & Practice*, 8(1), 79–92. <https://doi.org/10.1080/17535069.2015.1011428>

Jarvis, H. (2019). Sharing, togetherness and intentional degrowth. *Progress in Human Geography*, 43(2), 256–275.

<https://doi.org/10.1177/0309132517746519>

WILLDA wohnen—WILLDAwohnen cohousing in Vienna—Flats Available. (n.d.). WILLDA wohnen. Retrieved November 11, 2021, from: <https://www.willdawohnen.at/en/home>

wohnfonds_wien. (2018). Sonnwendviertel, subsidised living in a new urban district. http://www.wohnfonds.wien.at/media/Website%20PDF-INFO%20Downloads/English%20Information/Broschure_Sonnwendviertel_2018_englisch_web.pdf

1.4 Stakes of residential housing in Vienna : what about just transition ?

Julia CLEMENT, Ophélie MARTINEZ, Anna REVERDY

Since the 2000s, sustainability has become a primary objective of urban strategies, framed as means to combine environmental protection, economic growth, and social wellbeing. However, these goals seem difficult to achieve at the same time, with sustainability seen as an element of rhetoric, too broad, rather than an effective paradigm. Initiatives aiming to improve the quality of the urban environment in deprived neighborhoods have contributed to environmental sustainability and economic growth, but they have also accelerated displacement and segregation (Cucca, 2018). As a matter of fact, better living conditions can rapidly increase rents and property values, which leads to the replacement of lower income residents with upper-class households and to changes in commercial presence, fostering spatial inequalities by segregating communities. At the urban and regional scales, sustainability has been largely used as an urban brand for cities competing in the global arena, in order to attract investment, international events, highly skilled workers, tourists and students. This paper will explore how the transition from the Red Vienna to the Green Vienna has been governed by policies

attentive to social sustainability, in particular through housing policies oriented towards affordability, in order to avoid processes of eco-gentrification and to foster the attractiveness of the city.

I. History of housing policies in Vienna

To grasp whether residential housing in Vienna manages to achieve ecological goals, it is first necessary to take a step back in time to understand the specificities of Viennese planning culture.

A. 1918-1934: Red Vienna and WWII

Even if Viennese planning culture did not start with Red Vienna, this period had major impacts. First, it legitimized the role of government in housing and service provision. Housing policy went beyond simply providing a shelter, it became a way to enhance the working class and socialist ideals. By the end of the period of Red Vienna, 10% of the Viennese population was living in government housing (Reiss, 2017 p. 35). Red Vienna also led to major institutional changes such as the creation of the Province of Vienna, which

ensured tax autonomy. It enabled the city to raise funds for housing policies via a housing tax, or Wohnbausteuer, and a tax on luxury goods. These taxes also ensured attractive rent costs for social housing : 3-4% average income (Reiss, 2017 p. 34). In addition, city administration was restructured and a new city housing group, directing the City's housing policy, was created.

The Karl Marx Hof, a complex of public housing buildings that we visited during our trip, was built during this period, more specifically in 1927-1930. This Art Deco style concrete building contains more than 1,300 apartments built to creatively meet the need for public housing in the city after the bombings of World War I. This building shows how architecture and housing can act as both a political instrument, (by giving houses to workers, politicians strengthen their political basis) and an ideological symbol (the luxury tax and the sculptures representing the issues the political party is trying to address).

When Austria became part of the Third Reich (1934-1945), housing development was not a policy priority, the issue of housing shortage was only addressed

..... 1.4 Stakes of residential housing in Vienna : what about just transition ?



Figure 1: Karl Marx Hof
Source: Marine LE GLOAN

through systematic extermination of Jewish populations (Csendes and Opl, 2006).

B. 1945-1960 : Rebuilding Vienna

The end of WWII enabled significant

changes, but with a strong continuity with Red Vienna's ideals. Housing remained a pillar of Viennese urban policies and by 1958 most of the reconstruction of Vienna was achieved (Reiss, 2017, p. 38). Taxes specifically for housing were still collected but

they were now taking the form of a "housing contribution" or *Wohnbauförderungsbeitrag* which represented a 1% tax on income paid half by the employee and the other half by the employers (Matznetter, 2002, p.273). Moreover, new buildings made by the city still bear the "red signage" as in Karl Marx Hof.

C. 1960-1980: Soft Urban Renewal and Continuity in Housing Policy

During the 1960s and the 1970s Vienna continued to focus on housing infrastructure. During this period, more than 10,000 city social housing apartments were built annually (Reiss, 2017, p. 39). Nevertheless, the city started taking a smaller role as a developer as it started to subsidize or fund non-profit developers. In the 60s one-third of new housing construction was built by non-profit developers (Matznetter, 2002, p.273). Moreover, as we will discuss in more detail later on, it was also during this period that Vienna began to renovate its housing stock.

D. 1980-2000s: Years of Change

By the 80s many firms closed in Vienna, leading to a shift in the economic activity from secondary industry (-23%) to the tertiary sector (+20%) (Dangschat & Hamedinger, 2009, p. 98). This resulted in the emergence of new political parties and a shift in politics. In the housing sector, this

translated into a more entrepreneurialism, managerialism and business-friendly policies (Novy et al., 2001, p. 139). The 90s were clearly dominated by deregulation in planning, but the provincial government refused to sell Vienna's social housing stock (Kadi, J., 2014). Deregulation did result, however, in a system of developer competition for housing called *Bauträgerwettbewerb*. Still nowadays in Vienna, developers compete to obtain funding and development rights, which in fact pushed developments toward more "radical" planning models such as car-free estates.

The 2000s saw the introduction of environmental and additional social issues. On the one hand, a coalition with the Green Party in 2010 led to the publication of important guideline documents, such as the *Smart City Wien Framework Strategy* and the *STEP 2025* in 2014 (Reiss, 2017, p46). On the other hand, the European migrant crisis in 2015 led an estimated 90,000 to make refugee claims in Austria (Der Standard 2016, cited in Reiss 2017). These issues brought new challenges that Vienna had to tackle to ensure a just transition in the residential housing sector.

II. The social and environmental stakes of housing retrofit in Vienna

Almost one third of the existing stock of Viennese apartments in 2011 were

dating back from before 1919, a period when buildings were poorly insulated and access to natural light was not a central concern (Statistic Austria 2011, cited in Hatz, 2021). These buildings, mainly owned by private landlords, were almost not renovated until the 1970s. One explanation is the strict control on rents, which prevents owners from having a return on investment by improving housing conditions. The situation of privately owned old apartments worsened until the first renewal measures were implemented. Launched in 1973, the municipal renewal program consisted of purchasing and renovating houses in the Spittelberg neighborhood, and selling them to private landlords. The result was an increase in rents, pushing previous tenants out of the neighborhood and generating a sudden gentrification. According to Hatz and Lippl (2009, cited in Riegler, 2011), the neighborhood, located near the Museumquartier (7th district) is today completely gentrified.

A. "Soft" urban renewal in Vienna: a best practice to be followed?

After this first experience, the municipality changed its strategy, creating the so-called "soft urban renewal", which consists in a public-private partnership aiming at renovating substandard apartments to 'A-category' dwellings. The municipality used the term "gentle" or "soft" to underline

its effort "to modernize run-down residential buildings – mostly from the turn of the 19th century – without subjecting the residents to a drastic increase in their rent" (European Commission, 2016, p.24). The basic idea is that, for landlords to accept the renovation, it should be economically neutral for them. Thus, public subsidies are provided under the condition that they do not increase the rents of tenants present before the renovation. According to UN-Habitat (2010 cited in Riegler, 2011), between 1984 and 2003, 210 000 flats were renovated, which represent one third of the total stock of Vienna. The "gentle" urban renewal is now viewed as best practice by international organizations such as UN-Habitat, which rewarded the city (UN-Habitat, 2010 cited in Riegler 2011, p.49). The policy succeeded in increasing living conditions, and fighting suburbanization. The share of category D (without toilets or running water) decreased from 20% in 1981 to 6% in 2011 (Statistik Austria, 1981b, 2011, cited in Hatz, 2021).

B. Public stock renewal and recent concerns over climate issues

The "soft" urban renewal did not target appartements owned by the city. Between 2004 and 2017, about 88% of the buildings that benefited from these subsidies were privately rented apartments while only 6,1% was municipal stock and 5,7% was owned by

associations. Hatz explained this difference by the better quality of social and public apartments, which have been progressively renovated along the 20th century (2021). The housing stock owned by the city of Vienna, which represents a quarter of all appartements, receives subsidies for thermo-energetic renewal of façades. In this housing segment, renovation has very low impact on residents since the access is limited by an income level. A shift in investments spent on renewal has been identified since 2000 (Hatz, 2021). Public funding targeting substandard apartments decreased and was redirected to thermal renewal, mainly for public housing properties. Hatz sees this change as a sign of progress in urban renewal policies and of a new policy agenda, more concerned with environmental issues.

C. Increasing rents in the private sector despite regulations

“Soft” urban renewal efforts have not been sufficient to stop processes of gentrification resulting from housing improvements. Indeed, the limitation on rent does not apply for new contracts made after renovation: rents increase when new people move in and in the long term. Former inhabitants who died or moved out are replaced by younger, higher educated and higher income households (Hatz, 2004). Hatz described well the mechanisms at stake

(2021). “Soft” urban renewal is used by the municipality to speak about three types of operations taking place at the level of an apartment, of a building, or of an entire block of building. The second option, called “base renewals” represented 90% of public subsidies used for gentle urban renewal until 2004. During this type of project, different propositions are made to tenants: they can either stay without improvements made to their apartment, move out with a financial compensation or participate in the renewal process to benefit from an improved standard. Hatz (2021) showed that a very low proportion of tenants in renovated buildings participate in the improvements: 41% remained without benefitting from modifications and 48% of the apartments are occupied by new tenants. People staying in their appartements without modifications were either people having lower income or people living in bad quality apartments. The first do not have financial resources to pay for a larger apartment while the second do not have incentives to transform their living conditions. Moreover, the most profitable option for landlords is that new rental contracts replace vacant apartments after renovation. Some landlords prefer to renovate without public subsidies in order to not be subjected to limited rents. Hatz concludes that “the redirection of funding from the private to the public sector reveals the limits of integrating the private sector in sustainable urban renewal” (2021).

III. Social and ecological innovations at the neighborhood scale

In the 1970s, the city was a pioneer of environmental strategies, anticipating some European urban planning directives. More recently and similarly to other European capitals, specific urban developments are taking place, such as new eco-districts or green housing experimental projects. If they are considered tools to foster ecological sustainability, the balance with low housing cost is not always easy to achieve. To avoid rapid gentrification and to foster attractivity, the municipal authorities have conciliated strong attention to the affordability of housing and a solid orientation towards improving the quality of life and sustainability.

In fact, many innovations for sustainable housing have been associated with efforts to maintain affordable rents. Indeed, strong local government intervention in housing (which dates back from the Red Vienna period) has not weakened in recent decades. The 1990s saw a housing construction boom in the Austrian capital, spurred by an increase in immigration due to the opening of the eastern borders and the arrival of refugees from the Balkans (Andersson et al., 2007). To cope with this demographic pressure, the city of Vienna dramatically increased the volume of housing subsidies and decided to double the investment in housing in its periphery. 30 ...

..... 1.4 Stakes of residential housing in Vienna : what about just transition ?



Figure 2: Aspern Seestadt Master Plan
Source: Marine LE GLOAN

Taking private construction into account, this resulted in an increase in the number of apartments built to 10,000 per year. Today, about 50% of the city's total housing stock consists of municipal or social housing.

There is no doubt that the strong presence of public authorities in this sector has been and remains a key factor in the city's strategy to respond to current environmental challenges while incorporating social innovation (Cucca, 2017). Indeed, the city has been able to support a program of 'theme-oriented housing estates' with car-free housing areas, solar-powered buildings, or urban projects oriented towards the integration of migrants and intercultural dialogue. One of the most emblematic projects is the development of the Aspern Seestadt

area. The whole district has the ambition to be an almost car-free district, taking advantage of a very good public transport connection to the center of Vienna. In fact, the Underground line was completed before the start of construction work for buildings. Thus, all the space usually devoted to parking and cars was organized as common space (green areas, children's playgrounds and vegetable gardens) as well as bicycle storage areas. This project offers an example of interesting innovations to contain car dependency in non-central neighborhoods. In addition, Aspern Seestadt has been developed to ensure a social and functional mix, including approximately 60% subsidized rental housing, as well as privately financed home ownership and student housing (Wohnfonds Wien, 2019).

Furthermore, the city of Vienna has been particularly active in the construction of low-energy passive houses. Currently the city has twelve completed projects with about 1150 houses built according to the passive house standard. The most important interventions have taken place in social housing complexes, such as the student residence Molkereistrasse and the housing complex Eurogate 2009 (Cucca, 2017). Yet, when we met with the Aspern district development agency, it was explained to us that ensuring moderate rents was the priority of the municipality, sometimes to the detriment of maximizing the energy performance of the buildings: making housing

energy positive would have increased costs and therefore rents. Each community also has the choice of whether or not to install solar panels, as the maintenance costs increase the occupants' rents.

Conclusion

In a nutshell, Vienna seems to have promoted a balanced model of sustainable urban development, resulting from a legacy of significant investment in the social housing sector. The quality of social housing stock is due to renovation efforts throughout the 20th century, followed by significant investments to improve energy performance. The high percentage of social housing and rent control measures limited the risk of eco-agglomeration and displacement, and have also give low- and middle-income citizens the opportunity to live in a greener and more liveable urban environment. Yet, in the long run, renovations of private rental housing have led to population replacement phenomena. In new neighborhood projects, competitions aimed at maximizing economic balance, rent limitation and environmental sustainability, three objectives that are not easy to reconcile.

References

Andersson, A. E., Pettersson, L., & Strömquist, U. (Eds.). (2007). *European metropolitan housing markets*. Springer Science & Business Media.

Bottero, M., Caprioli, C., Cotella, G., & Santangelo, M. (2019). Sustainable cities: A reflection on potentialities and limits based on existing eco-districts in Europe. *Sustainability*, 11(20), 5794.

Csendes, P., & Opll, F. (Eds.). (2006). *Wien: Geschichte einer Stadt*. Vienna, AT: Böhlau.

Cucca, R. (2018). *Urban Greening in Europe and its Social Consequences The Case of Vienna*. In *Bewegung: Beiträge zur Dynamik von Städten, Gesellschaften und Strukturen*, 69.

Cucca, R. (2017). *Social impact of green urban renewal in two European capital cities: Copenhagen and Vienna in comparison*, The (Doctoral dissertation, Colorado State University. Libraries).

Dale, A., & Newman, L. L. (2009). Sustainable development for some: green urban development and affordability. *Local environment*, 14(7), 669-681.

Dangschat, J. S., & Hamedinger, A. (2009). *Planning Culture in Austria – The Case of Vienna, the Unlike City*. In Knieling, J., & Othengrafen, F. (Eds.), *Planning Cultures in Europe* (pp.95-112). Surrey, UK: Ashgate Publishing.

Der Standard. (2016). *Österreich: 90 000 Asylanträge im Jahr 2015*. Retrieved from <http://derstandard.at/2000028877483/90-000-Asylantraege-im-Jahr-2015>

Hatz, G. (2021): *Can public subsidized urban renewal solve the gentrification issue? Dissecting the Viennese example*, *Cities*, Volume 115, 103218.

Kadi, J. (2014). *The neo-liberal restructuring of urban housing markets and the housing conditions of low-income households: An international comparison*. PhD Thesis, University of Amsterdam.

Krisch, Astrid & Suitner, Johannes. (2020). *Aspern Explained: How the Discursive Institutionalisation of Infrastructure Planning Shaped North-Eastern Vienna's Urban Transformation*. *DISP*. 56. 51-66. 10.1080/02513625.2020.1794126.

Matznetter, W. (2002). *Social housing policy in a conservative welfare state: Austria as an example*. *Urban Studies*, 39(2), 265-282.

Mundt, Alexis & Amann, Wolfgang. (2018). *“Wiener Wohnbauinitiative”*: a new financing vehicle for affordable housing in Vienna, Austria.

Novy, A., Redak, V., Jager, J., & Hamedinger, A. (2001). *The End of Red Vienna: Recent Ruptures and Continuities in Urban Governance*. *European Urban and Regional Studies*, 8(2), 131-144.

European Commission (2016), *“Funding Social Housing”*, *Housing in vienna annual report 2016* https://ec.europa.eu/futurium/en/system/files/ged/housing_in_vienna_annual_report_2016.pdf

Reiss, V. R. S. (2017). *Viennese planning culture: understanding change and continuity through the Hauptbahnhof* (Doctoral dissertation, University of British Columbia).

Riegler, J. (2011). *Competitiveness vs. social balance: Gentrification as urban policy in cases in Budapest and Vienna*. na.

Roberta Cucca & Michael Friesenecker (2021): *Potential and limitations of innovative housing solutions in planning for degrowth: the case of Vienna*, *Local Environment*, DOI: 10.1080/13549839.2021.1872513

..... 1.4 Stakes of residential housing in Vienna : what about just transition ?

Wohnfonds Wien (2019), Aspern
seestadt 2019,
[https://www.wohnfonds.wien.at/media/
Website%20PDF-INFO%20Downloads/
English%20Information/aspern_
seestadt_2019_english-pdf.pdf](https://www.wohnfonds.wien.at/media/Website%20PDF-INFO%20Downloads/English%20Information/aspern_seestadt_2019_english-pdf.pdf)

Wolch, J. R., Byrne, J., & Newell, J. P.
(2014). Urban green space, public health,
and environmental justice: The challenge of
making cities 'just green enough'. *Landscape
and urban planning*, 125, 234-244.

CONTEMPORARY
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2.1 Unpacking mobility dynamics in the city of Vienna

Christophe MINA, Clara OUVRIER, Anna-Maria SPICHER

I. Vienna's mobility strategy, a path to public transport? Context, structuration, and challenges of Vienna's mobility strategy

During the post WWII period, transportation in Vienna was marked by car use, creating tensions with the historical heritage and architecture of the city. The Federal state supported the development of the city's car-based infrastructure until 1968, when the oil crisis combined with a local context of decreasing population created a rupture. At that time, and between 1968 and 1978, the metro was developed and became the backbone of Vienna's transport network. In 1991, the city started to put in place an integrated approach to transport in order to reduce the negative externalities of car traffic. This involved a systematic approach of parking management as well as organizational reforms, investments and extensions to make public transport the city's priority. As a result, there was an increase of public transport use from 29% in 1991 to 35% in 2010 on average

Public Transport Network in Vienna : Tramway and Metro lines

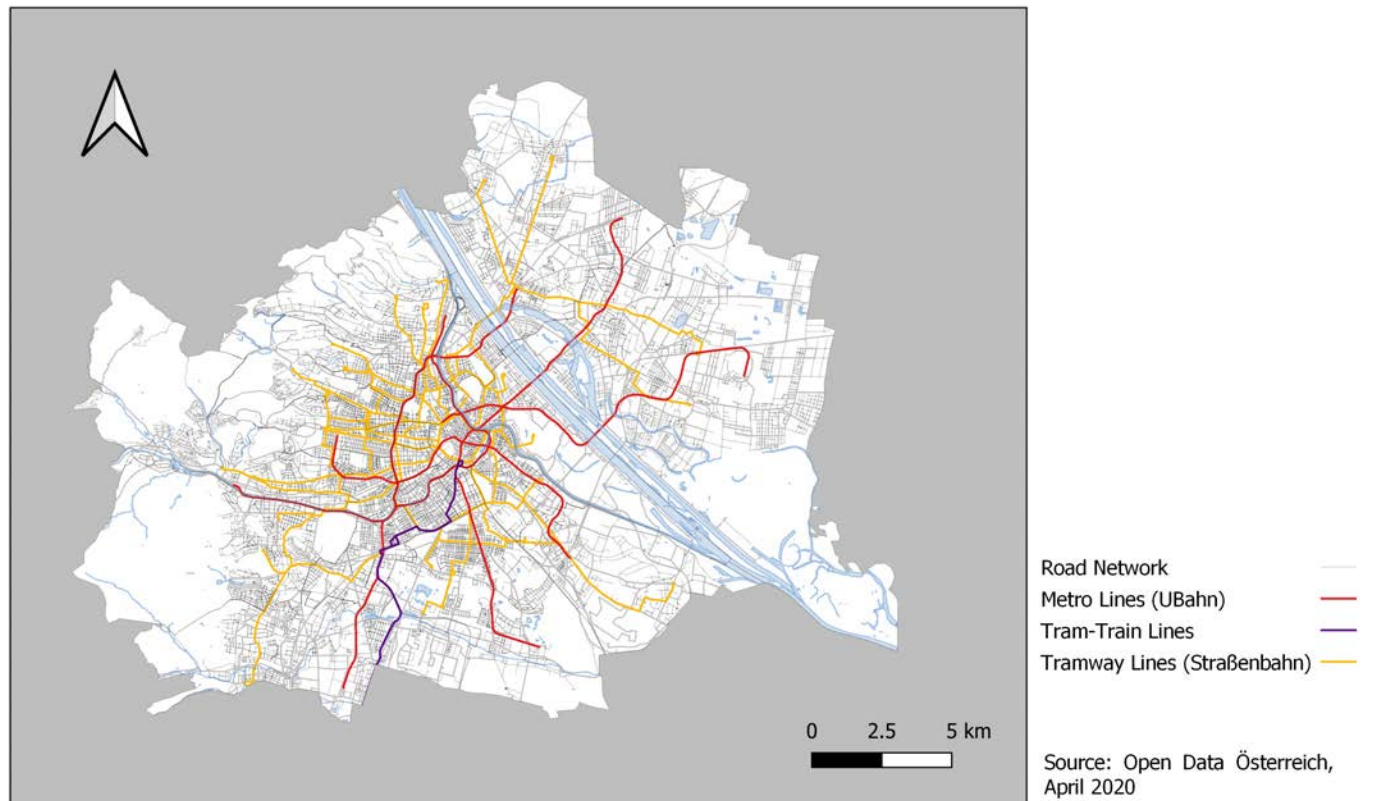


Figure 1
Map produced by Ambroise MAHE 35 •••

weekdays. However, the metro project was criticized for shifting negative externalities, in particular air and noise pollution, as well as congestion, towards the outer districts of the city. In parallel, pro-cycling organizations complained about insufficient efforts to develop cycling infrastructure and to reduce car-use. These criticisms were symptoms of a gap between the desire to include more actors in the decision-making process - and in particular the general public - and a continuation of the former corporatist framework, which favors certain business groups, users' groups and workers' representatives. This period is therefore marked by the prevalence of transport policies in Vienna's governing strategy, while local authorities also faced the challenges of integrating various demands.

Since 2011, the main policy challenges have concerned the implementation of a sustainable transport agenda, introduced after the election of a Red-Green majority in 2010. It focuses on public transport and improving coordination between motorized and non-motorized means of transport (i.e. articulation between public transport, cycling, walking etc.). The goal is to reach a mode share of 80% for public transport, walking, and cycling by 2025. Public transports are being optimized in Vienna through technical-sustainable innovations and incentivizing

Modal Split 2020

So waren die WienerInnen unterwegs (in %):

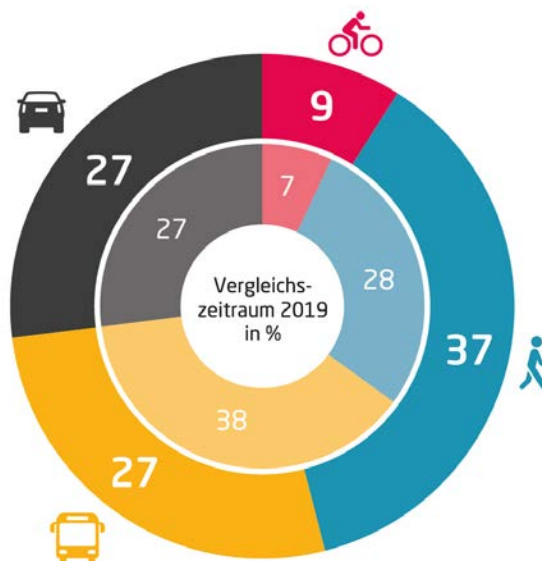


Figure 2
Source: Fahrrad Wien

fares. The municipality's efforts to carry on the parking management policies while facing socio-political push for its extension results in a controlled and incremental development of car-related facilities. Thus in recent years, "political competition increased the role of micro-level political management at the implementation stage, opening a large avenue for influence-seeking groups to obtain exemptions and maximise their own benefits" (Halpern & Orlandi 2020).

II. Vienna as a role model with structural limitations?

Despite the good results in increasing the modal share of sustainable transports¹ and the ambitious path that Vienna has engaged in, some challenges reveal a set of limitations of different nature. There is a biased methodology that does not fully retranscribe the reality of transportation patterns. There is also a discrepancy between the metropolitan scale and the operator's catchment capacity, which stems from institutional unbalances between the capital region and other Austrian federal entities.

A. A biased methodology

The modal share is not always objective since data about journeys are collected through surveys, which constitute a much cheaper calculation method than strictly quantitative measurements. There is consequently a potential bias, leading to the overestimation of "socially desirable statements" (in favour of walking and cycling mostly) by respondents (Wetz, 2012). Next to that, the modal share as it is presented accounts for the number of trips and not the number of kilometers traveled. In other words, it gives a good insight into individual preferences on short distances, but does not properly reflect the share of car use

1 In 2019 as well as in 2020, the modal share of the car in Vienna reached 27%, while 73% of other trips were made with alternative modes of transport, which is bringing the city closer to its 80% goal by 2025, as mentioned previously (Ivancsits, 2021).

2.1 Unpacking mobility dynamics in the city of Vienna

in total length. Car users might thus be more scarce in number than public transport users, but their contribution in terms of pollution and congestion might be underestimated as the length of trips is not accounted for.

B. Ruptured scales of governance

As for the use of cars in the city, the mobility patterns of trans-provincial commuters (mostly from Lower Austria, the province forming an enclave around the capital region) do not fit those of the metropolitan area in terms of modal share. In 2012, over 500 000 people crossed the city border every day in the direction of the city center and back, and 80% of them used a car (Ibid.). That was particularly true for commuters living closest to the city-state of Vienna because of the poor connections between the national railway network ÖBB and the Viennese transport services provided by the Wiener Linien (Ibid.). This suggests that there is a rupture between the metropolitan region of Vienna and its hinterland.

This geographic rupture is linked to a combination of several institutional factors. The first one is that Vienna, as a city State, has its own boundaries. As a federation, Austria is made out of three main levels of government, each of them associated with specific competencies outlined in the constitutional Charter of Austria (Bundes-

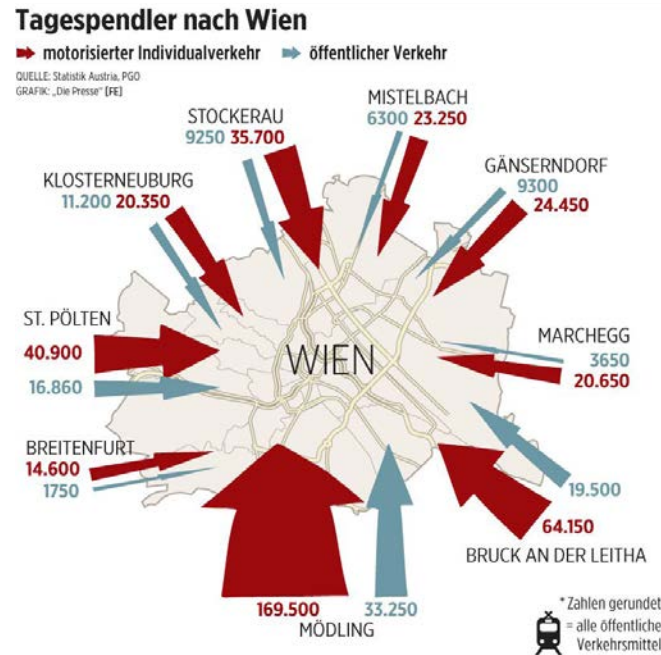


Figure 3

Source: Wetz, A. (2012). « Wien mobil: Wie die Hauptstadt staut und fährt ». Die Presse.

verfassungsgesetz): the federal Government (Bund), 9 federal entities or State Governments (the Länder) and 2098 local Governments (the Gemeinden) (Austrian Federal Ministry of Finance, 2018). Länder and Gemeinden have their own government, administration and local budget, with the exception of the fiscal administration, almost entirely run by the federal level. Transport is therefore divided between the Federal government, which legislates and administers mostly rail, air and water transport as well as highway matters (European Committee of the Regions, 2021), and the local governments, which

are responsible for regional planning and development, including local transport and roads (Parliament of Austria, 2021), and the provision of public transport services (Loser, 2009). Vienna however stands out in this federal landscape as it is both a municipality (and the capital city of Austria) and a regional State, thus concentrating the prerogatives and the resources of two levels of government into one.

The second element is the choice of municipal management of transport services. Vienna delegated its transport services to the Wiener Linien (100% city-owned), and doing so, stands out in the European landscape as it is exempted from following the EU directive on opening to competition. Lower Austria, the neighboring province, is not. As a result, the Wiener Linien operates within the metropolitan region of Vienna, covering almost 2/3 of the population, but stops at the administrative boundaries. With two different systems (one municipally owned and one opened to competition) the coordination faces some difficulties, aggravated by the financial disbalances between Vienna and other Austrian provinces.

C. Institutional disbalances favouring the City-State of Vienna

Due to institutional arrangements, the Viennese metropolitan region receives

2.1 Unpacking mobility dynamics in the city of Vienna

more subsidies from the federal State for transportation than other regions such as Lower Austria, explaining a discrepancy in terms of quality of service. Local and regional transport services are financed by revenue fares, but in practice those revenues do not cover the cost of service provision. Even if the Wiener Linien tends to score better in terms of cost recovery (around 60% in 2019) (Interview with the municipality of Vienna, 2021), local public transport operations require additional financing by the territorial corporate bodies i.e. the federal State, the Land of Vienna and the city. The two latter ones, however, have a limited capacity to raise taxes, as stated in the federal constitution² (Austrian Federal Ministry of Finance, 2018). They heavily rely on federal subsidies - through federal equalisation payments (Finanzausgleich) - to deliver the services that fall within their range of competences (Loser, 2009). In 2009, the federal government granted 15,6 million euros to municipalities to cover for operation costs, and over 55% of those were allocated to Vienna. Another 64,7% of the equivalent amount benefited the capital, intended for capital investment, complemented by a federal support for infrastructural expansion projects, covering up to 50% of total project costs (Ibid.). If these numbers need to be

2 The Austrian federal revenue offices levy approximately 95% of all tax revenues when municipalities levy slightly more than 4% of the total and the Länder less than 1%.

GÜMORE Warenströme

Umlegung der Warenströme (in Tonnen) für die 6 wichtigsten Gütergruppen
Bestandsmodell

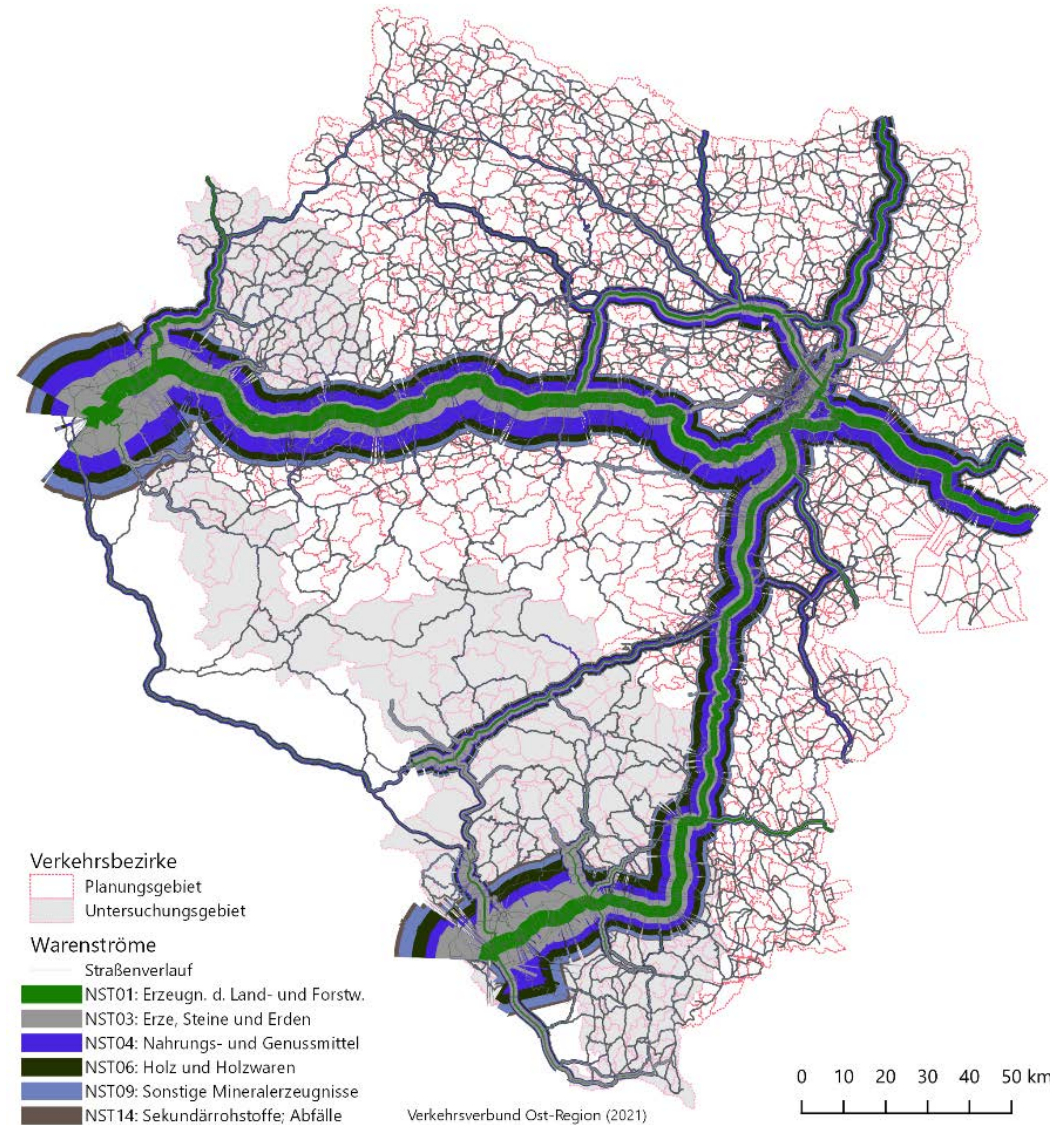


Figure 4: Flow of major goods in Austria's eastern regions
Source: Konsortium GÜMORE, GÜMORE Warenströme, 2021

updated, they already give an idea of the global picture, demonstrating a clear advantage for the Viennese local transportation system.

III. Freight transport in Vienna

Vienna is often thought of as the city of public transport, but this narrative leaves out a sector which accounts for 20-25% of CO2 emissions and 70% of nitric oxide emissions in Vienna: freight traffic (Climate Plan 2009). Freight traffic is mostly carried out by cars and trucks in Vienna and accounts for about 10% of car traffic in the city with trucks emitting 156.914t CO2 in 2015 alone (Österreichisches Institut für Raumplanung 2006). Besides greenhouse gas emissions, freight traffic is also disproportionately responsible for the wear and tear of urban streets, disproportionate occupation of public space and noise pollution.

A. A political debate about a city toll in Vienna

The main problem in freight mobility in Vienna are trucks. Some of Europe's most important street freight traffic routes go through Austria. Vienna, and especially lower Austria, are part of this intense freight network and are at the center of major flows of goods, of which almost all are transported by roads.

Austria's most used highway - the A23 Süd-Ost Tangente - passes through Vienna,

making the city a hotspot of freight traffic (Verkehrsaufkommen study). As a result, only 1% of Viennese goods are transported through rail (Verkehrsaufkommen study). While Austria has put in place a toll on cars and trucks on major roads, Vienna hasn't done so. This measure was included in the Climate Plan of 2010-2020, which has been extended to 2021, but was never actually introduced and implemented in the city (Climate Plan 2009).

One of the reasons for this failure is a public survey on the toll, which was done in 2010. Those surveys are frequently used to ask the Viennese's opinion on public policy topics, especially on mobility and city planning questions. Although only 30% of inhabitants participated and the survey was non-binding, 75% voted against a city toll on all cars, pushing politicians to hold back on their measure (Wien 2010).

In 2014, a low emission zone was introduced to prevent trucks of Euro 0 and 1 norm (and Euro 3 since 2016) from entering the city. However, that measure did not put an end to the debate on restricting traffic in the city. A study in 2018 found that a city toll would reduce car transport by 38%, leading the Vice Mayor Vassilakou and the greens to demand once again the implementation of a toll, but without success (Widholm 2021, Stuhlpfarrer 2019). Finally, this year the SPÖ of Lower Austria started campaigning for a

truck toll on all streets and not just national "Autobahnen" as it is the case today (Jedlicka 2019). This measure could greatly influence traffic in Vienna, since all trucks that go to Vienna must pass through Lower Austria. A city toll could also be of financial help to the city, since the toll on cars is paid to the national government, while a city toll could directly benefit the city's budget.

B. Logistik 2030+: Increasing awareness and missing action

Although few measures have been put in place to actually reduce freight traffic on roads in the city, the topic has found renewed importance. "Logistik 2030+" is a joint action plan for 2030, developed by Lower Austria and Vienna on the topic of freight transport. The main question of the plan, and its namesake, is how to handle the 30% increase in freight transport (mainly by parcel delivery) by 2030. The measures show a clear tendency to consider mobility in terms of efficiency and value creation for the economy and clients. Although there is an awareness of climate considerations, they are not at the center of the project and have limited impact. The plan speaks of the "growing importance placed on the ecological footprint and environmental criteria (...)", but does not actually address environmental issues in the freight sector.

Measure eight “Develop Sharing concepts” aims to “promote projects that are already using sharing approaches”, an objective that falls far short of the objective of “developing concepts and delivering steering methods” (Logistik 2030+, 2020). One chapter addresses ways to “accelerate the fleet conversion” from fossil to “alternative” fuels. The measures in this chapter are focused on supporting e-mobility in the freight sector, which is a huge step forward in terms of emissions reduction, but does not consider the problems of noise pollution and occupation of urban space. In addition, gas is also considered an alternative fuel and not a fossil fuel under the plan, which is questionable. One Logistik 2030+ project tested cargo bikes for parcel delivery instead of trucks. The final analysis found that while as many parcels could be delivered by bike as by truck in one hour, this delivery method would not be implemented on a large scale because of financial and logistical reasons. Once again, economic considerations are placed above climate ones.

Overall, the plan shows a clear shift towards a greater consideration of climate issues in freight traffic debate, and additionally tries to overcome the geographical rupture between the city and its hinterland by providing a joint vision. However, it still falls short of being a clear step to a green Vienna, by putting economic concerns over climate ones. Given it was developed by the Chambers of commerce of Vienna and Lower Austria, this should come to no surprise.

Conclusion

To conclude, in the capital city of a car-focused country in the middle of Europe, mobility will experience large transformations in the coming years. Today, the unique political position occupied by Vienna as both a capital city and federal entity, as well as the geographical rupture between the city and its surroundings, account for contested realities in Vienna. While the public transport network is a very functional and rather socially inclusive one (thanks to the 352 euro ticket among others), the city still has to accommodate a large number of cars and trucks every day. Through initiatives at different scales, like the EU exit from fossil fuels, individual citizens’ action and joint action from the city and Lower Austria, this reality can change. The field of mobility might eventually be able to live up to the green reputation the city has tried to construct.

References

Anderson, John E., Wulforth, G., & Lang, W. (2015). Expanding the use of life-cycle assessment to capture induced impacts in the built environment. *Building and Environment*, 94, 403–416.
<https://doi.org/10.1016/j.buildenv.2015.08.008>

Bundesministerium für Klimaschutz, 2005, *Verkehrsstudie - verkehrsaufkommen, -leistung, -belastung*, Chapter 7.
7 *Verkehrsaufkommen, -leistung und -belastung*
https://www.bmk.gv.at/dam/viz07_kap7

Climate Plan 2010-2020
<https://www.wien.gv.at/umwelt/klimaschutz/pdf/klip2-lang.pdf>

European Committee of the Regions. « CoR - Austria Transport ». Consulté le 12 novembre 2021.
<https://portal.cor.europa.eu/divisionpowers/Pages/Austria-Transport.aspx>.

Federal Ministry of Austria. « Fiscal Federalism », mars 2018.
<https://bmf.gv.at/en/topics/budget-economic-policy/fiscal-federalism.html>.

Ivancsits, K. 2021, *Mobilität 2020: Wienerinnen und Wiener legen fast jeden 2.*

..... 2.1 Unpacking mobility dynamics in the city of Vienna

Weg mit dem Rad oder zu Fuß zurück, Wien Radelt.

<https://www.fahrradwien.at/2021/02/18/mobilitaet-2020-wienerinnen-und-wiener-legen-fast-jeden-2-weg-mit-dem-rad-oder-zu-fuss-zurueck/>

Jedlicka S., 2019, SPÖ will Lkw Maut auf allen Straßen Niederösterreichs, Der Kurier.

<https://www.stadt-wien.at/wien/news/citymaut-fuer-pendler.html>

Kostal, T., Michalitsch V. et Obermann, G. « Local Public Transport in Vienna by Wiener Linien - Governance and Provision of Services ». Working Paper. CIRIEC, 2014. www.ciriec.uliege.be/wp-content/uploads/2015/08/WP14-17.pdf.

Loser P. « Austrian Local and Regional Public Transport ». Working Paper. CIRIEC, s. d.

www.ciriec.uliege.be/wp-content/uploads/2015/11/WP09-08.pdf.

Österreichisches Institut für Raumplanung, Arbeiterkammer Wien, 2006, Anteil des LKW-Quell-Ziel-Verkehrs sowie dessen Emissionen am gesamten Straßengüterverkehr in Wien, Arbeiterkammer Wien.

https://www.arbeiterkammer.at/infopool/wien/Informationen_zur_Umweltpolitik_165.pdf

Popp C., Winkler A., Hahn E., Faast A., 2020, Nachhaltige Logistik 2030+, Stadt Wien/Wirtschaftskammer Wien/Wirtschaftskammer Niederösterreich. https://www.logistik2030.at/?page_id=63.

Republic of Austria. « The Federal Principle | Austrian Parliament ». Consulté le 12 novembre 2021. <https://www.parlament.gv.at/ENGL/PERK/BOE/PR/>.

Stuhlpfarrer M., 2019, City-Maut für Wien? Es wird langweilig Maria Vassilakou, Die Presse. <https://www.diepresse.com/5579761/city-maut-fur-wien-es-wird-langweilig-maria-vassilakou>

Halpern C., Orlandi, C. (2020). Technical Note n°10, Comparative analysis of transport policy processes, Vienna.

VCO: Organisation for the public benefit working on transport and mobility <https://www.vcoe.at/presse/presseaussendungen/detail/wien-hat-prokopf-die-niedrigsten-co2-emissionen-des-verkehrs-aber-verkehr-ist-wiens-groesstes-co2-problem>

Wetz, A. (2012). « Wien mobil: Wie die Hauptstadt staut und fährt ». Die Presse. <https://www.diepresse.com/1268176/wien->

[mobil-wie-die-hauptstadt-staut-und-fahrt.](#)

Widholm K., 2021, Braucht Wien eine City-Maut?, Stadt Wien. <https://www.stadt-wien.at/wien/news/citymaut-fuer-pendler.html>

Wien, Endergebnis der Stadtwahlbehörde der Volksbefragung 2010, 2010. <https://www.wien.gv.at/politik/wahlen/volksbefragung/2010/ergebnis.html>

2.2 Stakes of waste management and Circular Economy in Vienna: is the city innovative?

Maëva FLEYTOUX, Nicolas LIBERT

In cities, managing the increasing amount of waste produced represents an important challenge in terms of environmental impacts, financial costs and logistics. To frame the issue, at the European level, one can refer to the 2008 Waste Framework Directive that establishes a “waste hierarchy”, classifying waste prevention as the best waste management measure and landfilling practices as the last resort. Throughout the continent, dominant methods to treat municipal refuse (excluding construction sector) can be identified: recycling, composting, incinerating, and landfilling. Although EU Member states have rather heterogeneous strategies to deal with waste, the current trends show that “while recycling, composting and waste-to-energy are on a robust, rising trend, and landfilling is shrinking, in several countries the latter is still the preferred or the second most important option” (Levaggi et al.2020).

The concept of Circular Economy has emerged in political discourses to frame virtuous ways of dealing with waste. More widely, it addressed the whole unsustainable economic system, which consists of producing, using

and throwing away without any consideration for products’ end of life and their possible reintroduction into the production chain. Circular Economy principles promote a development model which aims at protecting the environment while also fostering the well-being of citizens. It is based on a reduced and optimized resource use across the whole life cycle of products at all scales, and on innovative production and consumption models. In 2015, the EU adopted its first Circular Economy action plan; the most recent one, part of the Green Deal, was adopted by the European Commission in March 2020.

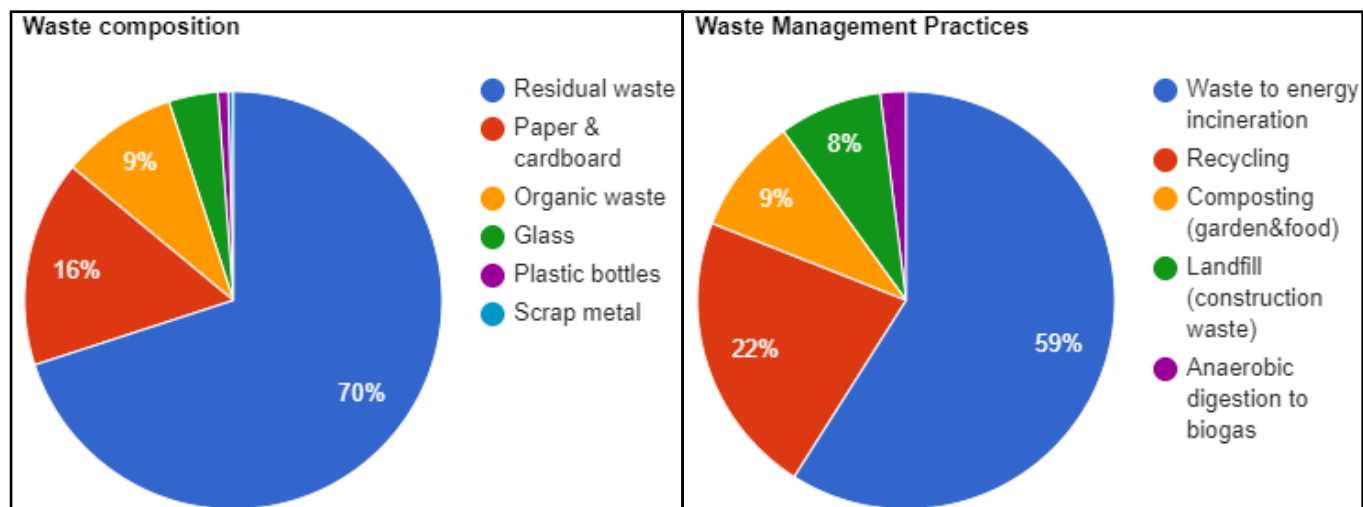
To reflect on our trip in Vienna, we studied Austria’s waste management policies more closely. They are articulated around action plans that include Circular Economy concerns and innovative initiatives such as the Circularity Gap Report or the Circular Economy Platform Austria. In fact, the country ranks third in terms of share of recycling and composting, has a considerably high incineration rate and extremely low landfilling one. In this context, Vienna developed its Smart City strategy Framework for 2019-2050 that is embedded in Circular Economy principles, with the ambition to be a leader in the matter. Particularly using

its landmark, the Spittelau incinerator, the city is branding its waste management practices as circular and innovative.

In this short article, we question this statement by focusing on the main features of its waste management and wonder if it is really compatible with Circular Economy approaches. Is the Austrian capital truly green when it comes to waste treatment?

I. Municipal waste treatment in Vienna

Vienna produces over 1.000.000 tons of municipal solid waste (MSW) per year, representing about 500kg per capita per year. According to the 2016 Waste Management Plan of Vienna, the composition and the management practices of MSW are the following (see following page):



Figures 1 & 2
Graphs produced by Maëva FLEYTOUX & Nicolas LIBERT

As recycling and incineration are the dominant waste treatment methods in Vienna, we will focus on them and analyse their environmental and social implications, before briefly mentioning the other methods implemented by the municipality to deal with waste and their associated challenges.

II. Waste incineration in Vienna: benefits and controversies

One of the main features of Vienna’s waste management is ‘waste-to-energy’ treatment, a set of techniques that flourishes in many European cities because it is considered environmentally sound. Indeed, this solution uses waste to produce energy (electricity and/or heat) through incineration thus avoiding the extraction and burning of

fossil fuels. As a result, it constitutes a two-fold solution, addressing issues surrounding waste management logistics and local energy supply. Indeed, “with around 39 TWh of electricity and 90 TWh of heat produced in Europe annually, Waste-to-energy (WtE) could prevent the production of up to 50 million tons of CO2 emissions that would otherwise be generated by burning fossil fuels” (Levaggi et al. 2020, p1). The heat produced by waste incineration feeds Vienna’s large district heating to provide ‘clean’ energy throughout the city. It can also be used for its cooling district system, which is relatively innovative, and fits perfectly into climate change adaptation measures.

The Spittelau thermal waste treatment plant, operating since 1976, is at the heart of this strategy, becoming both a landmark and

a tourist attraction. After a fire destroyed most of the plant in 1987, the incinerator was renovated by the initiative of the former mayor Helmut Zilk. The plant was technically upgraded between 2011 and 2015 to minimize the environmental impact of the facility and answer ecological concerns, such as reducing the toxicity of combustion vapors (through denitrification processes), and increasing the efficiency of energy production. The Spittelau incinerator burns up to 250,000 tonnes of MSW a year, representing a fourth of the waste production of Vienna, and produces up to 89MW of heat for the city.

What is special about this infrastructure is that, during its first renovation in 1987, it was redesigned as a piece of art by Friedensreich Hundertwasser, in order to minimize the negative impact of the incinerator on the landscape. The renovated plant has gained the reputation of an attractive monument, creating a sense of belonging and making the Viennese people proud. The facility regularly hosts art and cultural events, and also includes a second-hand shop, filled with objects that were saved from incineration, but are in a sufficiently good shape to be sold at a moderate price. The population is now more critical of other “conventional” incinerators, even if they are more modern and efficient. This example shows the importance of public opinion on waste management issues and the relevance of mobilizing people around them.

Art can become a way to introduce ecological concerns to citizens, in connection with waste management. The Spittelau incinerator successfully transformed the issue of waste into something positive, an object of active mobilization that people can relate to.

However, using incineration can be controversial environmentally-speaking as it has many downsides. Indeed, incinerators represent expensive infrastructures that generate air pollution and chemical waste residuals. Even though new technologies exist to mitigate these externalities, we can easily recognise that the waste-to-energy method is not sustainable. More importantly, it may go against waste reduction logic and discourage recycling practices. Indeed, such facilities need a considerable amount of waste to keep running, leading Vienna to import wastes. Moreover, increasing recycling potentially reduces the amount of waste to be burnt in the incinerators, pushing for importation of waste. According to a study (Levaggi et al. 2020), States that display high incineration capacity at the national scale tend to have above average recycling and composting levels, but locally, cities and regions that host WtE facilities tend to have low recycling scores. If Vienna seems to support that recycling and waste-to-energy are complementary, and that the latter doesn't undermine recycling efforts of the city, one can legitimately wonder if that's the case.

III. Recycling and reusing practices: Is Vienna doing enough?

From a collection point of view, Vienna has various waste categories: residual waste, paper, biowaste, glass, metal and plastics. Most of the sorting policies were introduced in the late 1980s except for glass that was already collected since 1977. When compared to other European cities, Vienna seems to have a good collection infrastructure, resulting in a 31% recycling rate when aggregating formal recycling and composting. Since 2004, plastic collection has been limited to plastic bottles in order to reduce the share of impurities and ultimately improve the recovery rate for this category of waste. This measure allowed to reduce the impurity rate from 40% to 10% thus facilitating the recycling process overall. Nevertheless, the following graph shows how little plastic is currently recovered and calls for more efforts from the municipality to tackle this issue.

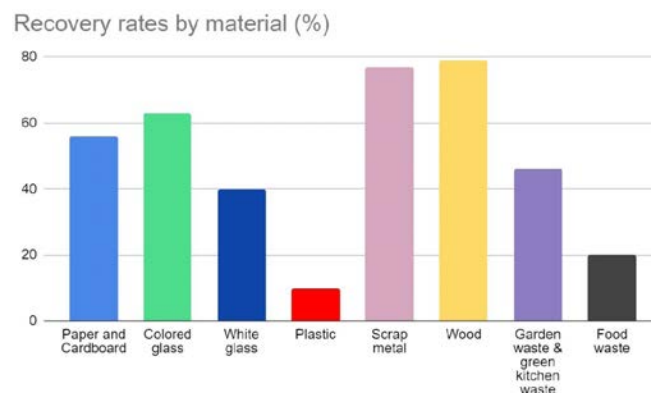


Figure 3

Graph produced by Maëva FLEYTOUX & Nicolas LIBERT

When compared with the 50% national recycling rate of Austria, Vienna seems inefficient in its recycling processes. This gap between national and local recovery rates can be explained by the extensive use of waste to energy processes in the capital, confirming the findings of the study previously mentioned. Since waste is fueling energy systems, large quantities of waste are necessary for the incineration facilities to run and produce a return on investment. However, this economic pressure can be mitigated by the fact that waste management infrastructures are publicly owned in Vienna. As a result, there is a competition between recycling and waste to energy sectors for MSW, and waste to energy is usually more economically and energetically interesting despite being less circular than recycling. Increasing the recycling rate is one of the main incoming challenges for the city of Vienna in regards to waste management.

IV. Bio-waste treatment: main strategies

Composting practices, such as those carried out at the Lobau composting plant, are being developed in Vienna. It transforms garden trimmings and similar waste into high-grade compost benefiting the local population. However, as not all organic waste is suitable for composting, another part of the Viennese strategy concerns food waste management to create biogas. Since 2007, the “Biogas Wien”

plant has been collecting kitchen scraps from households, restaurants, or from food retailing (expired food items) and provides locally produced gas to 1000 households every year.

We find these approaches innovative and relevant for the ecological transition as they contribute to substitute fossil fuel energy sources with clean and locally produced energy. Another benefit of the production of biogas is the potential decarbonation of the current gas network; it also doesn't require additional changes in the infrastructure since natural gas infrastructures are mostly compatible with biogas. Nevertheless, biogas still rejects CO₂ and combustion residues locally. Resorting to biogas appears relevant for the ecological transition when it is exclusively a means to valorise food waste, and does not require lands specifically used to grow the organic matter necessary to produce biogas. The associated risks being an increased demand for food waste that could undermine the development of food waste reduction policies (similar to incinerator demand for MSW) and land use competition with food production.

Conclusion

To conclude, we consider that Vienna displays some interesting features concerning the circularity of its waste management but many challenges and improvements are to

be made: notably regarding plastic recycling. Moreover, although its main incinerator, clearly innovative thanks to its artistic and cultural dimension, enables awareness and sociability around waste topics and includes reuse facilities, the city should acknowledge the controversy behind its high incineration rate and ensure it does not hinder an ambitious and potentially more virtuous recycling strategy. The impact of waste management policies must be assessed in broader frameworks such as the circular economy one in order to consider the global impacts such as land-use changes, increased demand for waste and the implications on the urban metabolism as a whole. We acknowledge that this article did not mention waste generated by the construction sector, which would necessitate its own research.

References

Chaliki, P., Psomopoulos, C.S. and Themelis, N.J., (2016), "WTE plants installed in European cities: a review of success stories", *Management of Environmental Quality*, Vol. 27 No. 5, pp. 606-620.

<https://doi.org/10.1108/MEQ-01-2015-0018>

City of Vienna, General Assembly, (2013, October 6), "Waste Management in Vienna"

https://www.waste.ccacoalition.org/sites/default/files/files/events_documents/ISWA-wasteManagement_Vienna_20131006.pdf

Climate & clean air coalition, (2018-2021), "Solid Waste Management City Profile"

https://www.waste.ccacoalition.org/sites/default/files/files/city_profile_vienna_rev.pdf

City of Vienna, (2013, August), "Waste management in Vienna"

<http://ewit.site/wp-content/uploads/2015/12/Waste-Management-in-Vienna.pdf>

City of Vienna, (2013, August), "Biowaste management in Vienna"

<https://www.wien.gv.at/umwelt/ma48/service/publikationen/pdf/biokreislaufwirtschaft-en.pdf>

City of Vienna, (2021, January), "Biogas Vienna"

<https://www.wien.gv.at/umwelt/ma48/service/>

[publikationen/pdf/infoblatt-biogas-wien-en.pdf](#)

Levaggi, L., Levaggi, R., Marchiori, C., Trecroci, C., (2020), "Waste-to-Energy in the EU: The Effects of Plant Ownership, Waste Mobility, and Decentralization on Environmental Outcomes and Welfare." *Sustainability* 12, 5743.

<https://doi.org/10.3390/su12145743>

Plastics le mag, (2017, March 29), "The Spittelau incinerator: symbiosis of technology, ecology and art"

<https://plastics-themag.com/The-Spittelau-incinerator:-symbiosis-of-technology-ecology-and-art>

Pie charts website: <https://www.rapidtables.com/tools/pie-chart.html>

Vienna, (2014), "Assessment of separate collection schemes in the 28 capitals of the EU"

<https://www.municipalwasteurope.eu/sites/default/files/AT%20Vienna%20Capital%20factsheet.pdf>

Wien Energie, Brochure, (2015, December), "Wien Energie World Spittelau"

https://www.sciencetheearth.com/uploads/2/4/6/5/24658156/besucherbroschuere_spittelau_e_download_ohnehyperlinks_rgb_175808.pdf

2.3 Vienna, the world's greenest city: the promotion of social well-being equipment, but for what ecosystemic services?

Fleur DEPERAZ, Ambroise MAHE, Inès SAHRAOUI

Vienna is the world's greenest city. Approximately 50% of Vienna are green areas (about 200km²), a large part being for free public use. Urban green spaces are associated with several benefits in terms of residents' health and well being: the percentage of green space in people's living environment has a positive association with the perceived general health of residents (Maas, 2006). Green spaces are more than just an urban luxury and their development should be allocated a central position in spatial planning policy. As a result of these stakes, Vienna has worked to maintain the city's share of green spaces at over 50% in its 2050 strategy plan (Smart City Wien Framework Strategy, 2019).

Viennese developments centered around urban green spaces are characteristic of the conception of green areas as social well-being equipment. Historically, these spaces have been employed as a planning tool to approach various social problems, whilst their value in adapting to the negative impacts of the climate

Green Spaces in Vienna

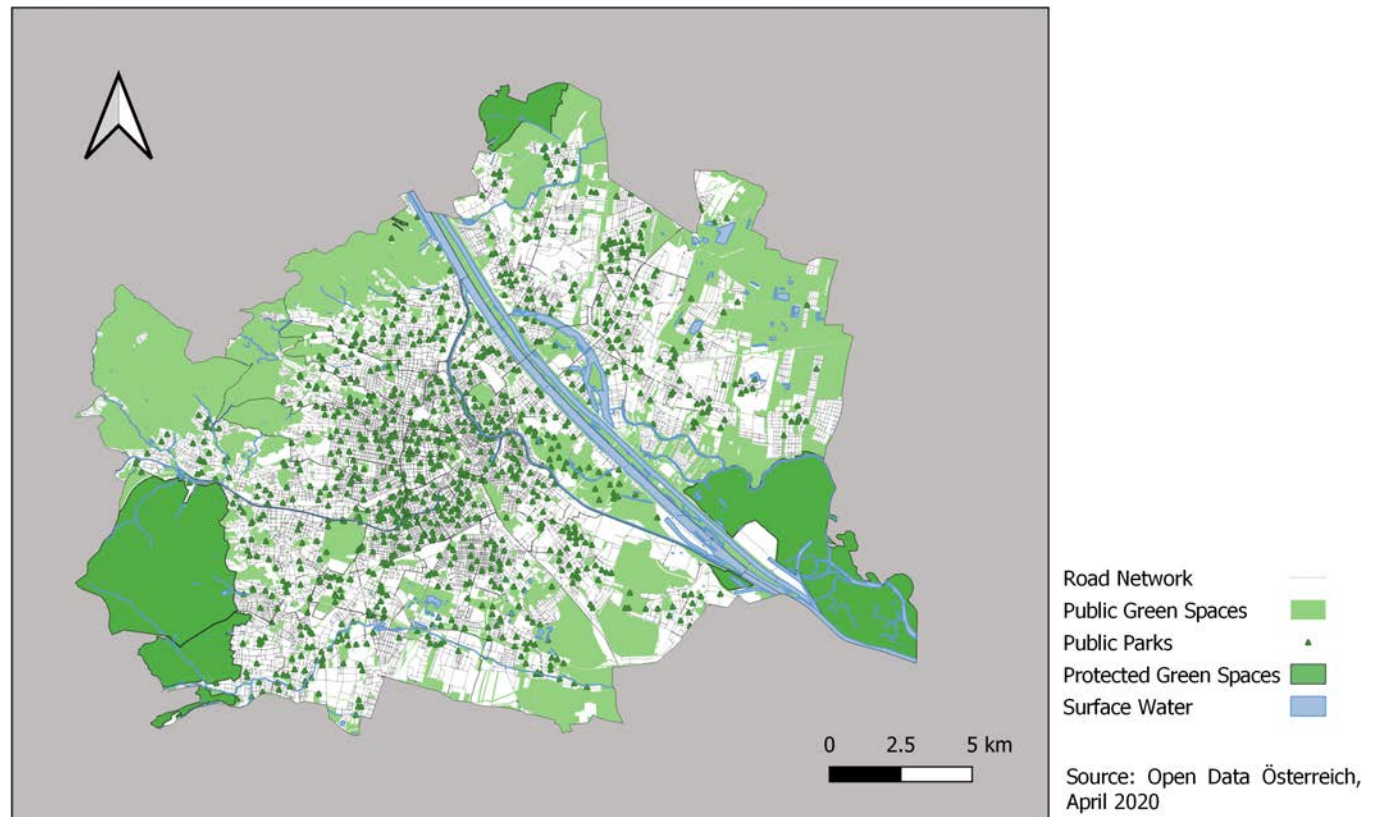


Figure 1

Map produced by Ambroise MAHE

and biodiversity crisis has only recently gained importance (Loughran, 2020). As we observe these dynamics, we can thus ask ourselves: how is the Viennese municipality approaching the role of green spaces in its city? To what extent is the city engaging with the social, biodiversity and ecosystemic aspects of these urban spaces?

I. Social well-being equipment

A. Recognition of green spaces as a necessity

In Vienna, the link between green spaces and inhabitants' well-being can be traced as far as the XIXth century, with a movement to protect the Viennese green belt. The mobilization against the destruction of the Wienerwald (Viennese Wood) can be considered as the first Austrian citizen's initiative. As a result, the Wienerwald was considered as the "Green lung" of Vienna, and later in 1905 the Viennese Green Belt of Forest and Meadow was established as a protected area. At that time, citizens and the City Council acknowledged the necessity to protect green spaces to defend the city from "bad air" and to ensure leisure places for Viennese (Breiling and Ruland, 2008).

B. Ensuring equal access to green spaces: Red Vienna legacy

Later on, during the interwar period, the context of housing shortage gave the

opportunity to the socialist government to create a livable environment for workers, including the necessity to integrate outdoor spaces in their urban plans to improve neighborhoods. Then, in the design of dense social housings providing workers facilities for their daily life, they chose to include large outdoor spaces. They were considered as beneficial for workers, both for their physical and mental well-being, as they allowed them to release the stress of their everyday lives and strengthen their sense of community (McFarland and al., 2020). As an example of this project to reconnect people to nature, the Karl-Marx-Hof housing complex, built in the 1920s and conceived around a large band of grass, provides a high-quality living environment for its residents. It covers an area of more than 150,000 m², of which only about 20 % are built up. The remainder is taken up by green spaces, footpaths and children's playgrounds which gives the inhabitants the possibility to enjoy outdoor activities (City of Vienna, 2015).

More recently, the municipality expressed the necessity to provide citizens an equal access to green spaces. Depending on the district, the share of green spaces differs greatly: 5% for district VII for instance, compared to 73% for district XIII (see Table below). They considered this disparity because access to green spaces is a matter of social equity; it should be integrated in the

affordable housing policies, as it was during Red Vienna. Thus, in 2015, the Council decided to launch a new wave of municipal housing constructions. This "Gemeindewohnungen NEU" scheme focuses on the traditional hallmarks of municipal housing in Vienna, inherited from Red Vienna, but adapted to modern times. By 2020, some 4,000 affordable and well equipped council flats will be built on 28 sites with ample green space and leisure facilities (City of Vienna, 2015). For example, the very recent urban development project Seestadt Aspern, still under construction, and which will accommodate offices and housing, is concentrated around an artificial lake and various artificial green spaces that will provide leisure activity for the future residents. This raises the question of the kind of green spaces provided or fostered by the municipality. If those human-made and managed spaces are sufficient for the enjoyment of inhabitants, it is important to question their quality, and their impact on the urban biodiversity.

II. What ecological functions?

Social well-being was a primary objective of the design of green spaces in the city, since the Red Vienna era. Biodiversity and ecosystem protection in urban green spaces have been considered as urban planning priorities later in the XXth century. Nowadays, they are part of the city's strategies but face urban challenges.

..... 2.3 Vienna, the world's greenest city: the promotion of social well-being equipment, but for what ecosystemic services?

District	Surface (km ²)	Green Space Surface (km ²)	Share of green areas (%)
1	2,87	0,42	15%
2	19,24	8,65	45%
3	7,40	1,27	17%
4	1,78	0,22	13%
5	2,01	0,12	6%
6	1,46	0,09	6%
7	1,61	0,08	5%
8	1,09	0,05	5%
9	2,97	0,32	11%
10	31,83	14,32	45%
11	23,26	8,97	39%
12	8,10	1,11	14%
13	37,71	27,46	73%
14	33,76	21,14	63%
15	3,92	0,46	12%
16	8,67	2,84	33%
17	11,40	6,57	58%
18	6,35	1,85	29%
19	24,94	13,86	56%
20	5,71	0,89	16%
21	44,44	19,14	43%
22	102,30	60,42	59%
23	32,06	10,36	32%

Figure 2: Surface and share of green spaces for each Viennese district
Produced by the authors

A. Appreciating green areas as ecological urban tools

Green spaces are promoted as adaptation tools by the city in its Smart City Wien Framework Strategy (2019). This strategy puts emphasis on green spaces and recreational areas, showing how large spaces dedicated to grassland, woodland and water play an important role in the urban ecosystem

of the city, and enable it to cool down at night.

Protected natural areas, initiated in the XIXth century, have been extended in the XXth century both for urban dwellers' leisure and biodiversity conservation, as first illustrated by the Viennese Forest and Meadow Belt. In 1995, the Vienna Green Belt agreement (Grüngürtel Wien, 1995) was adopted in order to guarantee the protection of additional green areas and free areas through land-use provisions, to design green and open spaces according to landscape plans, and to identify the spaces that needed to be purchased to safeguard the green belt (City of Vienna, 2015). A year later, the Donau-Auen National Park, largely encroaching the city, was founded, being put under permanent international protection. Vienna is thereby the only European metropolis that contains a national park within its urban area. Then, in 2005, the Vienna Woods were awarded by the UNESCO as a biosphere park, ensuring nature, species and habitats protection, as well as enhancing users' responsible behaviors.

Nonetheless, if green spaces are also tools to reduce the urban heat island effect, they are unequally distributed across the city. As a consequence, Vienna has been facing an increase of heat temperatures in its city center, by five degrees compared to the countryside (Eurocities, 2021). Urban heat vulnerability is higher in the center (Stadt Wien, 2019),

because asphalt, concrete, pollution and human activities are more present.

B. Benefiting from legal competencies over biodiversity conservation

Biodiversity conservation and measures against climate change in Vienna have been facilitated by the specific multi-level governance position of the city as the capital of Austria, as a province, and as a municipality (Gemeinde). The municipality is the largest landowner in Vienna, owning most of the lands located in the Viennese Natura 2000 sites (Mauerhofer and Essl, 2017). Within the Austrian legal framework, as a province, Vienna has the provincial competence over biodiversity conservation, and the provincial authority to implement the federal legislation related to clean air and forestry, which is exercised by an administrative unit. The competence related to forestry can be used for instance to protect forest habitat types inside protected areas where commercial use is excluded. The Viennese general multi-level governance scheme is also a way to avoid conflicts of interest between climate change mitigation or adaptation measures and biodiversity conservation, as well as to correctly implement the binding EU law (under the condition that the federal level correctly transposes EU law).

C. Facing limits to urban biodiversity and developing strategies for improvement

If Vienna is composed of a diversity of landscapes and biotopes, thanks to its forestry, agriculture (grasslands, vineyards) and water areas, many urban challenges are threatening green areas and biodiversity in the city, such as population growth, demographic change, soil artificialization, urban development, climate change, resource overconsumption and pollution (e.g., little room of maneuver to manage the pollution of the Danube).

In response to these urban challenges, and as part of the smart city's strategies to protect the urban environment and people's health and well-being, a series of objectives are promoted by the City of Vienna in its Strategic Plan (2015). It aims at creating more recreational areas in line with population growth and in collaboration with local authorities. It also targets an extension of green and open spaces, the planting of more trees in the streets and plants on buildings and soil preservation through compact building design, infilling and regeneration of brownfield sites. Besides, a range of measures focus on the protection of biodiversity and ecosystems, such as habitat management and biotope protection measures under the protection of the 'Netzwerk Natur' (the Vienna's species and habitat protection programme), the creation of additional habitats, the reduction of major

roads, glass facades and artificial lighting, the limitation of the use of biocides, a legislation to protect endangered animal and plant species and their habitats, or information campaigns to change consumption behaviors in order to protect biodiversity.

However, this municipal plan does not provide a detailed assessment of biodiversity losses, as well as precise guidelines on biodiversity policies. Furthermore, on the field, the preservation of ecosystems and green spaces faces some limits in terms of urban planning. During our field trip, we saw lots of remaining artificial areas in social housing complexes and smart city districts, and no green continuity. For example, when we look at the Master plan of the Aspern city neighborhood, we observe that artificial land is predominant: green areas are mainly located in the green belt or on multiple small green areas. Nonetheless, the Aspern's Master plan notice promotes biodiversity protection. In the same vein, the Karl-Marx-Hof housing complex has sometimes ensured grass renewal in its history, since people have not always been allowed to walk on the green areas. Yet, the main limit seems to be financial, due to cost pressure on open spaces and to cost-cutting measures, asphalt and concrete pavement being cheaper (Ring et al., 2020).

Some strategies are designed to respond to these limitations in terms of

biodiversity in urban planning. For instance, an initiative is the urban planning model "Biotope City Vienna - the city as nature", experimented in the 10th district of the city, on approximately 5.6 ha of sealed industrial area (on the former Coca-Cola Company site), transformed into a multifunctional area. This is a strategy which promotes an increased use of urban green infrastructures and nature's regenerative mechanisms at the beginning of the planning process, and which stresses quality objectives such as greenery as an integral component of buildings, minimisation of sealing, design of green and open space across all sites and tenant participation from planning to maintenance (Ring et al, 2021). However, this plan also shows its limits, with a decrease of quality assessments between the making of the planning and its submission, and without decision-making authority from the stakeholders to control these criteria. Therefore, the quality criteria should be incorporated in formal planning instruments in order to enable politicians, stakeholders, planners, developers, and residents to contribute to its fulfilment. Finally, the "City Nature" project, a Interreg EU program between Vienna and Bratislava, that gathers a set of municipal measures to foster knowledge-sharing between scientist communities, valorization of greening and biodiversification (through fundings and awards), and local citizens participation (community gardening), represents a window

of opportunity for more biodiversity inclusion in Vienna (City Nature).

Conclusion

The city of Vienna's natural heritage has been preserved from urbanisation and industrialisation thanks to local authorities' policies, especially since the beginning of the XXth century. Vienna enjoys legal and political advantages due to its status as a capital city, federal state and province, which helps the city preserve its assets. Access to green spaces has been promoted as a necessity for the well-being of its inhabitants, but the quality of these spaces raises questions in terms of biodiversity and ecosystem protection, as well as climate change adaptation. Indeed, if the external spaces of Vienna are safeguarded, almost "put under a bell", the green spaces within the city are unevenly distributed and their quality and diversity are questioned. Whereas some of them are monitored by human intervention, most of them are fragmented and underdeveloped in terms of urban biodiversity, such as in social housing and smart city districts. Considering the implication of the city government to promote nature and biodiversity and the concomitance of environmental pressures in urban settings, a further step would be to develop a mainstream strategy not only to safeguard biodiversity in the city's protected areas and in specific local projects, but also to ensure a green continuity

within urban infrastructures, notably in social housing districts, as well as strengthen the interrelationship between citizens and urban ecosystems.

References

- Aspern Seestadt Website. Downloads.
<https://www.aspern-seestadt.at/infocenter/downloads>
- Breiling, M., G. Ruland. (2008). The Vienna green belt: From localised protection to a regional concept. *Urban Green Belts in the Twenty-first Century*
<https://www.taylorfrancis.com/chapters/edit/10.4324/9781315548838-19/vienna-green-belt-localised-protection-regional-concept-meinhard-breiling-gisa-ruland>
- Brenner, A.-K., E. Mocca, M. Friesenecker. (2021). Vienna's urban green space planning: great stability amid global change. *Vienna*.
<https://www.taylorfrancis.com/chapters/oa-edit/10.4324/9781003133827-12/vienna-urban-green-space-planning-anna-katharina-brenner-elisabetta-mocca-michael-friesenecker?context=ubx&refId=c9823f8e-bc2a-4aae-b8dc-479061c224e4>
- City Nature Website
<https://www.city-nature.eu/>
- City of Vienna Official Website page. Environment and Leisure, Strengthening Biodiversity in Vienna
<https://www.wien.gv.at/english/environment/parks/>
- City of Vienna. Municipal housing in Vienna. History, Facts and Figures.
<https://www.wienerwohnen.at/dms/workspace/SpacesStore/aa75756e-2836-4e77-8cfd-f37cc15e2756/1.0Wiener-Gemeindebau-engl.pdf>
- City of Vienna. (2015). Step 2025. Green and open spaces.
<https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008440.pdf>
- City of Vienna. (2019). Smart City Wien Framework Strategy, Vienna's Strategy for Sustainable Development 2019-2050.
<https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008552.pdf>
- Eurocities. (2021). Beating the heat in Vienna.
<https://eurocities.eu/stories/beating-the-heat-in-vienna/>
- Friesenecker, M., B. Riederer, R. Cucca. (2021). Environmental quality for everyone? Socio-structural inequalities in mobility access to green spaces and air quality. *Vienna*.
<https://www.taylorfrancis.com/chapters/oa-edit/10.4324/9781003133827-13/environmental-quality-everyone-socio-structural-inequalities-mobility-access-green-spaces-air-quality-michael-friesenecker-bernhard-riederer-roberta-cucca>
- Kumnig, S. (2017). Between Green Image Production, Participatory Politics and Growth: Urban Agriculture and Gardens in the Context of Neoliberal Urban Development in Vienna. *ACME: An International Journal for Critical Geographies*, 16(2). 232-248.
- Loughran, K. (2018). Urban parks and urban problems: An historical perspective on green space development as a cultural fix. *Urban Studies*. 57 (11), pp. 2321-2338.
https://www.researchgate.net/publication/325427169_Urban_parks_and_urban_problems_An_historical_perspective_on_green_space_development_as_a_cultural_fix
- Maas J., Verheij RA, Groenewegen PP, de Vries S, Spreeuwenberg P. (2006). Green space, urbanity, and health: how strong is the relation? *Journal of Epidemiol Community Health*. Jul;60(7):587-92.
https://www.researchgate.net/publication/6993276_Green_space_urbanity_and_health_How_strong_is_the_relation
- Mauerhofer, V., I. Essl. (2018). An analytical framework for solutions of conflicting interests between climate change and biodiversity conservation laws on the example of Vienna/Austria. *Journal of Cleaner Production* 178. 343-352.
https://www.researchgate.net/publication/322133262_An_analytical_framework_for_solutions_of_conflicting

interests_between_Climate_Change_and_Biodiversity_Conservation_laws_on_the_example_of_ViennaAustria

<https://www.wien.gv.at/stadtentwicklung/energie/pdf/hitzekarte-methode.pdf>

McFarland, R., G. Spitaler, I. Zechner. (2020). The Red Vienna Sourcebook. Boydell & Brewer.

Mocca, E., M. Friesenecker, Y. Kazepov. (2020) Greening Vienna: the Multi-Level Interplay of Urban Environmental Policy-Making. Sustainability. <https://www.mdpi.com/2071-1050/12/4/1577>

Ring, Z., D. Damyanovic, F. Reinwald. (2021). Green and open space factor Vienna: A steering and evaluation tool for urban green infrastructure. Urban Forestry and Urban Greening, Volume 62. <https://www.sciencedirect.com/science/article/pii/S1618866721001564?via%3Dihub>

Ring, Z., D. Damyanovic, F. Reinwald. (2020). Biotope City – Vienna as a Contribution to Sustainable, Climate-sensitive Urban Open Spaces. Plants in Urban area and Landscape https://www.researchgate.net/publication/341125193_Biotope_City_-_Vienna_as_a_Contribution_to_Sustainable_Climate-sensitive_Urban_Open_Spaces

Stadt Wien. (2019). Vienna heat vulnerability maps.

2.4 Climate adaptation : assessing the risk and preparing for climate crises in Vienna

Camille LARMINAY, Camille LIGER

This article explores the dynamics of urban heat islands, pollution and flooding and their links with the strong urban expansion of Vienna and new innovative housing developments. It develops two focus points: one on Vienna's water system (preparedness to rising temperature) and urban heat island effect.

I. Climate change manifestations in Vienna

The city of Vienna is embedded in a national territory very vulnerable to climate change. Austria is indeed an Alpine state, which has experienced faster global warming than the international average over the past decades, with a temperature rise of 2°C since 1880, compared to 0,9°C in the rest of the world. The characteristics of its mountainous geography makes Austria particularly vulnerable to landslides, heatwaves, avalanches, extreme precipitation and ecosystemic disruptions, and the consequences of such events are exacerbated by the fact that 37% of the territory is already inhabitable, and that the population is expected to continue to grow in the foreseeable future. If Vienna is not exactly

located in a mountain, it is nonetheless rooted in this highly climate risky territory, on which its production and consumption depends.

The city also faces direct threats from climate change. Floodings and heatwaves are the two main risks identified by city government experts. From a heat perspective, the number of heat days in the city per year on average has already doubled compared to 1990. Following the same trend, the frequency of frost days diminishes, and average temperatures at night-time follow a general increase. From a flooding perspective, the city of Vienna is crossed by the Danube River. This location led to three major floods in 2002, 2005 and 2013, costing human lives as well as billions in infrastructure recovery.

II. Adaptation measures

A. Flooding

Vienna is considered to be a shining example of urban flood management. The first measures to diminish the effects of flooding started in the 1870s. The current flood management plan was developed in the 1960s, with the construction of a discharge channel, in

the heart of the city, called 'New Danube'. This engineering process, achieved in 1988, enables the discharge of excess water and debris from the Danube to this new canal, and therefore limits overflowing in the surroundings on the river banks. The mud dug from this discharge channel was used to create a 13-mile long artificial island, the Danube Island. The area was kept as a green recreational area for the inhabitants of Vienna, which is an ambitious measure considering the gains that could have been made by building a new housing stock, at least to cover the costs of building the discharge channel.

In case of flooding, the discharge channel is also backed by supplementary dikes limiting the overflowing of restaurants and facilities located on the river banks, and a set of temporary interdictions put in place concerning boating and kayaking. This flood management system is geared to support a 10,000 year flood and was not even destabilised by the exceptional floods in June 2021, leaving Vienna unscattered compared to Vienna and Belgium. The city government policy on flood management, based on the principles of preparation, recovery, protection and education, was applauded in the international scene.

B. Extreme heat

In the last ten years, the city of Vienna has implemented a growing number of adaptation and prevention measures in the face of increasing urban heat. On the one hand, it has integrated measures related to urban heat islands (UHI) in a variety of strategic plans; on the other, it has designed a dedicated pilot action “Urban Heat Islands–Strategy Plan Vienna”.

Mitigation measures can also be found in a variety of plans, for instance in the Urban Development Plan 2025, in the Vienna Nature Conservation Act, but most importantly in the City’s Smart Strategy and the Climate Protection and Adaptation Programme (KliP II). Including UHI measures in these different planning columns is key for effective, coordinated action on the part of various governance levels. Still, precise constraints seem to be missing from the city’s strategy, since Building Regulations only refer to climate-relevant aspects only indirectly. For example, through the objective “to preserve or create environmental conditions that will ensure a healthy environment, in particular with a view to housing, work and leisure time” (Building Code for Vienna, §1, para 2 Z4). This raises questions with regard to the actual enforcing of UHI-related policy objectives.

The UHI strategy provides a unified framework for fighting extreme heat in Vienna. It identifies four fields for action, namely

awareness building, and implementation options at the masterplanning level, at the zoning level and at the building level. It also cares to differentiate between measures for areas that have yet to be developed and zones in need of rehabilitation or adaptation. Although the plan distinguishes three levels for action, concrete measures mainly revolve around a « greening » strategy, which mostly consists in creating vegetated roofs and facades. And while the UHI-STRAT was presented as a way to spark discussions, these measures have already been championed by local authorities for years.

In 2019, the city took the UHI strategy one step further. The Department of Energy Planning of the City of Vienna asked ECOTEN Urban Comfort, a Czech company specialized in urban and environmental engineering, to help them map out urban heat islands in Vienna. They did so using complex satellite imagery, which resulted in a comprehensive report and recommendations for prioritizing action. This study marked a turning point, as it came to complement sectoral recommendations with geographically differentiated objectives. Prior to this initiative, the UHI-STRAT had only introduced the notion of ‘microclimate’, implying that local conditions had to be taken into account in adaptation planning.

All in all, the city of Vienna clearly displays a concern for extreme heat, but UHI-related policies are still lacking enforceability

and ambition.

III. Municipal housing and the climate adaptation challenge

The city of Vienna prides itself with its globally recognized social housing policy. In the last century, the Austrian capital has enshrined a generous municipal housing policy and gained control over about a half of the housing stock. This model —a signature feature of the social-democratic town hall—is recognized as a remarkable solution for preserving affordability, but it is also a major asset to control urban development. Whether building herself or partnering with private developers, the city buys land deemed suitable for residential development and retains control over the type and nature of development. As a matter of fact, the municipal housing strategy put an end to the ‘Gründerzeit’ period. Literally translating ‘age of the founders’, it references the domination that private developers exerted on urban development at the time resulting in severe inadequacies in the housing production and imbalances in the city map. Thanks to its weight in the local housing stock, as well as the consistently high density of these developments, municipally-backed housing contributes to maintaining a dense urban fabric. Recent studies have established that ‘the Viennese land use pattern does not resemble a land use pattern associated with sprawl’ (Lechner, Maier, 2009), a situation

in which the municipal housing strategy has certainly played a role.

In light of these elements, municipal housing could very well stand at the forefront of the city's climate adaptation strategy. It concerns a vast share of the population, which makes it a great means to both massively improve the building stock and raise awareness about climate adaptation. Yet, and although the city likes to frame its housing model and developments as very innovative, the transformative potential of the municipal housing stock has definitely not been exploited to the fullest. As mentioned earlier, building regulations have not been seriously amended to enforce measures that would contribute to adaptation; rather, adaptation takes place at the wider infrastructure level, or consists in add-ons such as green roofs and facades. Even if these options are valuable tools to adapt already developed zones, it leaves out the crucial question of future developments. The city is continually building new housing units, which represents a fantastic opportunity for steering urban development towards better adapted constructions. Yet, our visits on the ground have not revealed substantial work towards adaptation, especially at the level of the building or building lot. Two main observations stand out. First, we have seen little green roofs or facades, but a lot of areas fully covered with concrete. Second, little/no mention was made of changing up building

materials or design (orientation, raising foundations, etc.) to plan for upcoming extreme weather events.

Still, we must acknowledge that research is currently underway. In recent years, the City of Vienna has teamed up with various organizations (such as the European Union Climate-KIC initiative), hosted conferences (such as the 2020 IBA Wien Symposium on the future of social housing) and most importantly, initiated experiments in a few areas. For instance, in Nordbahnstraße – Innstraße, they have worked to include UHI-reducing measures at the onset of the project. This resulted in a coherent system of green and open spaces, as well as limited soil sealing. Such experiments are encouraging, but one can only regret that public procurement, especially municipal housing is not (yet?) used by the City of Vienna to drive its adaptation strategy. The popularity and weight of the municipal housing model makes it the ideal tool to pave the way towards the implementation of new urban development and construction norms that would truly take into account the upcoming growth of extreme weather events. It is time for the City of Vienna to demonstrate once again that municipal housing can drive change – and progress.

References

Bhattacharjee, S. (2019). Urban Heat Vulnerability Assessment of Vienna, ECOTEN Urban Comfort, 25 p.
https://urban-comfort.eu/wp-content/uploads/2019/11/Booklet_UHVM_Vienna.pdf

Bhattacharjee, S. (2019, August). The Urban Heat Vulnerability Map of Vienna, Austria, City of Vienna and ECOTEN Urban Comfort Division.
<https://www.wien.gv.at/stadtentwicklung/energie/pdf/hitzekarte-methode.pdf>

City of Vienna (2018). Growth of the city - History of Vienna, Municipal and Provincial Archives of Vienna.
<https://www.wien.gv.at/english/history/overview/growth.html>

City of Vienna (2009). Klimaschutzprogram der Stadt Wien: Fortschreibung 2010-2020, 200 p.
<https://www.wien.gv.at/umwelt/klimaschutz/pdf/klip2-lang.pdf>

Climate ADAPT (2021), Austria: National circumstances relevant to adaptation actions.
<https://climate-adapt.eea.europa.eu/countries-regions/countries/austria>

EIT Climate KIC (2019). Vienna's

journey to carbon neutrality.
<https://www.climate-kic.org/success-stories/viennas-journey-to-carbon-neutrality/>

Eurisy (2019). Vienna: adapting urban planning to climate change with the support of satellite imagery,
<https://www.eurisy.eu/stories/vienna-adapting-urban-planning-to-climate-change-with-the-support-of-satellite-imagery/>

Hruby, D. (2021, October). In Vienna, a visionary example of dealing with urban floods, The Washington Post.
<https://www.washingtonpost.com/climate-solutions/2021/10/30/flood-vienna-danube-climate-change/>

IBA Wien (2020). Wie wohnen wir morgen: Neue Wege zum sozialen Wohnen in Europa, Symposium Online.
<https://www.iba-wien.at/programm/kalender/event-detail/event/wie-wohnen-wir-morgen-symposium>

Kronberger-Kiesswetter, B., et al. (2017). The Austrian strategy for adaptation to climate change, Part 1: Context, Federal Ministry for Sustainability and Tourism.
https://www.bmk.gv.at/dam/jcr:a97fb5f2-85c5-4027-b377-383f80eee354/NAS_Context_2017_en.pdf

Lechner, J., Maier, G. (2009). Sprawl or No Sprawl: A Quantitative Analysis for the City of Vienna, SRE-Discussion Papers, 3, WU Vienna University of Economics and Business.
<https://ideas.repec.org/p/wiw/wus009/1734.html>

Löschner, L. (2018). The Spatial Turn in Flood Risk Management: A Case study of Austria's Changing Flood Policies, Institute of spatial planning, environmental planning and land rearrangement.
<https://www.wien.gv.at/umweltschutz/nachhaltigkeit/pdf/loeschner-2018.pdf>

Musco, F. (2016), Pilot Action City of Vienna: UHI-STRAT Vienna, Counteracting Urban Heat Island Effects in a Global Climate Change Scenario, Chapter 9.
https://www.researchgate.net/publication/307522390_Pilot_action_city_of_Vienna_-_UHI-STRAT_Vienna/fulltext/57c78fbf08aec24de042b293/Pilot-action-city-of-Vienna-UHI-STRAT-Vienna.pdf?origin=publication_detail

Unterlercher, M. (2018). Flood Risk Management in Vienna: Objectives, Measures, Good Practices, Federal Ministry for Sustainability and Tourism.
https://rainman-toolbox.eu/wp-content/uploads/2021/02/AT-HWRM_Ö_2018_Barrierefrei_EN.pdf

A wide-angle photograph of a city river scene. In the foreground, a paved walkway runs along the water's edge, with a few people walking. A concrete wall with graffiti separates the walkway from the river. Several white boats are docked at a pier on the right side of the river. A bridge spans the river in the middle ground, with cars and a bus visible on it. In the background, a dense urban landscape features various buildings, including a prominent white building with a flag on top. The sky is filled with large, grey clouds, suggesting an overcast day.

GOVERNING ECOLOGICAL AVENUES FOR CHANGE

3.1 Ensuring Social Inclusion in the Making of The Ecological Transition: Citizen Participation Frameworks in Vienna

Margaux BLACHE, Marguerite MATOUSSOWSKY, Clémence MARTEL

Urban resilience, often framed as the capacity of a city's systems, businesses, institutions, communities, and individuals to survive, adapt, and grow in face of shocks and stresses¹, does not only comprise technical and infrastructural challenges but also requires a high level of social inclusion in order to build resilient community networks. The growing importance of participatory mechanisms in climate action bears witness to the integration of climate justice in policy-making aiming at building urban resilience. In 2015, former mayor of Vienna Dr. Michael Häupl signed the 17 Sustainable Development Goals, committing to reduce inequalities by 2030. The city, striving to “empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic status”² then chose to develop business-driven approaches integrating marginalised groups (especially post retirement

individuals and migrants) while also supporting civic engagement at the local level.

This article explores the question of how citizens are consulted in the policy-making process, across the various sectors explored during the study trip (social housing, energy, transport). It pays specific attention to participatory frameworks of governance in the context of rising urban environmental challenges, bearing in mind Red Vienna's heritage in today's conception of urban planning. We then ask ourselves: is there a citizen's pressure shaping Vienna's climate politics? This article specifically focuses on two projects that were presented to us in October, namely Wien Energie's Citizen Power Plants and the project of the Sonnwendviertel. The case study on Sonnwendviertel allows us to explore how citizens have been approached in local urban projects, while the case study of the citizens' power plants launched by Wien Energie will provide an analysis of the system of community energy, its benefits and its limits. The aim of these case studies' analysis is to discover to

what extent the citizens were actively consulted, using Sherry Arnstein Ladder of Participation as a framework, while exploring resonances with the rather top-down tradition of the Austro-marxist administration in the 1920s. Finally, this paper looks at the limits of Wien Energie and Sonnwendviertel projects and questions the social inclusion mechanisms in such endeavours, focusing on the profile of citizens taking part in participation processes.

Methodology

This article is based on the visits and meetings carried out during the study trip, as well as an academic paper but also institutional websites of the city of Vienna. Indeed, it is interesting to see the ways in which various participation schemes are presented by Wien Energie and the Gebietsbetreuung Stadterneuerung, the Viennese Urban Renewal Office.

1 According to the Resilience City Network : <https://resilientcitiesnetwork.org/what-is-resilience/>

2 10.2 Empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status | SDGs Portal (esa.int)

Analytical Framework

Reviewing the different projects in the lense of Sherry Arnstein's ladder of participation allows us to assess the redistribution of power and the influence of citizens in the whole policy process, from agenda setting to implementation and evaluation.

According to Sherry Arnstein (1969), citizen participation is a radical expression to designate citizens' power. It leads to a redistribution of available powers between "power holders" (the political elite) and the "have-nots" (the powerless, often the poorest part of the population). While the principle of citizen participation is rather consensual, it gets more complicated when it comes to the concrete redistribution of powers. Yet from a democratic point of view, discourses on citizen participation without powers' redistribution are meaningless. As put in Arnstein's crude words: it is "a window-dressing participation", a smokescreen that maintains the status quo. Indeed, every claimed citizen-inclusive project is not necessarily redistributive. For it to be truly redistributive, citizens must be able to determine "how information is shared, goals and policies are set, tax resources are allocated, programs are operated, and benefits like contracts and patronage are parceled out" (Arnstein, 1969, p.24). Arnstein determines 8 levels of participation divided in 3 categories:

- Effective citizen power (8-7-6) : According to Arnstein, there is a partnership when citizens can directly negotiate and trade with power holders, while enjoying shared responsibilities. In the Delegated Power situation, they own most of the decision-making power, for instance through the creation of a citizens' cooperation managing the project itself, or through the issuing of subcontracts with citizens. Finally, citizen control happens only when the citizens obtain the full managerial power, with no intermediaries between them and the source of funding.
- Symbolic cooperation/tokenism (5-4-3) : These three rungs describe programs that allow the "have-nots" to hear and be heard, while not guaranteeing that their ideas will be considered. In these processes, citizens have no direct power of action. Information is an important first step but is not worth much if it is not paired with responsibilities and acting capacities, especially if they are organized in a top-down fashion.
- Non participation (2-1) : These two first rungs describe a supposedly citizen participation program that is a substitute for genuine participation and whose goal is to « educate » or « cure » the citizens but makes no attempt to redistribute power.

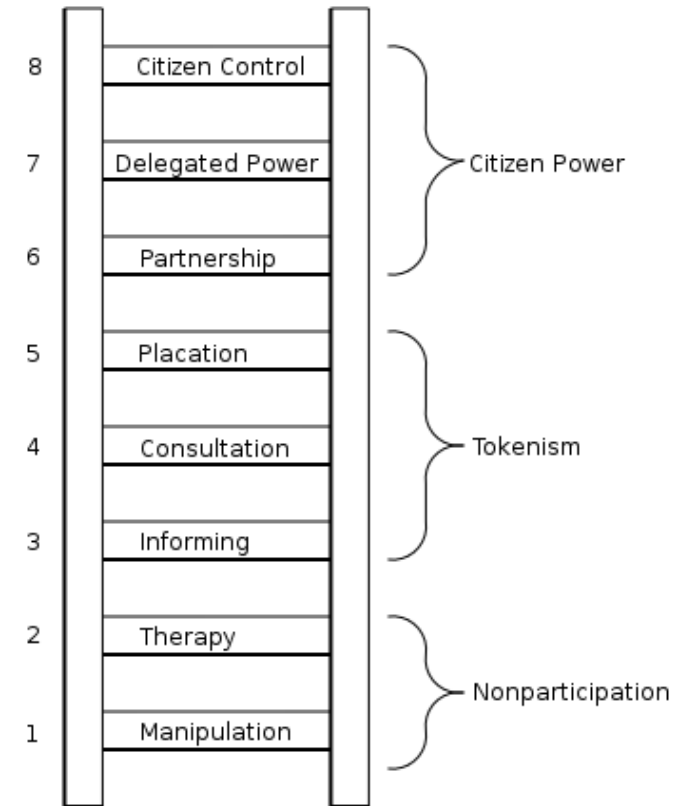


Figure 1 : Eight Rungs on a Ladder of Citizen Participation - ARNSTEIN Sherry R. (1969), "A Ladder of Citizen Participation", *Journal of American Institute of Planners*, n°35/4, pp.217.

Although developed in 1969 and based on the observation of US federal social programs (urban renewal, anti-poverty, and Model Cities), this framework is still relevant to assess the degree of power redistribution in citizen involvement programs. To fully integrate the citizens in the framing of a project, there needs to be a clear determination of ground rules and attribution of responsibilities, not a complicated structure

with committees and subcommittees. The technical assistance must be appropriate, not paternalistic or condescending. The access to information and the training of residents are primordial.

Case Study #1 - Wien Energie Citizen Power Plants

In 2012, Wien Energie, the public enterprise providing electricity in Vienna launched the Bürgerkraftwerk, or the “citizen’s power plant” program. The company is part of the Wiener Stadtwerke, the city’s infrastructure service provider. As one of the largest energy companies in the country, it provides energy services for about 2 million clients, 230.000 companies and industrial sites in Vienna and surrounding areas. As the largest solar operator in Austria, it expanded photovoltaic generation by about 60% in the first half of 2020. They operate around 250 PV plants, including 27 of such citizen solar power plants. The capacity of these installations is around 60 megawatts. Their objective is to create 600 megawatts of solar electricity by 2030 which would be sufficient to feed 250,000 households, or the equivalent of two cities like Graz and Linz put together. Citizen power plants are particularly interesting schemes for citizens living in urban areas who do not have the available

space to install photovoltaic solar panels on their property³. The citizen power plant initiative allows citizens to buy photovoltaic solar panels from the company and receive vouchers that can be redeemed on electricity bills. According to Michael Strebl, the company’s managing director, the objective is to allow citizens to actively participate in climate mitigation projects while earning money as shareholders.

Since its start in 2012, the initiative has evolved and changed its conditions. In the beginning, interested citizens could purchase a maximum of 10 panels (online or through a mobile application) for a price of 950 euros. When the payment is done, the citizen formally becomes a co-owner and the contract with Wien Energie enters into force. The company then constructs the solar module on their behalf. Each citizen then rents the panels to Wien Energie and receives a yearly payment equal to a percentage of the amount invested (starting at 3.1%, currently 2,25/1,75%). Thanks to a partnership with the SPAR grocery chain, the money can also be received in the form of vouchers. The agreement spans a minimum of five years, however it can be ended earlier for a cost of EUR 75. Wien Energie buys back the solar panels when their lifetime (about 25 years) has passed, and the whole money spent is refunded to the individual

owner. In 2020, one could buy a symbolic share of the Photovoltaic power plant for 250 euros, an initial investment that allows them to obtain benefits thanks to attractive interest rates: buyers receive a voucher worth 52 euros annually for five years, or 60 euros for existing Wien Energie customers, which corresponds to an interest rate of over six percent for Wien Energie customers⁴.

Such policy experiments have been flourishing in Austria and Germany in the last decade. Academic research has started to focus on the topic but concrete case studies of the impact on citizen empowerment is still lacking. While the tool is advertised by the company as a participation scheme and a way to involve citizens in the process of ecological transition, common features are to be found. First and foremost, these types of citizen-led renewable energy projects are guided by financial incentivisation. Involvement is pursued on the basis of a financial investment by the buyers who await concrete financial returns from their participation. However, since the plants are being located outside of the city center and are being managed by the company, in the bottom line, it puts the citizens in a position similar to that of utility companies vis à vis the energy consumers. The management of the plants, its installation and operation are being separated from the ownership. The ownership which

3 Wien Energie - Wiener Stadtwerke

4 Wiens größtes BürgerInnen-Solkraftwerk in Betrieb – Verband der Technologinnen und Technologen

is conditional on a seller buyer relationship makes the decision making not participatory in nature. Instead, the utility company makes management choices, and participation is limited to legal ownership and cash profits through a lease arrangement. Which, through the theoretical lense of the Arnstein ladder is considered as non-participation since the power relations between the company and the consumers remains the same. Citizen power plants are therefore integrated into the electrical system's existing utility-based socio-technical arrangements. It is a participatory approach that does not require any political argument or debate among citizens, but a technical policy that has been designed by the company. Some more advanced community energy cooperatives are to be found in Europe where the shareholders and energy consumers are given the power to make decisions with regard to the cooperatives' business strategies for instance. However, these experiments as well demonstrate that these types of participation opportunities are not pursued by a vast majority of citizens as they require a considerable amount of involvement. On the bright side, one can mention that the Bürgerkraftwerk efficiently conciliates the attainment of two relevant aspects regarding the ecological transition. On the one hand, the funding of renewable energy installations and on the other, the awareness of citizens with regards to the environmental impact of their energy consumption.

Case Study #2 - Sonnwendviertel

We had the opportunity to take part in a guided tour of the Sonnwendviertel on our first day in Vienna. It was led by Michael Friesenecker, a sociology PhD student at the University of Vienna, who conducted a study on communal lifestyle in the neighborhood. This new development area is indeed a place of social and environmental innovation. The neighborhood is built on the land of a former train station that was bought by the city in the 2000s and divided in two parts, one constituted by social housing and the other of private housing development, focused on ecologically oriented co-housing. The district was indeed developed cooperatively, pushing architects' teams in the whole district to coordinate with each other in order to create a harmonious environment. The use of competition between architects is central to Vienna public housing policy because it ensures high environmental quality for lower costs. Even if this neighborhood is not designed as an eco-district, the social housing is quite innovative and 1/3 is composed of smaller apartments with communal living spaces that are more energy efficient. These SMART apartments are part of the Smart City Plan launched in 2011 in Vienna. Moreover, the materials ensure low-energy consumption buildings and the apartments are powered by a central heating district based on burning waste. However, in this neighborhood, social affordability

remains a priority, at the detriment of more ambitious green policies. More than a housing project, the neighborhood is also the theater for various citizen participation projects.

A. Participatory housing design and communal spaces : the So.Vie.So project

One of the most interesting aspects of this field visit was to realize how social affordability considerations were linked to citizen participation and environmental quality. The example of the So.Vie.So project, financed by one third by the municipality, speaks for itself: the building was designed hand-in-hand with the citizens. Every household had the chance to choose the amount of rooms they wanted as well as their layout. Communal spaces were also planned cooperatively, such as the big terrace and the library. Finally, a tenant association was formed to take care of the building, with elected members among the residents. This project could be considered as being on the 6th rung of the Arnstein ladder, namely Partnership. Indeed, the residents were actively involved in the design of their own home, moving away from the tradition of only leaving small decisions to the residents after the plan was already set.

B. The role of the Urban Renewal Office (GB) in fostering citizen participation : communal gardening and sustainable mobility

The neighborhood's focus on communal spaces goes beyond housing: the city offers gardening spaces reserved to the community. They are managed by the Gebietsbetreuung Stadterneuerung (GB), the Viennese Urban Renewal Office, which is associated with the municipality. These community gardening spaces are present in every neighborhood and free of charge. Their access is managed by the Urban Renewal Office, organizing waiting lists and rotations between beneficiaries every one to two years. Even if they are destined to the residents, this public initiative is rather a service from the municipality to the citizens than an actual participation scheme.

The city of Vienna is also focused on making the Sonnwendviertel easily accessible, enabling projects mixing sustainable mobility and citizen participation. The "Wege im Sonnwendviertel" project organized by the GB encourages citizens to imagine and elaborate new mobility ways in their neighborhood, by attributing them funding (the Mobilitätsfond Wien) to develop projects aiming at connecting Sonnwendviertel Ost to the rest of the city. In 2020, a wide array of citizen initiatives were

developed, involving Trolleyboys, workshops and sharing models⁵. This project could also be considered as a Partnership (6) on the Arnstein ladder, because citizens' projects benefit from funding, while the municipality keeps control on the decision.

Challenges for citizen participation and social inclusion in Vienna

The two initiatives presented in this article show a strong focus on citizen participation in the city of Vienna, even if mostly controlled, operated through or at the initiative of the municipality or public service company, mostly through the implementation of "Partnerships", corresponding to the 6th rung of the Arnstein's Ladder. By enabling these various projects, the city of Vienna clearly shows a will to integrate the citizens to climate action and the making of Smart Vienna, while promoting a specific view on citizen participation, following the heritage of "Red Vienna". The Gebietsbetreuung Stadterneuerung describes its approach to participation as such : "In contrast to facilities that deal with the concerns of specific target groups, our work focuses on the interests of the entire population. In order to ensure a high quality of life in the district, it is necessary for us to focus on the needs and wishes of the local

people and to be in close contact with them."⁶ (Gebietsbetreuung Stadterneuerung Website, article on Participation). This rather universal approach has the advantage of ensuring the satisfaction of the largest majority possible but strongly marginalizes populations that have different cultural backgrounds. As a consequence, a more integrated and bottom-up approach to citizen participation would be a further step to consider in the making of the ecological transition in Vienna.

5 Auf neuen Wegen! - Unterwegs im Sonnwendviertel. (2021). <https://www.gbstern.at/themen-projekte/stadtteilmanagement-in-neubaugebieten/stadtteilmanagement-sonnwendviertel/unterwegs-im-sonnwendviertel/>

6 Teilhabe ermöglichen - Mitreden, mitmachen. (2021). <https://www.gbstern.at/was-wir-tun/partizipation/>

References

- Academic articles

ARNSTEIN Sherry R. (1969), “A Ladder of Citizen Participation”, *Journal of American Institute of Planners*, n°35/4, pp.216-224.

Rita Mayrhofer (2018) Co-Creating community gardens on untapped terrain – lessons from a transdisciplinary planning and participation process in the context of municipal housing in Vienna, *Local Environment*, 23:12, 1207-1224, DOI: 10.1080/13549839.2018.1541345

Stadlmair, Jeremias. « Correlates of district-level turnout in Vienna: What role does electoral exclusion play? », *Österreichische Zeitschrift für Politikwissenschaft*. 2020, vol.49 no 2. p. 1-

Ilker Ataç (2016) ‘Refugee Protest Camp Vienna’: making citizens through locations of the protest movement, *Citizenship Studies*, 20:5, 629-646, DOI: 10.1080/13621025.2016.1182676

Schreuer, A. (2016). The establishment of citizen power plants in Austria: A process of empowerment? *Energy Research & Social Science*, 13, 126–135. <https://doi.org/10.1016/j.ERSS.2015.12.003>

- Bürgerkraftwerk

“Wie ganz Wien von der Sonnenenergie profitiert.” 2020. [https://kurier.at/cm/wie-ganz-wien-von-der-sonnenenergie-profitiert/\[node:path\]](https://kurier.at/cm/wie-ganz-wien-von-der-sonnenenergie-profitiert/[node:path]) (November 12, 2021).

“Bürgerkraftwerke » privat in Ökostrom investieren.” *Wien Energie*. <https://www.wienenergie.at/privat/produkte/buergerinnenkraftwerke/> (November 12, 2021).

- Sonnwendviertel

“Auf neuen Wegen! - Unterwegs im Sonnwendviertel.” <https://www.gbstern.at/themen-projekte/stadtteilmanagement-in-neubaugebieten/stadtteilmanagement-sonnwendviertel/unterwegs-im-sonnwendviertel/> (November 12, 2021).

“Step 2025 Stadtentwicklung Wien.” <https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008379a.pdf> (November 12, 2021).

“Bezahlbar Wohnen in Wien - Plusminus - ARD | Das Erste.” <https://www.daserste.de/information/wirtschaft-boerse/plusminus/wien-gemeinnuetziges-bauen-100.html> (November 12, 2021).

“Building the City. Examples for and from Vienna.” : 34.

“CAPE 10, das Haus – Ein Ort der Begegnung für alle.” *CAPE 10*. <https://cape10.at/das-haus/> (November 12, 2021).

“GB*-Stadtteilcafé on tour - Ein Sommer voller Begegnungen.” <https://www.gbstern.at/news/gb-stadtteilcafe-auf-tour-durch-wien/> (November 12, 2021).

“Geförderte Wohnungen in 1100 - ÖSW baut Plattform L/Sonnwendviertel.” <https://www.stadt-wien.at/immobilien-wohnen/gefoiderte-wohnungen-in-der-plattform-l-im-sonnwendviertel.html> (November 12, 2021).

“Quartiershäuser Sonnwendviertel | IBA_Wien - Neues soziales Wohnen.” <https://www.iba-wien.at/projekte/projekt-detail/project/quartiershaeuser-sonnwendviertel> (November 12, 2021).

“Smart Wohnungen Wien - moderne Gemeindewohnungen.” <https://www.stadt-wien.at/immobilien-wohnen/smart-wohnungen-wien-moderne-gemeindewohnungen.html> (November 12, 2021).

“Unsere Themen.”

<https://www.gbstern.at/themen-projekte/#freiraum-mitgestalten> (November 12, 2021).

“Urban Farming: Gemeinschaftsgarten und Gemüse Pachtparzelle.”

<https://www.stadt-wien.at/gesundheit/ernaehrung/urban-farming.html> (November 12, 2021).

“Wohnen im Sonnwendviertel - Bauprojekte.”

<https://www.gbstern.at/themen-projekte/stadtteilmanagement-in-neubaugebieten/stadtteilmanagement-sonnwendviertel/bauprojekte/> (November 12, 2021).

3.2 The model of Red Vienna facing the integration of private actors in the governance of the city

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“We don’t really do PPPs, it’s rather POPs, Public to Organizations Partnerships”. This is what Maria Vassilakou - former Vienna’s vice mayor, responsible for urban development and planning, energy planning, mobility, climate protection and citizen involvement - answered when we asked about the prevalence of Public Private Partnerships within the city governance. The conversation was cut short with no chance to really understand this enigmatic reply. This echoes many other vague statements about PPPs in Vienna from the stakeholders we met. The statement we received repeatedly was that the public sector finances and manages the great majority of public services, with no place for privatization or involvement of the private sector in public matters - making Vienna an exception amongst the many European Member States

that have welcomed private partners into public governance. The narrative of “Red Vienna” is still fiercely alive but, in practice, to what extent is the private sector now involved in Vienna’s governance ?

We will answer this question by looking into the prevalence of Public-Private Partnerships (PPPs) in the city. The PPPs are “a mechanism for the government to procure and implement public infrastructure and/or services using the resources and expertise of the private sector”¹. They usually consist of a “long-term contract between a private party and a government entity, for providing a public asset or service”². This mechanism - which is, in its essence, a form of privatization - has been increasingly used across the globe since the 1990’s. In particular, PPPs have been a tool to advance “Smart Cities”, a concept that emerged in the 1990’s as an “alternative to traditional planning modes”,

using new technologies (i.e. ICTs) to tackle urban challenges in an increasingly urbanised world³. Vienna has embarked in a Smart City strategy since 2011, which furtherly leads us to wonder whether it had any impact on the level of involvement of the private sector in its governance. Indeed, our findings show that the private sector has had an increasing role in Vienna’s governance over the last decades (I) and its “Smart City” Strategy has made PPPs a core component of its governance (II) which challenges the “Red Vienna” narrative.

I. The increasing role of the private sector in building the city

This part focuses on the urban planning governance in Vienna that appeared to follow the Red Vienna philosophy working around the Fordist top-down model throughout the 20th century. Then, in a second part,

1 Public-Private-Partnership Legal Resource Center. (n.d.-a). Public-Private-Partnership Legal Resource Center Retrieved November 11, 2021, from <https://ppp.worldbank.org/public-private-partnership/about-us/about-public-private-partnerships>

2 Public-Private-Partnership Legal Resource Center (n.d.-b). Public-Private-Partnership Legal Resource Center Retrieved November 11, 2021, from <https://ppp.worldbank.org/public-private-partnership/>

3 Fernandez-Anez, V., Fernández-Güell, J. M., & Giffinger, R. (2018). Smart City implementation and discourses: An integrated conceptual model. The case of Vienna. *Cities*, 78, 4–16. <https://doi.org/10.1016/j.cities.2017.12.004>

..... 3.2 The model of Red Vienna facing the integration of private actors in the governance of the city

while entering the European Union at the end of the 20th century, Vienna had to deal with the liberalization of its economy. This liberalization led to the reorganization of the building system of the city enabling more flexibility towards the classic hierarchical model of governance.

A. The creation of a strong hierarchical public government of urban planning in the city.

Since the beginning of the 20th century, the model of Red Vienna has followed strict rent regulations⁴. That is to say, for decades the model of the city was based on the public provision of housing where private actors had a minor role in the governance process. Under this very regulated real estate sector, the profitability of the sector was not attractive for private actors to intervene. Indeed, land rent played a minor role in the allocation of housing as well as being a source of income as rental in the private housing sector were regulated.

This was the result of a particular governance in the urban planning system: in

new real estate projects, urban planning was reserved to the “problem solving capacity of experts”⁵. In other words, the decision making of urban planning was organized by the local state in coordination with corporatist institutions that represented the labour force. Then in this model of regulation the labour could gain an important role and influence the strategy of urban planning by providing housing for example.

However, this closed but socially integrated governance shifted when, in the 80s, the Fordist model ran out of steam. The economic dynamism of the city of Vienna experienced a strong decline in its manufacturing sector⁶, consequently leading to the emergence and diffusion of a neo liberal political restructuring.

B. The preponderance of private actors in the New Public Management of the city of Vienna.

As to respond to the Fordist crisis in the 80s, the city of Vienna decided to implement the New Public Management form of governance which consists in the development

of institutions that incorporate management strategies from the private sector⁷. This new urban governance had the objective to transform the organization of the public sector to make it more flexible, using horizontal systems. The emergence of PPPs are part of this new governance that aims at removing some responsibilities and competencies from the local government to areas of the merging new governance structure⁸. One illustration of this urban governance shift can be represented in the real estate market sector.

As a consequence of liberalization since the 80s, the housing rents rose so that the real estate market opened up new perspectives for private investors. Then, new forms of urban governance appeared to answer this increasing demand of private actors to participate in the governance of the city. One key example of this shift is reflected in the Donau project, a big Urban Development Project (UDP) next to the Danube. In this project, planning was organized without taking into consideration the classic statutory planning regulation. A special entity was created through a PPP, “the Viennese development society of the

4 Novy, Andreas, Vanessa Redak, Johannes Jäger, et Alexander Hamedinger. « The end of Red Vienna: Recent ruptures and continuities in urban governance ». *European urban and regional studies* 8, no 2 (2001): 136

5 Ibid p.137

6 Ibid p.135

7 Astleithner, Florentina, et Alexander Hamedinger. « Urban sustainability as a new form of governance: obstacles and potentials in the case of Vienna 1 ». *Innovation: The European Journal of Social Science Research* 16, no 1 (2003): 51-75.

8 Ibid

Danubian micro-region” (WED), to coordinate and structure the network, control the firms etc. This experimental city-planning was described as “a paradigm case of a novel privatized and fragmented network bypassing formal planning procedures, local parliament and civil society”⁹. Then, this new city planning system through the use of PPP led to the formation of a new elitist coalition mainly from real estate businesses, intellectual and internationalized spheres that monopolize the field of planning in line with the hierarchical structure of Vienna.

Thus, by the introduction of the New Public Management governance that initially aimed at fostering cooperation among public and private actors and destructing the hierarchical government model of the city of Vienna, it led to the creation of a socially selective and closed governance system. While European cities continue to compete with each other to become the most attractive city of Europe, Vienna appears to be stuck between its hierarchical social democratic government past and a new form of governance that struggles to integrate all the actors into the decision-making process.

II. The role of the private sector in moving the Vienna towards an innovative and Smart City

In 2011 Vienna announced its will to transform into a “Smart City”. It translated into the creation of a Framework strategy in 2014, updated in 2019. Conceptually, this new governance strategy would aim at modernizing the provision of public services through an integrated and multi-dimensional approach that aims to address urban challenges based on a multi-stakeholder partnership. This new political narrative is based on opening city governance to citizens, research bodies and the private sector by disrupting existing governance patterns and tools (A). Yet, in practice, the private sector prevails far more than all other types of stakeholders in the procurement and management of public services (B). One can argue that the “Red” Vienna narrative is challenged by the actual central role that the private sector has been given in public procurement.

A. Vienna Smart City Framework Strategy : an ambition to open the city governance to all stakeholders

The political narrative behind Smart City Wien is to “put Vienna in motion”, to “have the courage to forge new paths” for the city governance by involving all stakeholders, including private ones. We analyse in this part the semantics behind Smart City Wien exposed in its Framework Strategy published in 2019. which reveals a will to go beyond the “Red” Vienna.

First, if Smart City Wien intends to “build on existing programs and activities and make use of their well-established structures”, it also wishes “to set things in motion”¹⁰. This “reinvention” of Vienna governance should “extend far beyond local government and the municipal administration.” It aims at involving all city stakeholders and creating a “common platform for cooperation and dialogue” to build a “liveable future”. To achieve this end, “Vienna intends to initiate partnerships between the public and private sectors, provide opportunities for broad public participation involving all the city’s residents, incentivise investment in sustainable business models and mobility options and flag up pressing research questions”¹¹.

Second, making space for innovation

9 Novy, Andreas, Vanessa Redak, Johannes Jäger, et Alexander Hamedinger. « The end of Red Vienna: Recent ruptures and continuities in urban governance ». *European urban and regional studies* 8, no 2 (2001):.133

10 Vienna Municipal Administration. (2019). *Smart City Wien Framework Strategy 2019-2050—Vienna’s Strategy for Sustainable Development*. 172. p.24

11 Ibid

requires “having the courage to create new paths” for Vienna¹². This motto reflects Vienna’s will to provoke disruptive changes in the ways it is governed. As they put it, “committing to the Smart City means that the management of the city, in particular, will be repeatedly put to the test and so must be ready to be very adaptable.” It requires “openness” and “a willingness to question established ways of doing things.” It also calls for use of “new tools and approaches in the design and delivery of municipal services.”, including a “high degree of cooperation” with the private sector - but also with research entities and citizens¹³.

If Smart City Wien intends to open the city governance to a wide array of stakeholders, one can wonder if the inclusion of each party is equal or if this new framework only reproduces hierarchical and closed patterns of governance that existed before (part I). In particular, it raises the question of the actual prevalence of large private companies in the balance of power compared to leverage given to citizens and research entities. We hence explore to what extent has the private sector

been given a role in the field implementation of Smart City Wien in the next section.

B. The contributions of this strategy to the governance of urban projects

The strategy presented above presents great ambitions to make Vienna a reference Smart City, which cannot be realized without an adapted governance that shifts towards multi-stakeholder-centered approaches with a key role assigned to all stakeholders including businesses, researchers and civil society¹⁴. While the public sector still has a central role in the implementation of the strategy, private actors are included as project partners and the Smart City Wien Agency serves as “the central coordination point”¹⁵. There are two primary levels of implementation of the strategy. On the one hand, the political level sets up the political priorities and defines policies in the light of increasing complexity coupled with tight resources. On the other hand, there is an operative level in which many tasks are handled with help of the individual organizational units of the City of Vienna and it is carried out with the cooperation within

and outside of the municipal administration. There is a complex governance structure for the implementation of the strategy, with a steering group to manage the operational level and work with all the stakeholders including businesses and researchers to establish a cooperation¹⁶.

The strategy defines tools for implementation that helps to structure and institutionalize the governance. Indeed, the complexity and multidimensional nature of the objectives and thematic fields calls for more collaborative forms of implementation. First, there are interdisciplinary beacon projects which are cross-departmental innovation projects launched to tackle major challenges such as climate change. They involve a number of different organisational units of the city of Vienna and sometimes some private stakeholders. They are managed by “theme managers” who act as ambassadors for Smart City Wien. Second, there are some institutionalized public-private partnerships necessary to enhance Smart Vienna. Those partnerships can be actively initiated by the City of Vienna or the city receives board

12 Vienna Municipal Administration. (2019). Smart City Wien Framework Strategy 2019-2050—Vienna’s Strategy for Sustainable Development. 172. p.140

13 Ibid p.140

14 Fernandez-Anez, V., Fernández-Güell, J. M., & Giffinger, R. (2018). Smart City implementation and discourses: An integrated conceptual model. The case of Vienna. *Cities*, 78, 4–16. <https://doi.org/10.1016/j.cities.2017.12.004>

15 Mocca, E., Friesenecker, M., & Kazepov, Y. (2020). Greening Vienna. The Multi-Level Interplay of Urban Environmental Policy-Making. *Sustainability*, 12(4), 1577. <https://doi.org/10.3390/su12041577>

16 Roblek, V. (2019). The smart city of Vienna. In *Smart City Emergence* (pp. 105–127). Elsevier. <https://doi.org/10.1016/B978-0-12-816169-2.00005-5>

projects and schemes led by businesses, research institutions and civil society organisations. The aim in the medium term is also to create an institutional framework such as project budgets jointly funded from public and private sector sources to set up joint ventures and implement key projects. Third, there are pilot projects to test innovative approaches on a small scale and living labs to develop initiatives at the neighbourhood scale with a collaboration between research institutions, local public sector and civil society stakeholders. These latter initiatives are challenging because they require the allocation of sufficient resources and staff to coordinate the projects¹⁷.

If the implementation of the strategy is demanding in terms of governance and requires a great deal of cooperation between actors with the desire to put citizens at the center, the reality observed is somewhat different. Although the public sector has a central role, there is some disagreement in regard to the other stakeholders. The members of research institutions are more often cited in the speeches of the actors on the strategy than members of private companies but the project analysis revealed that far more private companies are involved in the projects than universities and research centres. Both the implementation and stakeholder discourses

on the strategy agree that civil society is not involved in the Vienna Smart City. Governance must play a key role in promoting the inclusion of different stakeholders and increasing collaboration between them to try to reach the desired citizen-centric vision. It is necessary to raise awareness among stakeholders of the need to involve civil society stakeholders. Some specific projects can be implemented to address governance issues.

Conclusion

Red Vienna is still a strong narrative in the city, but this model is slowly deconstructed to include private actors. Since the liberalization of the economy in the 1980s, the city of Vienna has had to open its governance model to these actors in order to remain economically competitive in Europe. This led to the introduction of new tools in urban governance such as public-private partnerships and the ideal of Smart City, which institutionalized the transformation of Red Vienna but struggles to integrate all stakeholders and more particularly citizens in its governance. Nevertheless, compared to other European countries such as the United Kingdom or Germany, some parts of the governance of Vienna remain strongly public. In particular, several public services have been protected from private stakeholders such as education, health or historical buildings management.

References

Astleithner, Florentina, et Alexander Hamedinger. (2003). Urban sustainability as a new form of governance: Obstacles and potentials in the case of Vienna 1. *Innovation: The European Journal of Social Science Research*, 16(1), 51–75.

Fernandez-Anez, V., Fernández-Güell, J. M., & Giffinger, R. (2018). Smart City implementation and discourses: An integrated conceptual model. The case of Vienna. *Cities*, 78, 4–16.
<https://doi.org/10.1016/j.cities.2017.12.004>

Mocca, E., Friesenecker, M., & Kazepov, Y. (2020). Greening Vienna. The Multi-Level Interplay of Urban Environmental Policy–Making. *Sustainability*, 12(4), 1577.
<https://doi.org/10.3390/su12041577>

Novy, A., Redak, V., Jäger, J., & Hamedinger, A. (2001). The End of Red Vienna: Recent Ruptures and Continuities in Urban Governance. *European Urban and Regional Studies*, 8(2), 131–144.
<https://doi.org/10.1177/096977640100800204>

PUBLIC-PRIVATE-PARTNERSHIP
LEGAL RESOURCE CENTER. (n.d.-a).
PUBLIC-PRIVATE-PARTNERSHIP LEGAL
RESOURCE CENTER. Retrieved November 11,

2021, from
<https://ppp.worldbank.org/public-private-partnership/about-us/about-public-private-partnerships>

PUBLIC-PRIVATE-PARTNERSHIP
LEGAL RESOURCE CENTER. (n.d.-b).
PUBLIC-PRIVATE-PARTNERSHIP LEGAL
RESOURCE CENTER. Retrieved November 11,
2021, from
<https://ppp.worldbank.org/public-private-partnership/>

Roblek, V. (2019). The smart city of Vienna. In *Smart City Emergence* (pp. 105–127). Elsevier.
<https://doi.org/10.1016/B978-0-12-816169-2.00005-5>

Vienna Municipal Administration. (2019). *Smart City Wien Framework Strategy 2019-2050—Vienna’s Strategy for Sustainable Development*. 172.

3.3 The narrative of Red Vienna : a hurdle for an ambitious ecological transition plan?

Coline KÖVES, Esther LASAR, Tom PERRAUD

*If everyone in Vienna knows about “Red Vienna”, it is because the period to which it refers is remembered in everyone’s imagination as a particular moment, temporally situated but whose remains, influences and traces have continued to mark the city’s politics. Indeed, the Red Vienna government won an absolute majority in the elections of 1919 and lasted until 1934, but the period has left its mark on everyone’s memory and has fed fantasies to this day about the experiments and reforms it allowed, marked by its Austro-Marxist ideology. During this period, the focus was on the social policies of health, housing, education and culture, in an attempt to provide comprehensive support for the lives of Viennese people, and more specifically working-class people. The narrative around Red Vienna was therefore built around the pride in the social achievements of the time and the pioneering politics of social support and inclusion (Beniston, 2006). The movie *Das Notisbuch des Mr Prim* (1930), showing the visit of an American journalist during the red period, shows it well: where the latter bitterly observes what the empowerment of the workers has done to the golden Vienna, his Viennese host refutes*

his criticism, proudly showing him the Karl-Marx-Hof building.

Today, if Vienna remains a unique city in terms of social policy and especially in terms of housing, the municipality having succeeded, even after the end of Red Vienna and for almost a century, in providing affordable housing to its residents, new challenges have emerged since. In particular, the ecological transition and the need to respond to the climate emergency is now at the heart of urban policies, and Vienna has taken the problem head on. The city now prides itself on being the greenest city in the world, with 50% of its urban green space dedicated to public use, and its strategy for greening the city has been adopted as part of the Smart City Vienna Framework Strategy 2019-2050. The city is also on track to become the country’s center for green energy, aiming to meet, by 2015, half of its energy consumption from green sources. The city has also redoubled its creative efforts to imagine ways to involve its citizens in this socio-ecological transition through innovative participatory means. For example, the city has encouraged households to purchase their own solar panels to meet their energy needs. Viennay welcomes this image of a green city, and builds

the legitimacy of its actions and urban policies in large part on its efforts - and achievements - in terms of ecological transition.

Literature shows the importance of narratives in community adherence to projects and confidence in public policies and political leaders. Nostalgia as well as criticism around Red Vienna serve as a process of belonging and legitimacy to current social policies, which are no longer Austro-Marxist but find their foundation in a collective identity and history. Only Red Vienna must now adapt to the new image that the city wants to give itself, and it is the challenge of the elected officials to succeed in making people adhere to this new branding. As authors showed, transition policy innovatives are relevant insofar they manage to change norms and beliefs. To shape behaviors regardless of the “real world” and provide individuals with a common aim and a reason to believe they share interests, politics need to focus on ideas, beliefs, and discourses (Delahais & al, 2020). Expectations in terms of future are performative, and very much influenced to the way imaginaries were influenced (Callon 1998) and require a motivational force for action. Narratives are here to allow this performativity to happen through the influence

..... 3.3 The narrative of Red Vienna : a hurdle for an ambitious ecological transition plan ?

of imaginaries, participating in anticipating future state through fictional anticipation of the world informing the decision-making of actors in the present. Only their belief in the veracity of an image, that seems credible, can allow their action “as if” the image conceived was really the future state of the world (Beckert, 2018).

This article analyses the present need to create a narrative to support ecological transition in order to create adherence and convince of a desirable future for all that can be achieved through socio-environmental transition. This narrative will be questioned in the light of the Red Vienna narrative’s persistent traces in today’s political speech and actions.

I. Today’s strategy and the persistence of Red Vienna narrative in social sustainability policies

Contemporary Vienna has certainly inherited from its red predecessor particular strengths that are said to be able to support today’s will to lead in ecological transitions, and these strengths seem to participate in carrying the Red Vienna narrative into the present. The social-democrats’ commitments to housing, mobility and presence of greenery within the city are present in today’s discourse as having created the potential for the city to operate the reconfigurations implied by green transitions, despite the industrial-based party’s policies being far from anachronically integrating purely environmental concerns.

The social-democrats’ deliberate choice to avoid building too densely and to preserve green yards are said to have made Vienna one of the “greenest” cities in the world, as it is today known. The large share of urban greenery can be considered as making today’s strategies regarding urban biodiversity particularly relevant, while public management of green and blue spaces as well as of the water supply gives the city some weight in the orientation of such policies. On the topic of urban green, the social-democrat heritage does not limit itself to urban form, it also follows through on the ideological field; the universalistic approach to “housing for all” has been translated and extended to universalistic access to green urban spaces. This implies for instance providing park infrastructure that welcomes all uses of green spaces - as long as they are compatible with biodiversity objectives. The Döbling neighborhood and its comfortable benches are an example of green spaces making sense in terms of well-being and sustainability for all. Similar rhetoric can be applied to increasing pedestrianisation; the allocation of space for low-carbon mobility and walkability policies reclaim the streets for the people.

It is also emphasized how Red Vienna’s heritage in terms of social housing empowers the city to steer transformative change. The social-democrat priority on housing and its acknowledgement as a basic human right has

persisted through today - housing policies nevertheless undergoing strong integration into national housing policies. Over the years, a well-directed acquisition strategy was led which meant continuous purchase of properties with development potential. By using active land banking and zoning, the city is able to guarantee low housing costs through maintaining affordability of building plots and housing subsidies, and can ensure cooperation with sustainable urban development. This translates into the promotion of integrated services and smart buildings, as well as the possibility of renovation towards energy efficiency.

II. Possible articulation of practices around a new narrative?

Through the lens of sustainable social policies we saw that Vienna’s practices had shifted towards a “green” trajectory. If a shift in practices is observable, as for instance the focus on walkability and pedestrianisation, and more generally on streets as a place for life, the question of shifts in narrative is more complicated. The word “Green Vienna” is almost absent from municipal communication campaigns and it is not used by ecologist political parties. The city prefers to define its model as a guide of good practices focused on specific elements like housing, low-carbon mobility, biodiversity and green spaces or energy. There is no political articulation

..... 3.3 The narrative of Red Vienna : a hurdle for an ambitious ecological transition plan ?

between those measures except vague concepts like sustainability or resilience. On the contrary of a traditional narrative like Red Vienna based on the Austro-Marxist theory, the current development model of Vienna is based on “techno-managerial” solutions (Mocca and al., 2019). It could be qualified as post-politics in the sense that it presents itself outside political debates, it claims to be objective and based on expert knowledge. It is the result of public management of the previous decades where the city had to face important challenges on demographics, housing and job opportunities. For decades, the economic development of the city was more important than ecological transformations. For instance, the city favoured urban spreading and the creation of new neighbourhoods ex-nihilo to stimulate the real estate market which have dramatic impacts on biodiversity. This profound articulation with the private sector to face urban issues is visible in the recent adoption of the Smart City Framework.

In Vienna, the Smart City Framework is the core action plan that gathers all city policies going from Climate Protection Programs, Urban Development Plans to economic strategies like Innovative Vienna. The smart city model is central in Vienna’s evolution toward sustainability and could be considered as the main narrative around a greener Vienna. It shows a conception of ecological transitions based on innovation,

economic growth and collaboration between public and private actors (Fernandez-Anez and al., 2017). The city is seen as a coordinator and an implementer of new norms, it ensures the articulation between innovation and production forces. The narrative around the Smart City is interesting because it is a non-narrative. By presenting an “apolitical” decision-making, the city goes against the idea of creating a vision around ecological transitions, and puts in practice its ecological motivation through the concrete shaping of the city. Vienna bases its transformative approach on the knowledge, the capacity and the will of each actor to engage with climate adaptation. This strategy seems to be successful if we look at the level of international recognition. However, claiming to govern the ecological transitions with an apolitical process implies few paradoxes.

The first one being the dependence on economic growth and innovation. Increasing activity means increasing needs for energy, for food, for natural resources, and for housing or transport; needs that are in contradiction with the shift towards a low-carbon economy. The faith in technology to reduce greenhouse gas emissions while producing more is a recurrent criticism addressed to techno-managerial approaches. Another and maybe more important issue is that by delegating decision-making to experts and administrations, the city of Vienna fails to engage its citizens in

the process. A study on agricultural spaces (Kumnig, 2017) explains well the constant recomposition and restructuration of civil engagement in Vienna. Using the example of the Donaufeld, a zone where agricultural lands were to be transformed into residential areas, the author highlights the neoliberal organisational barriers to citizen engagement in the projects. One of the main criticisms is that consultations are non-binding, and that the propositions made are not integrated in the projects. Most participation is kept outside the institutional framework and citizens are only consulted on details of the projects. Therefore, the constitution of Vienna around a transformative narrative seems almost impossible. The smart city framing is not only supposedly apolitical but it also fails to mobilise and incorporate citizens. Vienna has a clear strategy on climate change but it is not constituted into a narrative, or at least this narrative is not independent, it is integrated into the larger narrative of Smart Cities.

III. Aspern, a smart district conceived to answer the social and environmental needs of the city

As mentioned above, the city has long promoted urban sprawl and the creation of new neighbourhoods from scratch to stimulate the housing market. This has resulted in the creation of thousands of housing units in the suburbs, with a poor transport system

..... 3.3 The narrative of Red Vienna : a hurdle for an ambitious ecological transition plan ?

to the city, poor urban design quality and a car-centred approach, far from promoting ecological principles. All these past mistakes were kept in mind during the creation of the Aspern district, in line with the Smart City framework. Aspern “Seestadt ” is one of Europe’s largest urban development projects, located in Vienna fast-growing 22nd district in the north-east of the city. Branded as an example of a suburban smart city created from scratch, with a major emphasis on easy commutes (the metro was effective even before housing was ready-to-use), the district is ready to host 25 000 people and, eventually, thousands of workplaces. The narrative of ecological transition is omnipresent in the construction of the city, and refers to a certain idea of nature reflected in the symbolic assets: walls of wood and vegetation, the presence of compost, but over all the construction of a lake in the heart of the city, allowing the city to be branded as a “water city”. Biodiversity was thus created in the same time as the buildings, and pre-existing biodiversity wasn’t integrated. The streets of the city remain otherwise particularly mineral, and the construction materials of the buildings, for example, do not particularly correspond to circular logics, which leads to question the ecological motives behind the narrative. Green and red narratives are mixed in this project, with the new smart city hosting a number of social and city-owned housing units. The location and size of the housing ensures social distinction. The

idea of the green city, (or of the “blue” city, to be more accurate), takes a central place in selling this newly built city, and legitimizing the huge amount of soil artificialization it required, making it attractive and satisfying for investors and developers.

IV. Limits to a “from Red to Green Vienna” narrative

Throughout this study we have pointed at several constraints around the emergence of a new political narrative for the ecological transitions. By structuring its approach on techno-managerial solutions (Mocca and al., 2019), Vienna’s solutions to climate change lack cohesion between policy areas and integration of the civil society. Urban sprawling is one of the issues on which these flaws are visible. The high distance between homes and workplaces creates an important need for transportation and maintains dependence on cars. This dependency is then aggravated by other factors like the disconnection between the inner city and its peripheral areas in public transport, car-oriented housing quarters or the lack of shops at ground level which encourages the dependence on big stores. As we have seen with the example of Aspern, Vienna addresses these issues. However, the city uses a problem-solution approach, which leads to siloed decision-making and maintains integration and participation flaws. For today’s governance, the Red Vienna heritage

“ It was the urban active aspect of the architecture of Red Vienna that reclaimed private space in the city for public use, and that reconfigured the spaces of everyday life in ways that gave agency to their users, and granted them (to paraphrase David Harvey) the right to change themselves by changing the city. ”

Eve Blau, 2016

is problematic in the sense that it was focused mainly on the production of housing units, whereas climate change questions the needs for production and calls for mainstreamed plans. On the issue of housing, the key challenge is to focus on the existing stock and make it even more energy efficient, rather than building new smart neighbourhoods. However, it does not mean that Red Vienna could not help creating a vision around Green Vienna. For example, the Austro-Marxist ideas of shared facilities and community-based approach could reinspire architects to imagine ecological buildings

Conclusion

To conclude, the main obstacle today around the creation of a Green Vienna model is the political will to articulate all initiatives around a federating vision for the city. This situation is due to decades of neoliberal management and the choice of the smart city approach to govern the ecological transitions. According to the ex vice-mayor Vassilakou, the lack of political ambition to achieve the net zero carbon emission goal is even the most important issue for the future of the city. Therefore, the possibility of such a narrative is hypothetical, but the structural issues of integration and inclusion in Vienna's response to climate change remains.

..... 3.3 The narrative of Red Vienna : a hurdle for an ambitious ecological transition plan ?

References

Municipal politics: “Red Vienna” - a success story.
<https://www.wien.gv.at/english/history/commemoration/housing.html>

Friesenecker M., Kazepov Y., Mocca E. Greening Vienna. The Multi-Level Interplay of Urban Environmental Policy-Making. *Sustainability* 2020, 12, 1577.
<https://www.mdpi.com/2071-1050/12/4/1577/pdf>

Friesenecker M., Riederer B. and Cucca R. Environmental quality for everyone? Socio-structural inequalities in mobility, access to green spaces and air quality

Lebensministerium. The Austrian Strategy for adaptation to climate change. 2013
<https://www4.unfccc.int/sites/NAPC/Documents%20NAP/The%20Austrian%20Strategy%20for%20Adaptation%20to%20Climate%20Change.pdf>

City of Vienna. Initiative “Adapting to Climate Change”
<https://www.wien.gv.at/english/environment/klip/adapting-climate-change.html>

Essl I. and Mauerhofer V. 2018.

Opportunities for mutual implementation of nature conservation and climate change policies: A multilevel case study based on local stakeholders. *Journal of Cleaner Production* 183. pp 898-907.

Damyhanovic D., Reinwald F. and Toth A. 2019. Planning and implementation of green infrastructures in Austrian cities. University of Vienna for Natural Resources and Life Sciences.
https://www.researchgate.net/publication/335000113_Planning_and_Implementation_of_Green_Infrastructure_in_Austrian_Cities

Astleithner F. and Hamedinger A. 2003. Urban sustainability as a new form of governance: obstacles and potentials in the case of Vienna. *Innovation* 16, 1.

Kumnig S. 2017. Between green image production, participatory politics and growth: urban agriculture and gardens in the context of neoliberal development in Vienna. *ACME: An international journal for critical geographies* 16, 2. pp 232-248.

Culture and Politics in Red Vienna: Introduction, JUDITH BENISTON, *Austrian Studies* Vol. 14, Culture and Politics in Red Vienna (2006), pp. 1-19 (19 pages)

Blau, E. 1999 The architecture of red

Vienna, 1919-1934. Mit Press.



CONCLUSION



Conclusion

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After two semesters almost completely online, this study trip was an opportunity for GETEC students to not only better understand the dynamics at stake in Vienna, but also to feel as belonging to a group sharing the same interests for urban ecological transitions outside the limits of the Parisian capital, while exploring the European dimension of the master's degree. We had the chance to put into perspective, thanks to visits and exchanges with key interlocutors, our theoretical understanding of the city with its current reality. Often studied as an example, in terms of social housing and decentralized governance for instance, the city of Vienna is full of contradictions and challenges that we were given the opportunity to delve into. Following the lines of our initial research question, we tried to identify how the city of Vienna has managed (or not) to combine its social heritage with calls for ambitious environmental policies, in order to ensure bold but fair ecological transitions for its citizens.

In some sectors, both objectives seem to intertwine and create positive synergies. For instance, the transportation system in Vienna is exemplary and manages to achieve climate

change goals while maintaining efficiency and accessibility targets. On another note, the governance capacities of Vienna and its political traditions allowed the preservation of the city's natural heritage, mostly natural parks around the urban areas, guaranteeing access to leisure areas for all citizens. Also in the housing sector, enhanced energy efficiency through renovation and the continuation of social mixity and affordability objectives in municipal housing stand out positively. Another example would be increasing citizen participation which represents a further promising approach to connect red and green aspirations in the city.

However, other fields display more contrasted results and let us believe that environmental and social issues are not always addressed altogether. For instance, climate adaptation is a very recent topic on the municipal agenda, despite the vulnerability of Vienna, and Austria more generally, to climate change. If the Danube River is well managed and flood risk assessed, heat wave vulnerability has only been very recently geographically assessed. Biodiversity challenges are mostly understood in terms of preserved areas, a consequence of the wilderness approach to nature. As a result, the interrelationship between urban dwellers and biodiversity is to

be strengthened, in order to guarantee a green continuity between urban infrastructures and the surrounding protected green areas. In the field of waste management, challenges around high incineration probably hindering recycling rates (mostly plastic) are also to be tackled. Furthermore, the Vice-Mayor herself acknowledged the limited ambition of the general framework for Viennese climate policies, highlighting a certain lack of cohesion and integration. The Red Vienna narrative may come as a hurdle for ecological transitions, focusing the attention on housing units rather than on a holistic public policy approach.

Vienna also has to face larger challenges in the future. Some highlighted the expanding demographic pressure, as well as the widening inequalities in the city, supported by a universal approach to citizen participation. Furthermore, the Red Vienna narrative has to be seen in relative terms, given the increased integration of private actors in the municipal governance, notably through Public-Private Partnerships and the "Smart City" narratives. Nevertheless, Vienna is and remains a city that offers a high quality of life and social and environmental standards compared to others. To what extent the city is able to meet the challenges of the future in both areas will only be answered by time.



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