

Smart City Vienna

Thomas Madreiter, 18/03/2021



City of
Vienna



Photo: Johannes Zinner

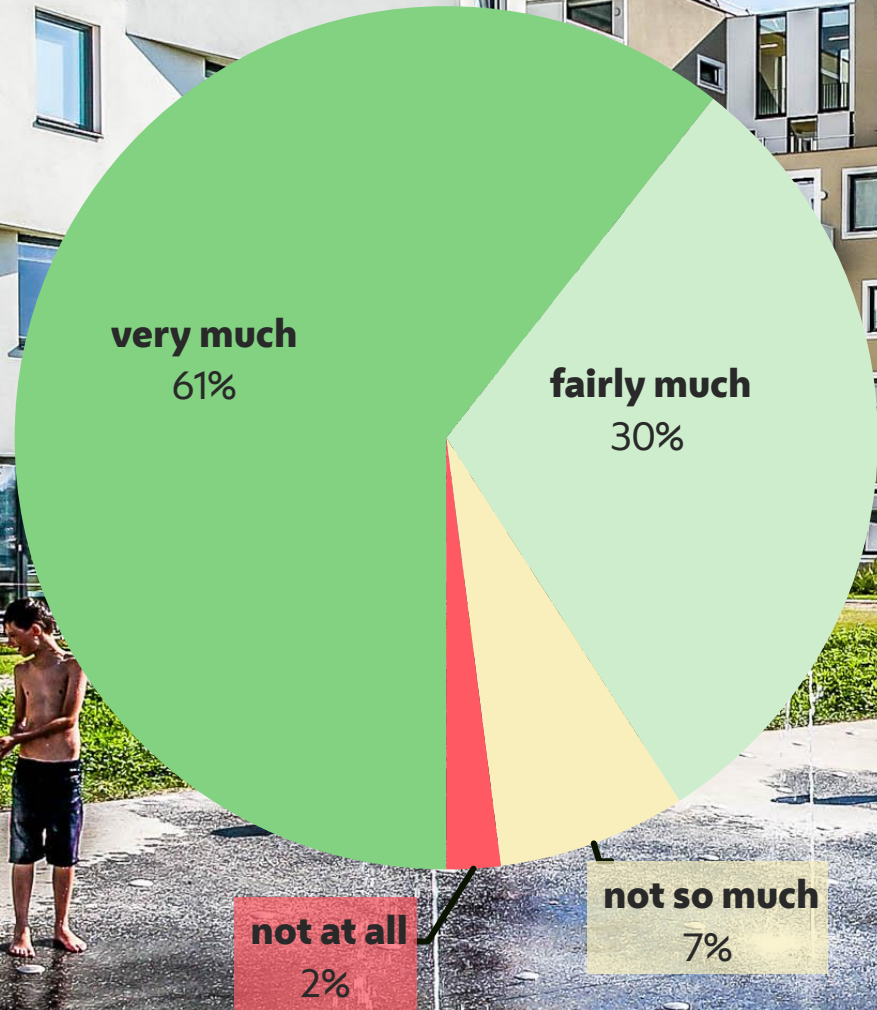
Agenda

- › Climate Change – the Challenge of our Times
- › Smart City Vienna – an Approach to a Solution
- › Adaptation to Climate Change: Get Prepared!
- › Conclusion

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"Do you enjoy living in Vienna?"



**City of
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Vienna Survey on Quality of Life (2018), n=8.450
Photo: Christian Fürthner

The Viennese are surprisingly open-minded towards city growth.

"The fact that Vienna is growing, I generally perceive as positive."

I totally agree

43%

I rather agree

32%

I do not agree at all

8%

I rather do not agree

17%



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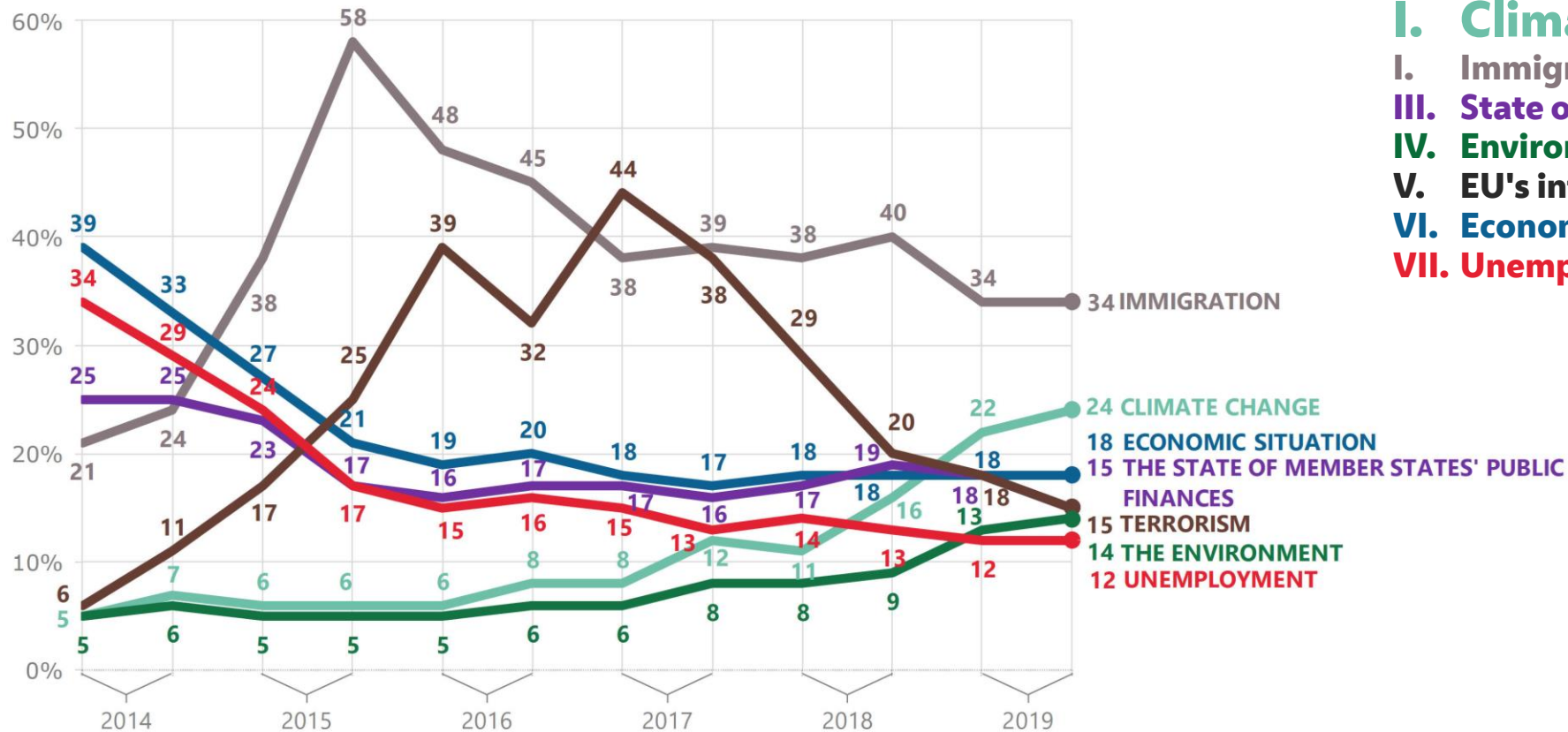
Vienna Survey on Quality of Life (2018), n=8.450

Photo: Daniel Hawelka

The Climate Crisis has arrived.

"What do you think are the two most important issues facing the EU/Austria at the moment?"

EU 2014-2019



Austria autumn 2019

I. Climate Change 27%

I. Immigration 27%

III. State of member states' public finances 22%

IV. Environment 18%

V. EU's influence in the world 18%

VI. Economic situation 16%

VII. Unemployment 12%

Will
COVID-19
change
priorities
permanently
?



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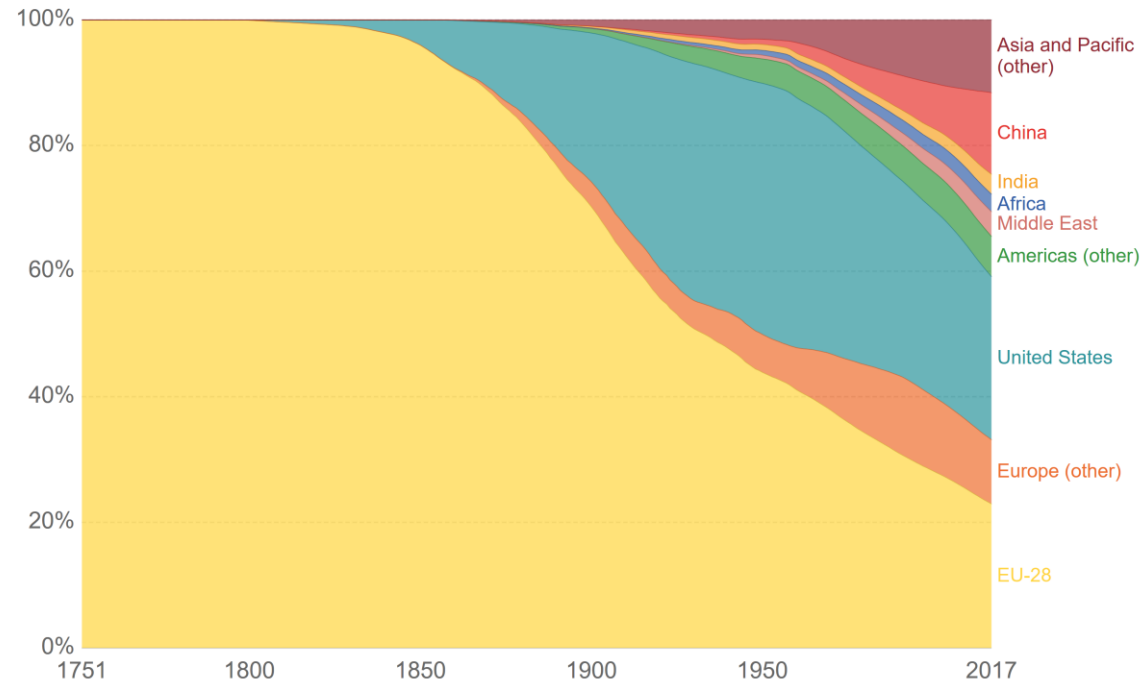
Source: Standard Eurobarometer 92 – Autumn 2019 "Public opinion in the European Union, First results" (und Annex)

Climate Justice

Why Europe and the US have to lead the way.

Cumulative CO₂ emissions by world region

Cumulative carbon dioxide (CO₂) emissions by region from the year 1751 onwards. Emissions are based on territorial emissions (production-based) and do not account for emissions embedded in trade.



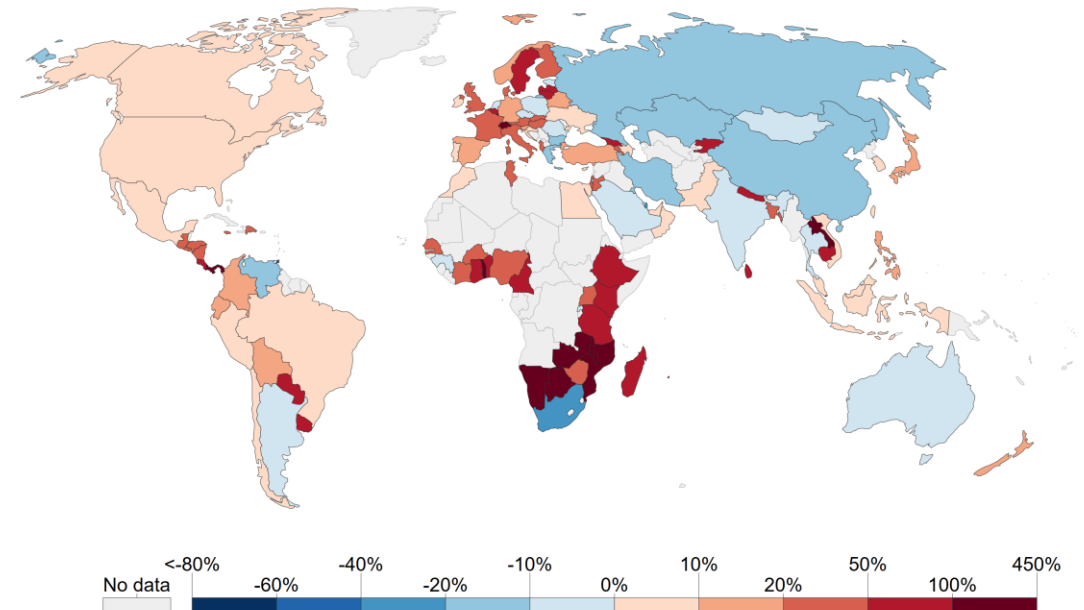
Source: OWID based on CDIAC & the Global Carbon Project (2018)

OurWorldInData.org/co2-and-other-greenhouse-gas-emissions • CC BY

Our World
in Data

CO₂ emissions embedded in trade, 2016

Share of carbon dioxide (CO₂) emissions embedded in trade, measured as emissions exported or imported as the percentage of domestic production emissions. Positive values (red) represent net importers of CO₂ (i.e. "20%" would mean a country imported emissions equivalent to 20% of its domestic emissions). Negative values (blue) represent net exporters of CO₂.



Source: Peters et al. (2012 updated); Global Carbon Project (2018)

OurWorldInData.org/co2-and-other-greenhouse-gas-emissions/ • CC BY

Our World
in Data

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Detaching Urban Growth from Resource Consumption



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Mölker Bastei (Wien 1)

Photo: Gerd Götzenbrucker

**For many Smart City stands for...
...a high-tech gadget wonderland as an end in itself.**



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Photo: Wien Tourismus

Adaptation: Executive Office, Construction and Technology

**From Vienna's perspective a Smart City can be...
...a traditional city watching out for future generations.**



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Mölker Bastei (Wien 1)

Photo: Gerd Götzenbrucker

From Vienna's perspective a Smart City can be...
...a city making room for private initiatives.



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Grätzloase ("neighbourhood oasis") **"Kraft-Tank-Stelle"**, Lerchenfelder Straße (Wien 7)

Photo: @fieldvienna

From Vienna's perspective a Smart City can be...
...a city of solidarity and collective experiences.



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Photo: Daniel Dutowski

From Vienna's perspective a Smart City can be...
...an open city of equal opportunity.



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Yppenplatz (Wien 16)
Photo: Christian Fürthner

From Vienna's perspective a Smart City can be...
...a digital city for everybody.



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"I like IT" action day 2014 organised by the DigitalCity.Wien-initiative, Stephansplatz (Wien 1)
Photo: David Bohmann

From Vienna's perspective a Smart City can be...
...a sustainable and green city.



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Alte Donau (Wien 22)

Photo: Urban Innovation Vienna

From Vienna's perspective a Smart City can be...
...a city making affected residents to participating citizens.



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Excibition of plans for Vienna's new bus-terminal, Messe Wien (Wien 2), June 2019
Photo: Christian Fürthner

From Vienna's perspective a Smart City can be...
...a city facing the climate crisis.



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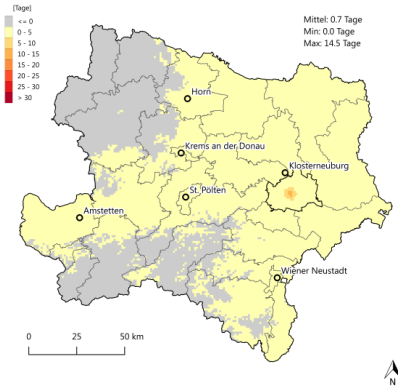
Annual mean temperatures in Vienna starting in 1775

Visualization: Hawkins, University of Reading (<https://showyourstripes.info/>); Data: ZAMG

From Vienna's perspective a Smart City can be... ...a city preparing itself for inevitable climate change.

number of **tropical nights** ($\geq 20^{\circ}\text{C}$)

at present
(climate '81-2010)

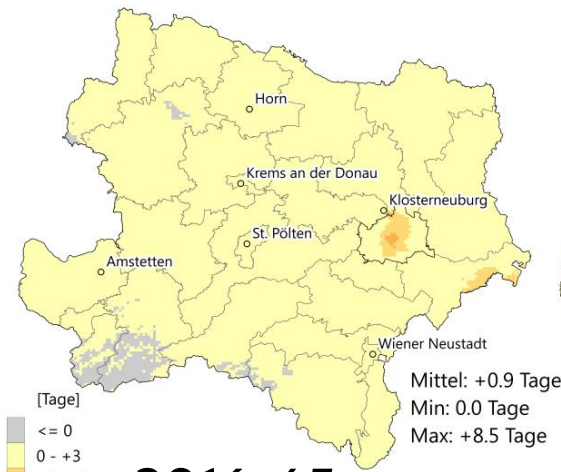


Lower Austria+Vienna
mean: 0,7 nights
maximum: 14,5 nights
(↪ central Vienna)

in the future
(increase)

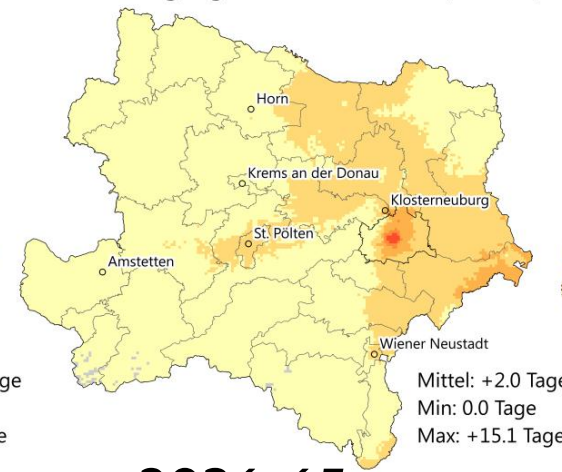
...assuming
great efforts
in climate
protection

...assuming
low efforts



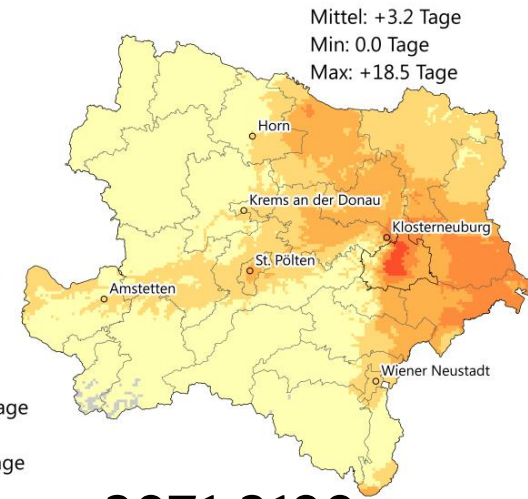
2016-45

Mittel: +0.9 Tage
Min: 0.0 Tage
Max: +8.5 Tage



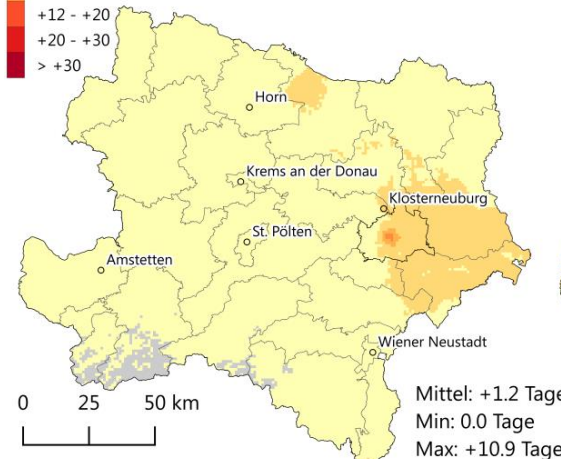
2036-65

Mittel: +2.0 Tage
Min: 0.0 Tage
Max: +15.1 Tage



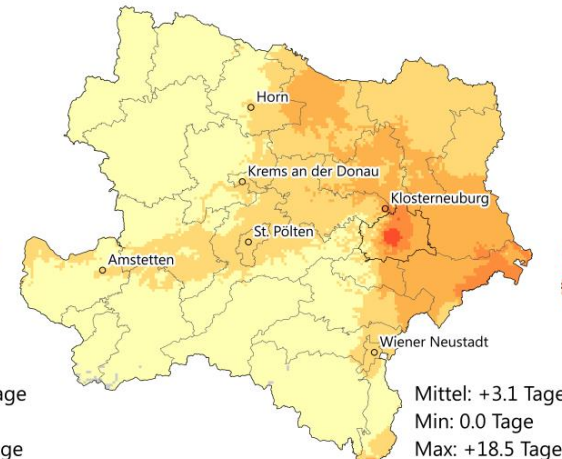
2071-2100

Mittel: +3.2 Tage
Min: 0.0 Tage
Max: +18.5 Tage



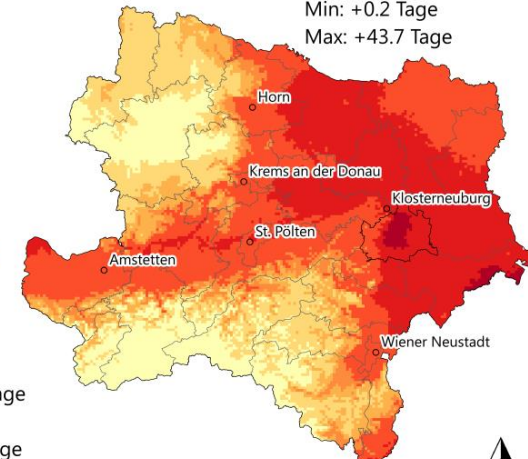
2016-2045

Mittel: +1.2 Tage
Min: 0.0 Tage
Max: +10.9 Tage



2036-2065

Mittel: +3.1 Tage
Min: 0.0 Tage
Max: +18.5 Tage



2071-2100

Mittel: +13.2 Tage
Min: +0.2 Tage
Max: +43.7 Tage



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Clima-Map (www.clima-map.com)

Calculations: University of Natural Resources and Life Sciences Vienna, Design: awdesign.at

From Vienna's perspective a Smart City can be...
...a city looking ahead.



<https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008552.pdf>

The Essence of Smart City Vienna

Three interwoven dimensions.

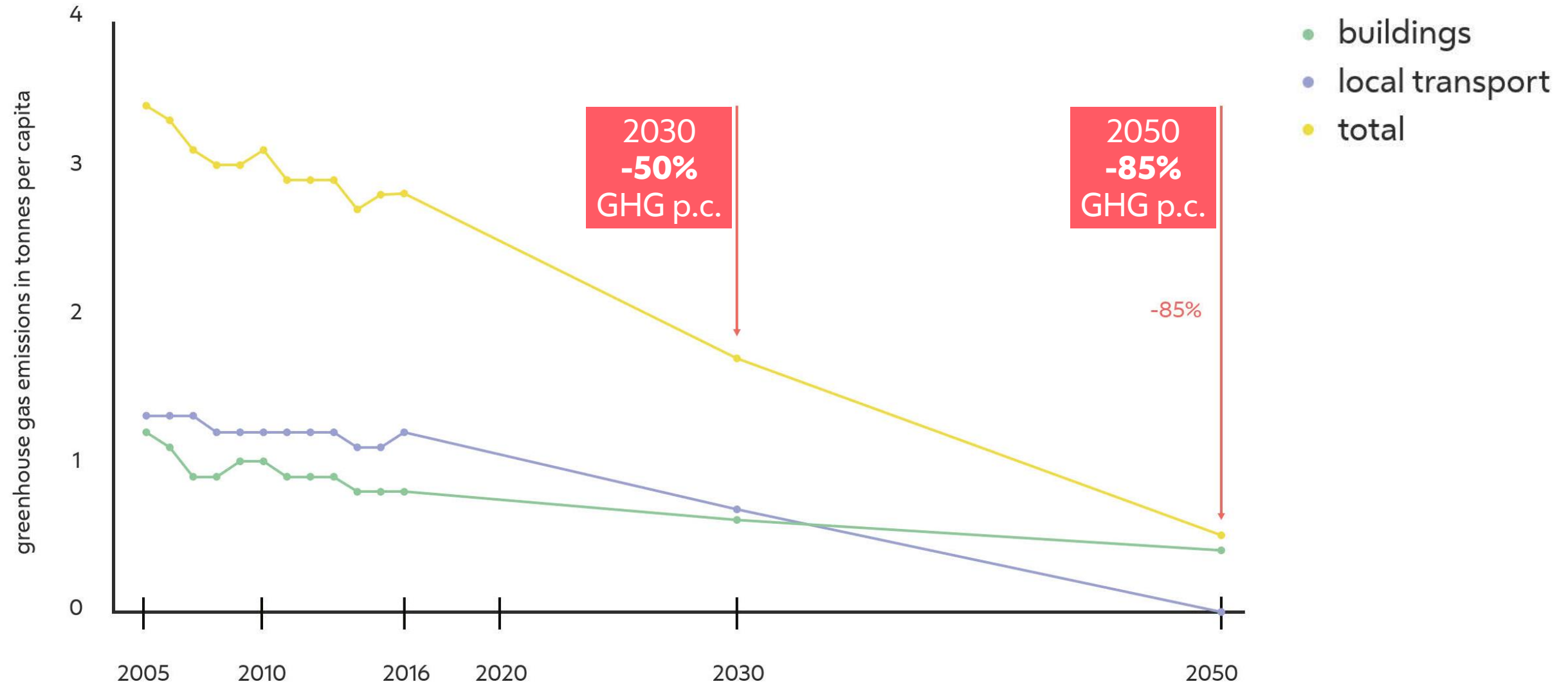
Quality of Life

Resources

Innovation

Smart City Wien Framework Strategy 2019-2050

What needs to be done: reducing greenhouse gas emissions drastically

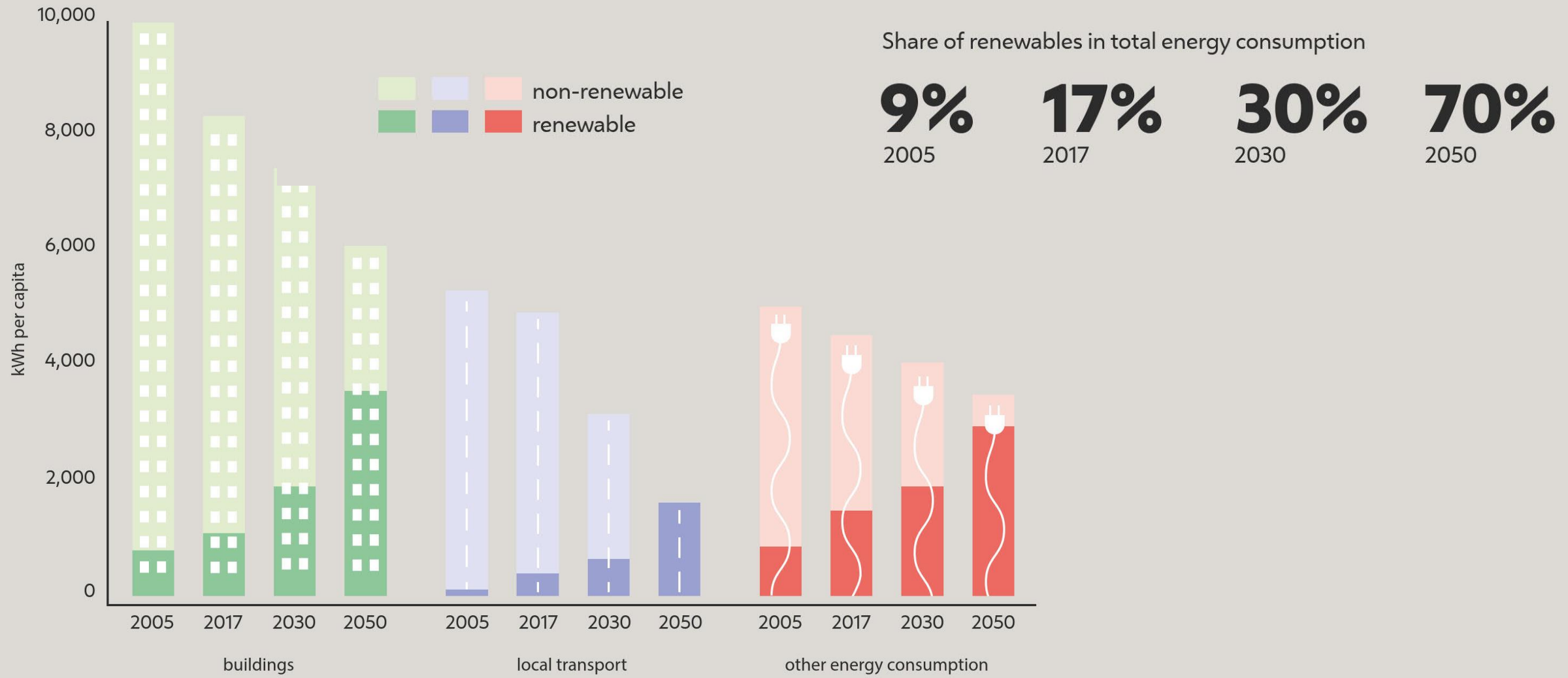


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<https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008552.pdf>

Smart City Wien Framework Strategy 2019-2050

How it can be done: lowering energy consumption while boosting the share of renewables

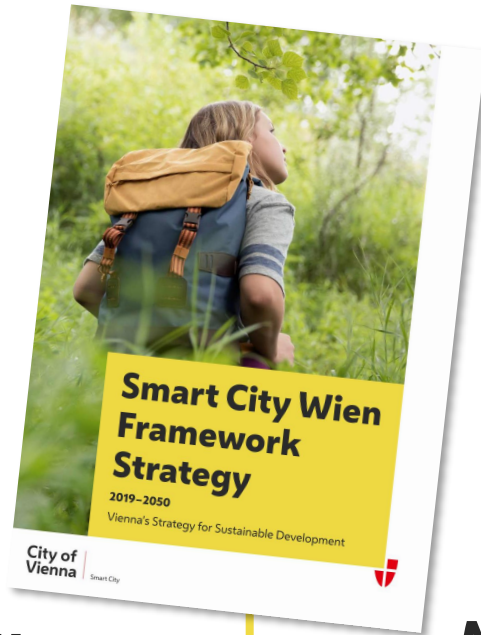


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<https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008552.pdf>

Smart City Wien Framework Strategy 2019-2050

A holistic approach.



Energy

Mobility

Buildings

Digitalisation

Economics and Labour

**Water and Waste
Management**

Environment

Health

Social Inclusion

Education

Science and Research

Participation



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<https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008552.pdf>

Vienna Climate Council

Scientists and experts advise mayor and vice-mayor in climate-related issues



Advisory Board Science (eight scientists/experts from Austria and abroad)

+ **Sounding Board City:** city administration, delegates of government parties

+ **Sounding Board Society:** federal administration, NGOs, advocacy groups, delegates of opposition parties & citizens



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1st meeting of the Sound Board Society of the Vienna Climate Council on September 22, 2020
Photo: Christian Fürthner/UIV

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Adaptation to Climate Change & Climate Protection

Distinct topics with potential synergies.

Climate Protection

Measures to reduce greenhouse gas emissions



Adaptation to Climate Change

Measures to cope with inevitably climate change

Synergies

Measures contributing to both tasks



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Smart City Wien Rahmenstrategie 2019-2050 (draft)
Illustration: The Gentlemen Creatives

Adaptation to Climate Change

We need to start now: in architecture as well as urban planning



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Boutiquehotel Stadthalle (Wien 15)

Photo: Christian Fürthner

Adaptation to Climate Change

We need to start now: in architecture as well as urban planning



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Foto: Christian Fürthner

Adaptation to Climate Change

Increased importance of public spaces for the well-being of citizens



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Mariahilfer Straße (Vienna 6/7) since 2015

Photo: Mobilitätsagentur/Christian Fürthner



Mariahilfer Straße (Vienna 6/7) until 2015

Photo: Mobilitätsagentur/Christian Fürthner

Adaptation to Climate Change

It is not easy to plant new trees in the city...

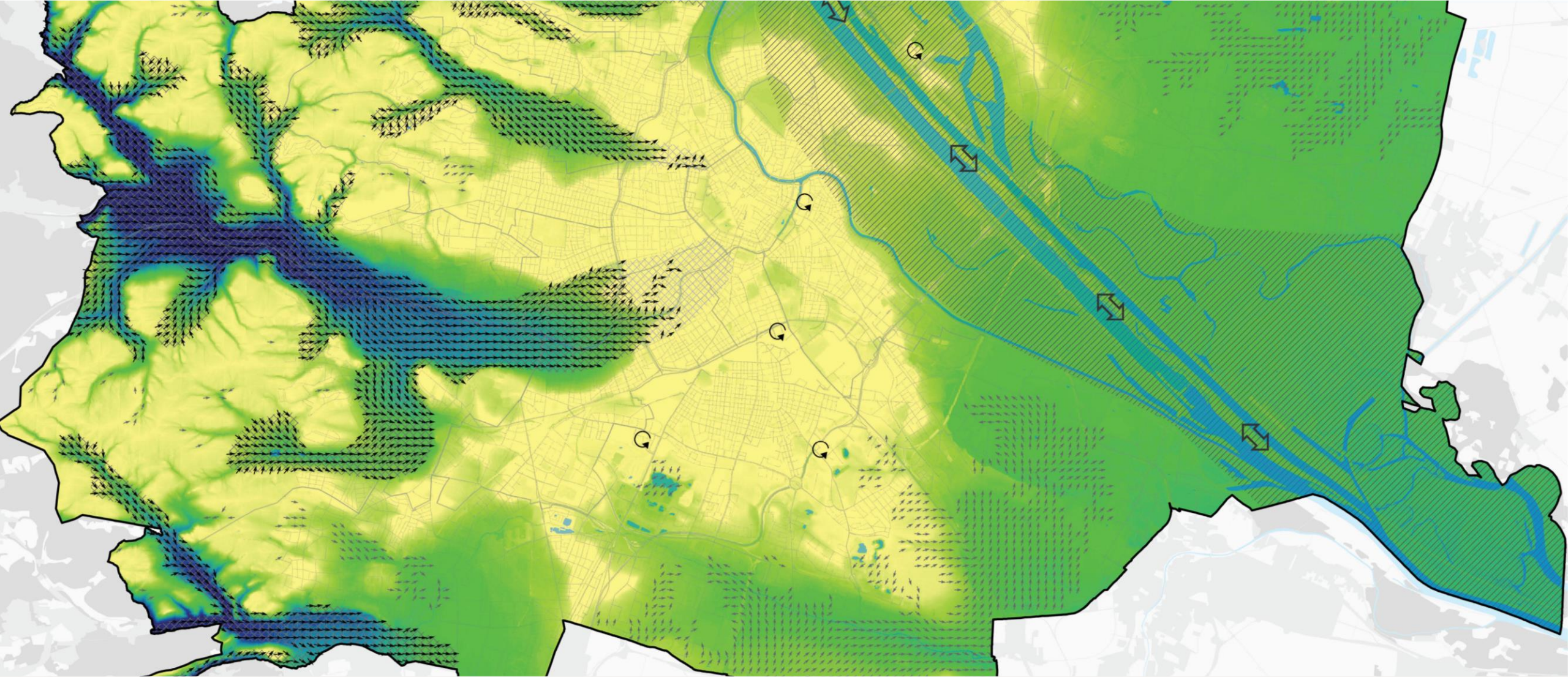


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"X-Ray" of Zollergasse (Wien 7) showing density of installations underground (#kommraus-festival, May 2019)
Photo: Christian Fürthner

Adaptation to Climate Change

Climatology as a basis for urban planning.



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Urban Climate Analysis Vienna: Cool Air at Night

Source: <https://www.wien.gv.at/stadtentwicklung/grundlagen/stadtforschung/stadtklimaanalyse.html>

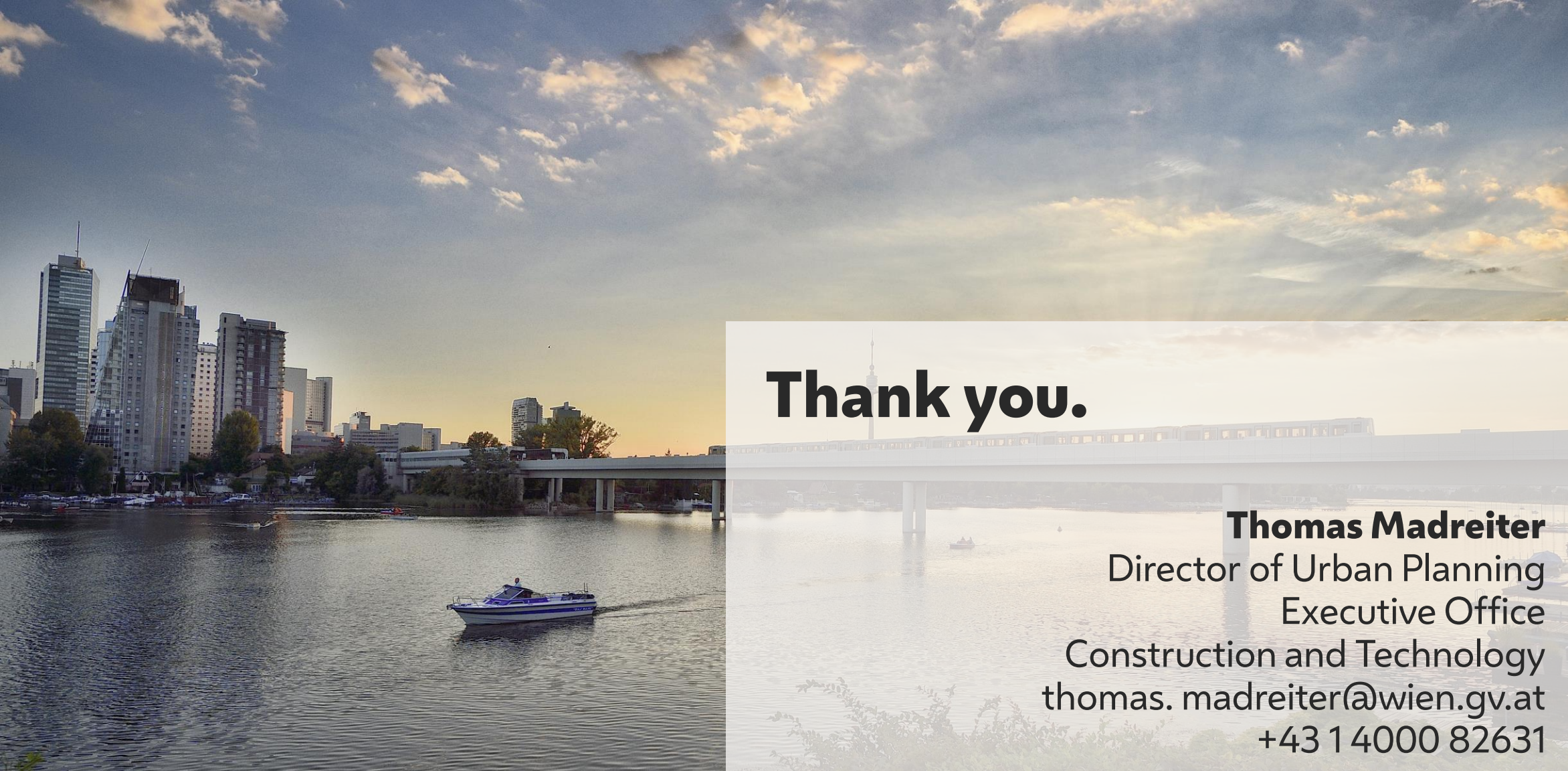


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Conclusion

- › The global **context is changing rapidly** for cities. Especially the **climate-crisis** is a severe threat.
- › Cities are not the problem though. **Cities are the solution.**
- › Vienna has been **redefining the Smart City** by putting **people and their needs front and center.**
- › Cities have to radically change how they interact and **cooperate with their citizens.**
- › **Social innovation is the key** towards necessary significant reductions of resource consumption.



Thank you.

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Photo: Johannes Zinner