

Phasing out fossil fuels in the city of Vienna – more than just a plan




Austria's leading energy provider

29 citizen solar
power plants 


We provide power, gas, heating and cooling to
2 million people

 **2.205**
employees and
54 apprentices

Austria's largest producer of solar power 

District heating for
460.000
households 

Climate neutral
by 2040 
Excellent
AA
-credit rating confirmed

Energy and
from
1 million tonnes
of waste
circular economy

 **Our power stations**
stabilise the grid

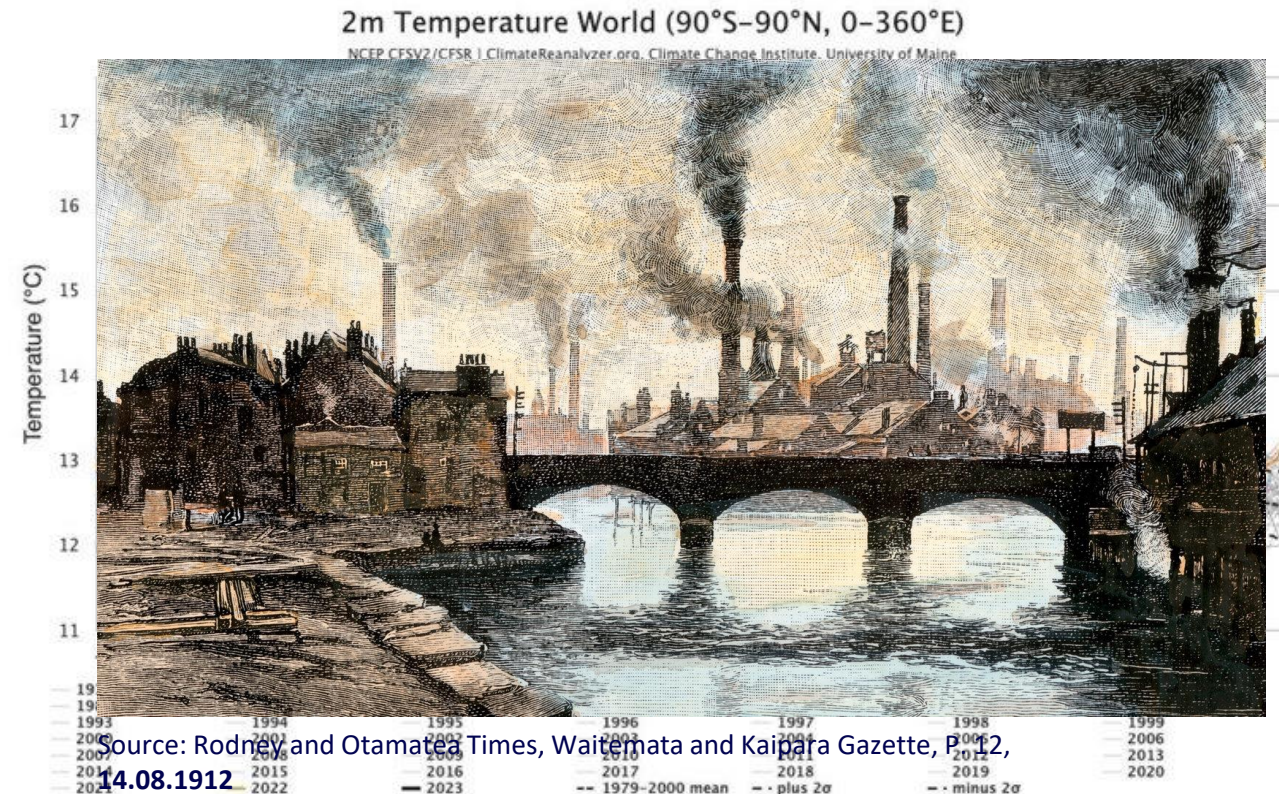
Every week, a new
photovoltaic plant
the size of a football field
goes online.

1.8 billion euros for
climate protection
by **2028**

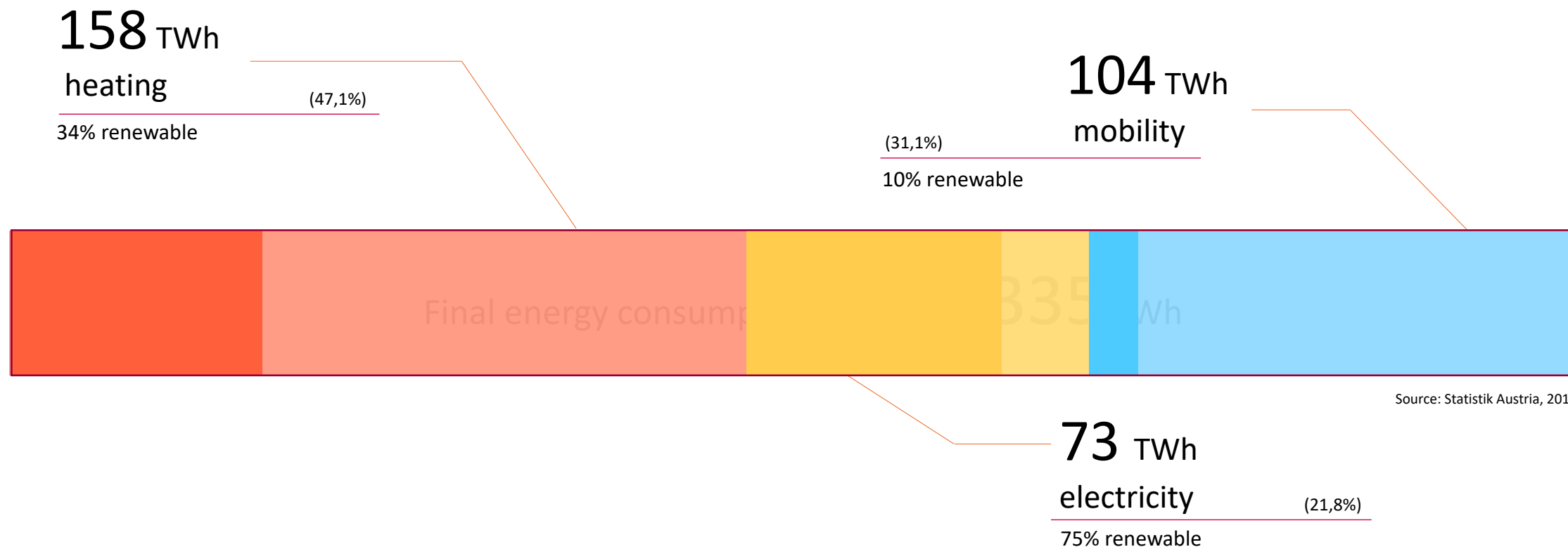
an electric charging station
every 400 metres

COAL CONSUMPTION AFFECT- ING CLIMATE.

The furnaces of the world are now burning about 2,000,000,000 tons of coal a year. When this is burned, uniting with oxygen, it adds about 7,000,000,000 tons of carbon dioxide to the atmosphere yearly. This tends to make the air a more effective blanket for the earth and to raise its temperature. The effect may be considerable in a few centuries.



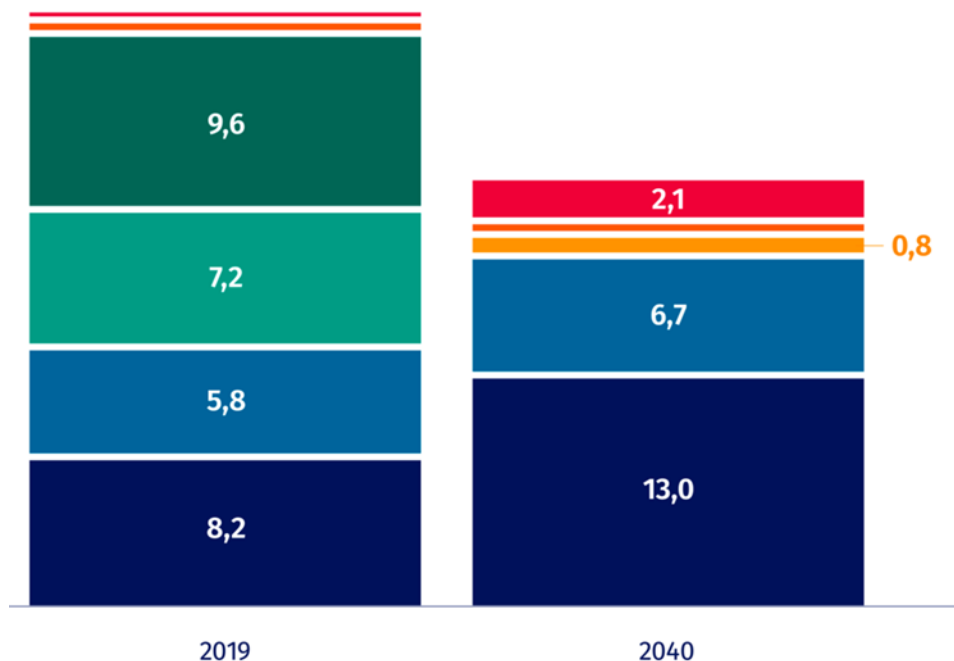
Total energy consumption in Austria



Energy transition = heating transition + electricity transition + mobility transition

Transformation of Vienna's energy demand

Total energy consumption in Vienna [TWh p.a.]



Source: Compass Lexecon, Wien Energie, 2021

Climate neutrality 2040

- Reduction in energy consumption
- Electricity demand will increase by 65%
- 56% of heating requirements covered by district heating



Ambient heat



Biomass



Hydrogen & Synfuels



Petroleum products (especially mobility)



Natural gas (especially for individual heating)



District heating

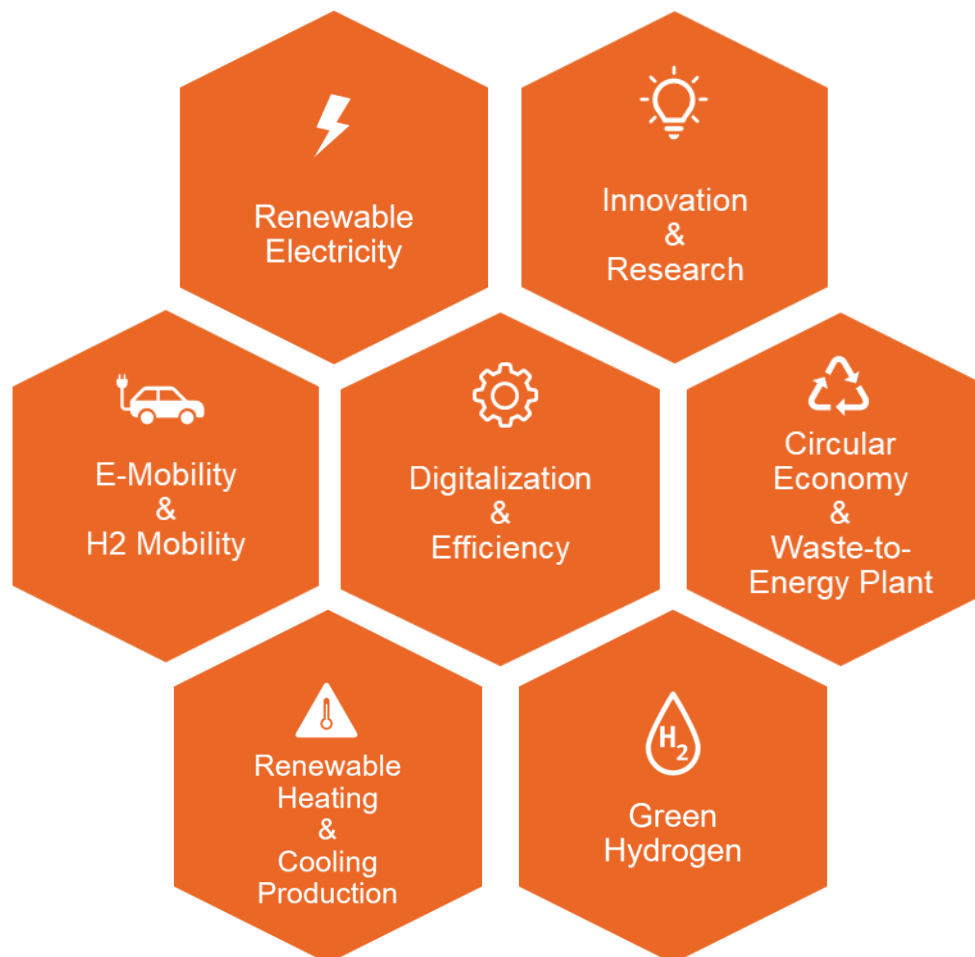


Electricity (various uses)

Building blocks for decarbonization

Climate neutrality 2040

- Mobility will be electrified
- Innovative solutions and new technologies are an essential building block
- Waste incineration plants will be equipped with carbon capture



Energy transition - renewable electricity

600 MW

of photovoltaic capacity
will be installed by 2030
- equivalent to solar
power for 300.000
households



Hybrid power plant

Commissioning one of
the Austria's largest
green hybrid plant in
Trumau



Hydropower plants

79 hydropower plants
generate 885 GWh of
electricity per year



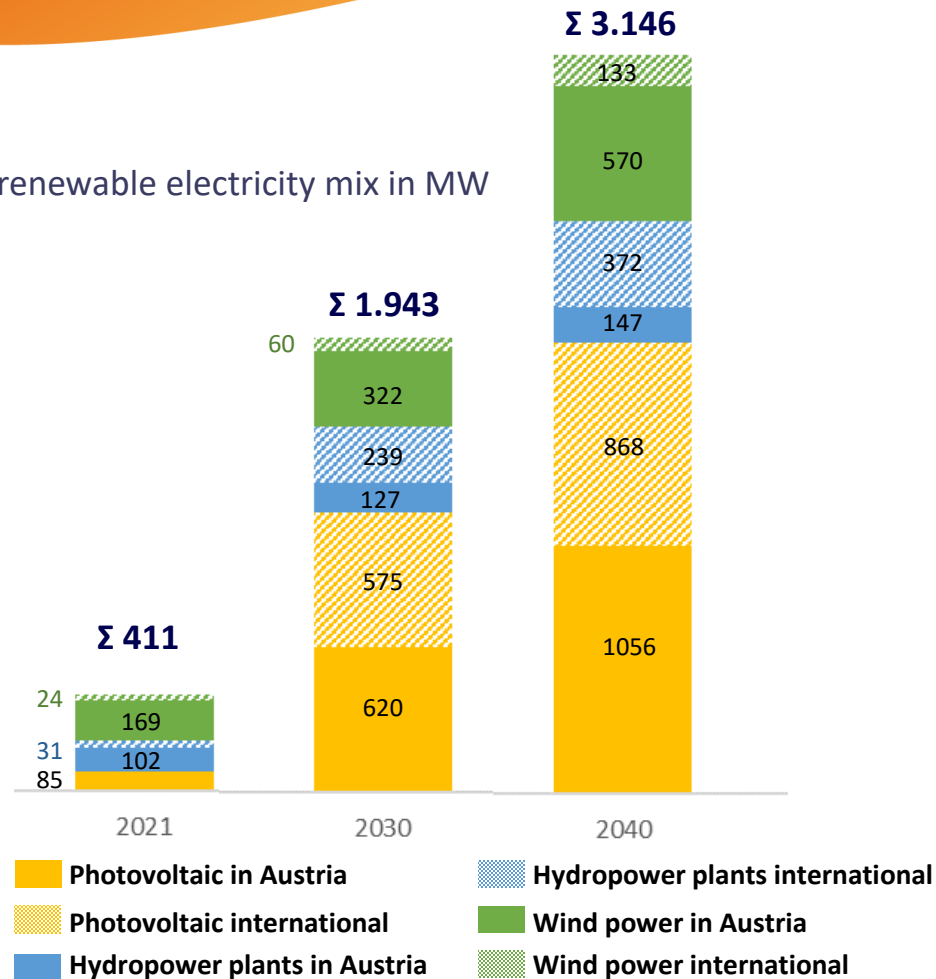
200 MW

wind power capacity
milestone achieved.

Wien Energie operates 92 wind
turbines across 18 wind parks

Renewable electricity production by WE

Projected renewable electricity mix in MW



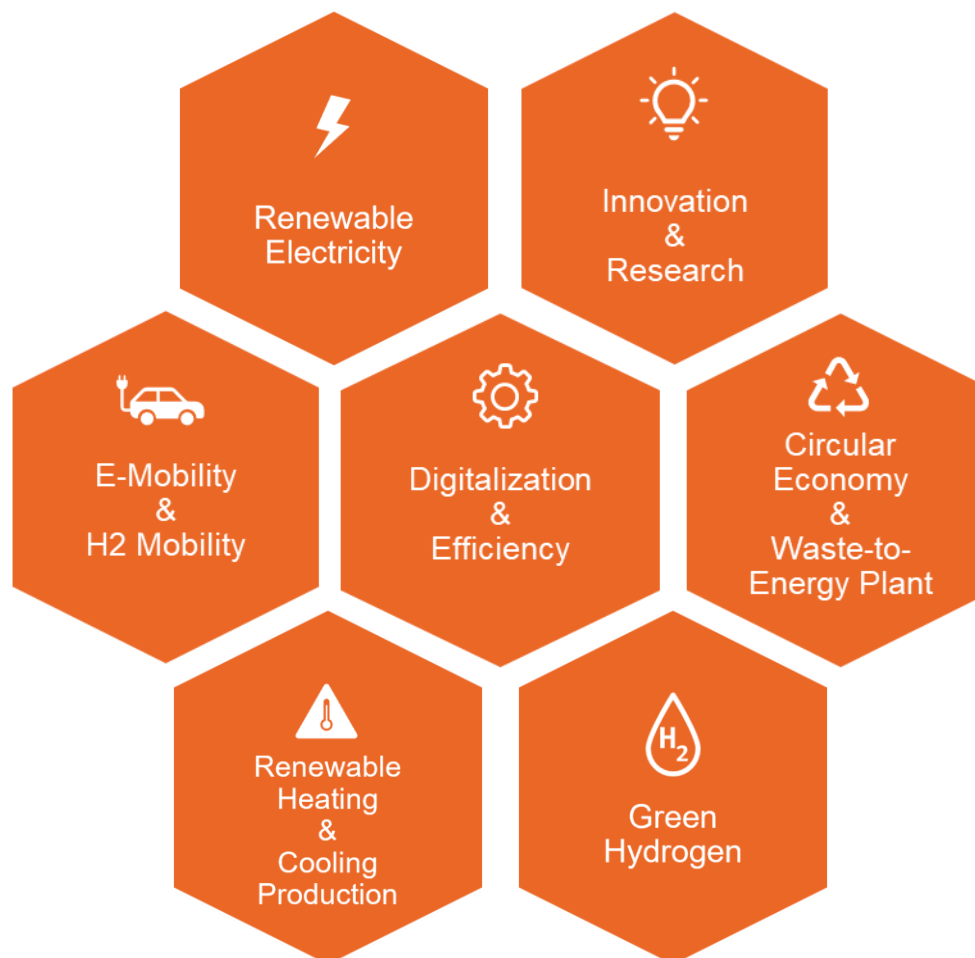
Electricity transition

- All technologies are equally important for the expansion plan in 2040
 - Wind significant in winter
 - Photovoltaics significant in summer
 - Hydropower plants throughout the year
- National & international renewable electricity production is crucial to meet Vienna's future electricity demand

Building blocks for decarbonization

Climate neutrality 2040

- Mobility will be electrified
- Innovative solutions and new technologies are an essential building block
- Waste incineration plants will be equipped with carbon capture



Energy transition – renewable heating

€ 500 m

for sustainable heating
projects and
circular economy by
2028



Deep geothermal energy

Sustainable utilization
of geothermal
potential in the
Vienna Basin



Large-scale heat pump

Heat supply through
the utilization of local
waste heat

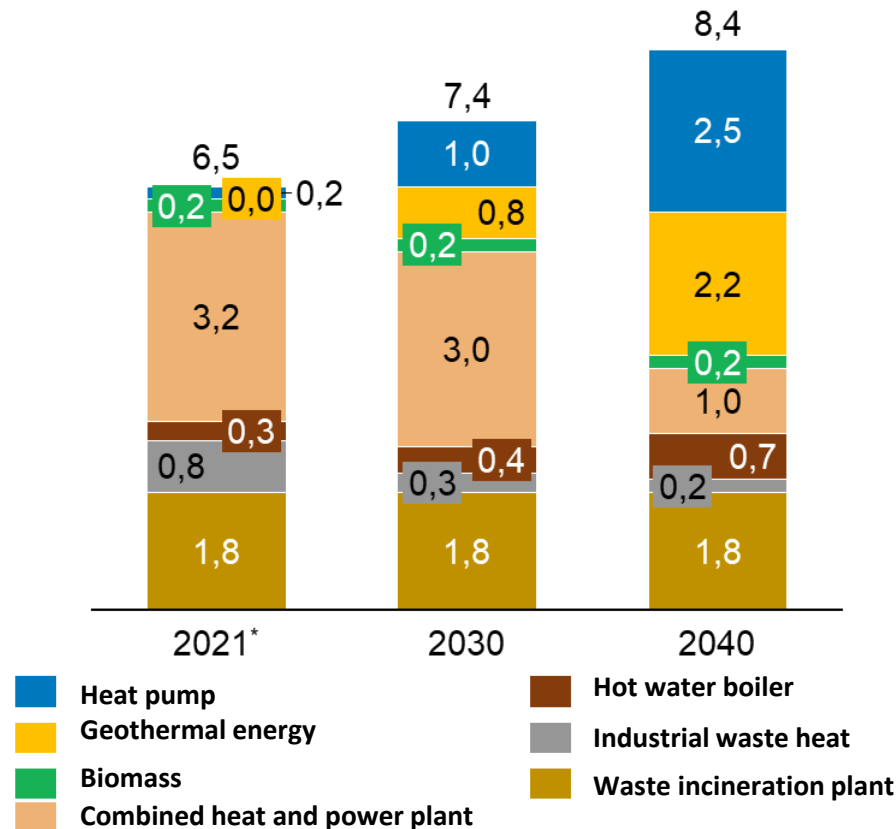


By 2025

the district cooling loop around
Vienna's central district will be
completed.

Decarbonization of district heating by 2040

Projected mix of heat supply TWh



Heating transition

- District heating plays a key role in the secure heat supply of the city of Vienna
- Geothermal energy and large-scale heat pumps will produce 55% of the district heating by 2040
- Green combined heat and power plants are necessary to ensure security of supply and to compensate for daily fluctuations

Diversification of heat sources

Technologies

ebswien Wastewater treatment plant

By 2027, large-scale heat pump EBS supplies 112.000 households



Seestadt

By 2027, the first deep geothermal plant will supply 20.000 households in Vienna.



Geothermal energy

Energy recycling UNO City

At UNO-City, waste heat of cooling units is utilized to provide heating for 2.400 households.

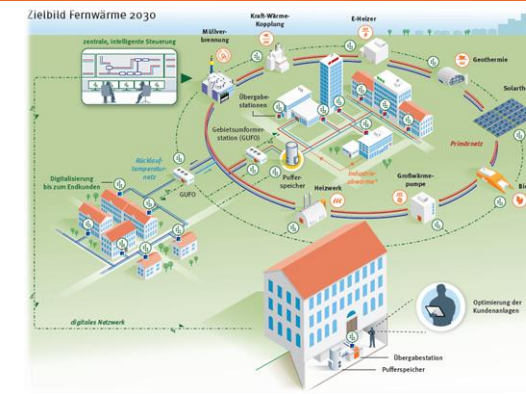


Wastewater

Waste heat

District heating

- Connects heat generators & heat consumers through an underground hot water network
- Covers approx. 40% of Vienna's heat demand
- 3rd largest district heating network in Europe
- Supplies 460.000 Viennese households and 8.000 business customers



Role model large-scale heat pump



Waste heat of water treatment plant

Another step towards the heat revolution!

- Utilization of wastewater heat from Vienna's central sewage treatment plant
- 56.000 households are supplied by 100% green renewable energy
- A European pioneer on this scale
- Green ecofriendly electricity directly from the hydroelectric power plant

Next steps

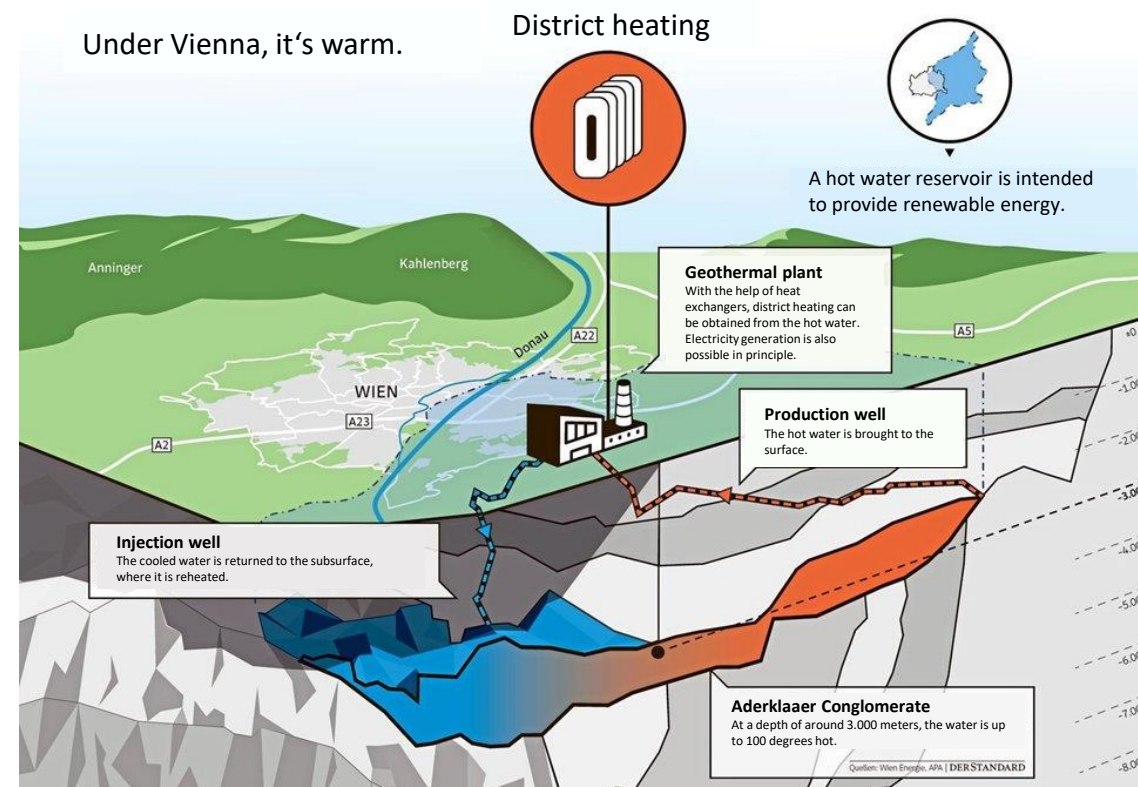
- Second expansion phase in preparation to supply a total of 112.00 households in 2027

Deep geothermal energy in Vienna

Benefits of geothermal energy

-  Locally available
-  24/7 available
-  Renewable energy
-  Low Footprint
-  Stable prices
-  Inexhaustible by human standards

120 MW of geothermal energy will be installed by **2030**, providing heating for the equivalent of **125.000 Viennese households!**



Step by step towards green heat

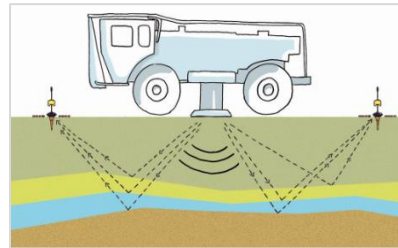


Essling TH1

Knowledge gained from geothermal drilling

GeoTief Wien

Start GeoTief
Planning for Exploration



2D Seismic

Pilot seismic survey in the eastern area of Vienna



3D Seismic

Large-scale seismic survey in the eastern area of Vienna



Evaluation

Development of the geological 3D model



Production Test

Thermal water reservoirs detected beneath Vienna

deeeep
Tiefengeothermie für Wien.

Ein Joint Venture von **OMV** und **WIEN ENERGIE**

Joint Venture

Wien Energie / OMV

2012

2016

2017

2018/19

2020

2021

2023

Pilot project „Hydros Seestadt“



From 2027 onwards

First supply of green heat from
3.000 m depths to Viennese
households (22 MW_{th})



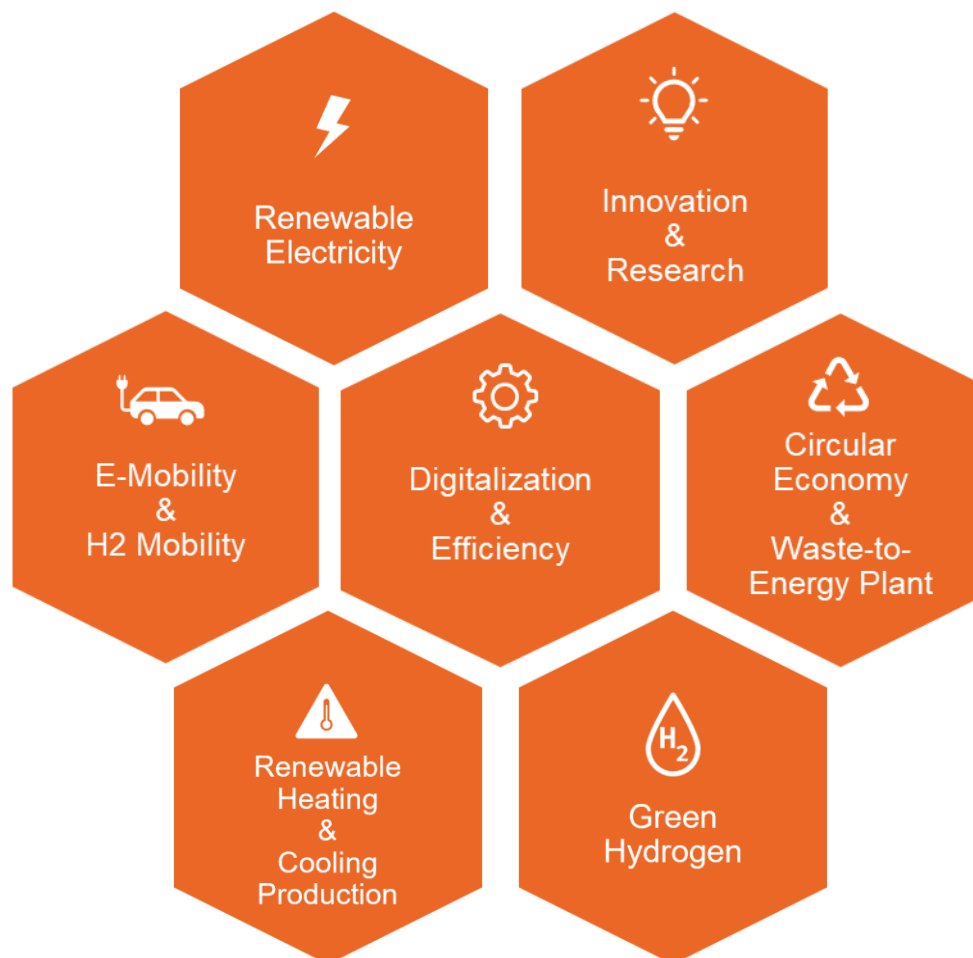
108 °C

1 geothermal doublet &
1 pilot well tapping into the
Aderklaa Conglomerate

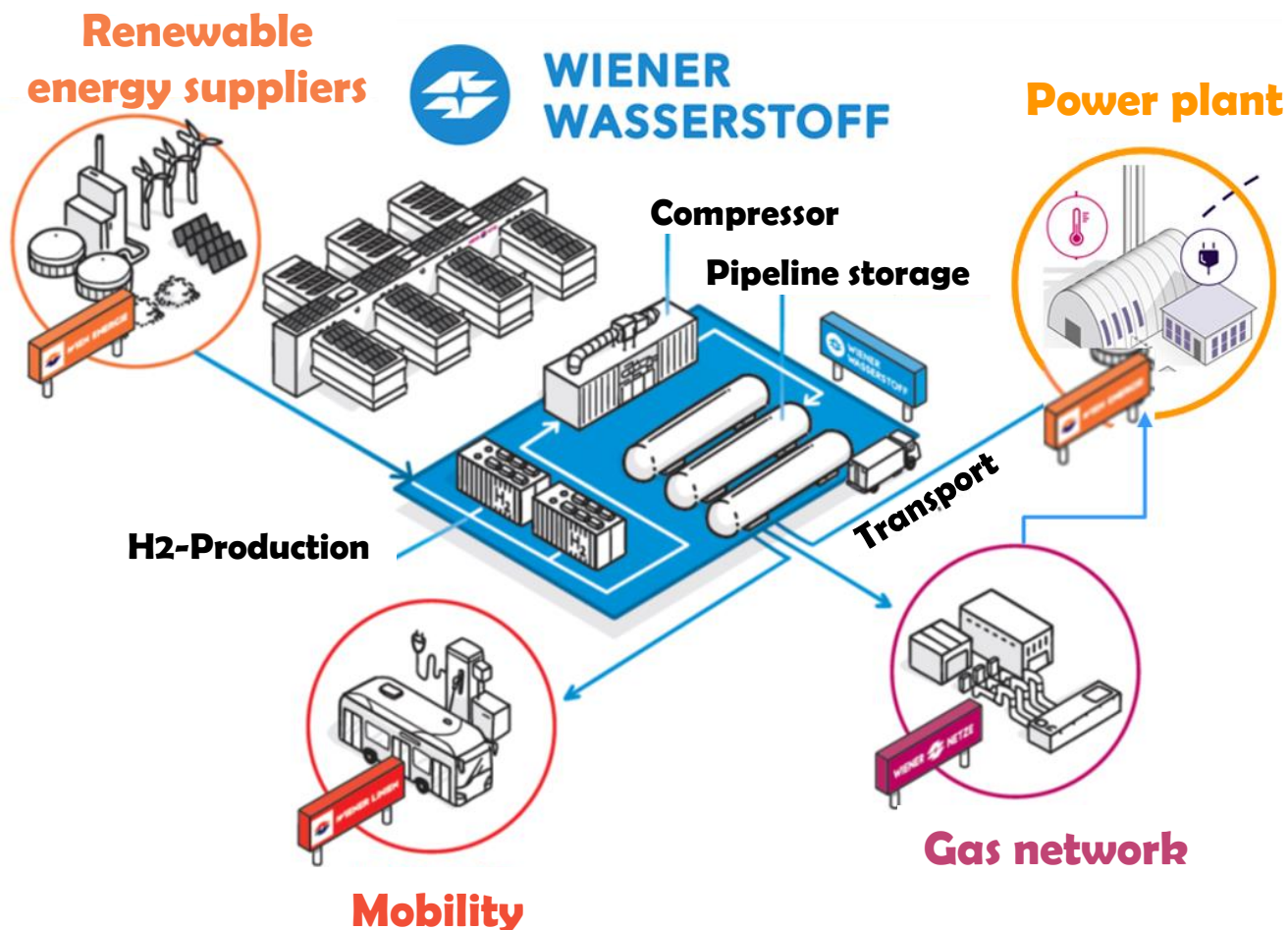


Climate neutrality 2040

- Mobility will be electrified
- Innovative solutions and new technologies are an essential building block
- Waste incineration plants will be equipped with carbon capture



Value chain renewable hydrogen



Green gas power plant



Gradual decarbonization to green power plants for a climate-neutral future

Hydrogen refuelling station



Collaborations with Wiener Linien and with external partners to refuel heavy-duty vehicles

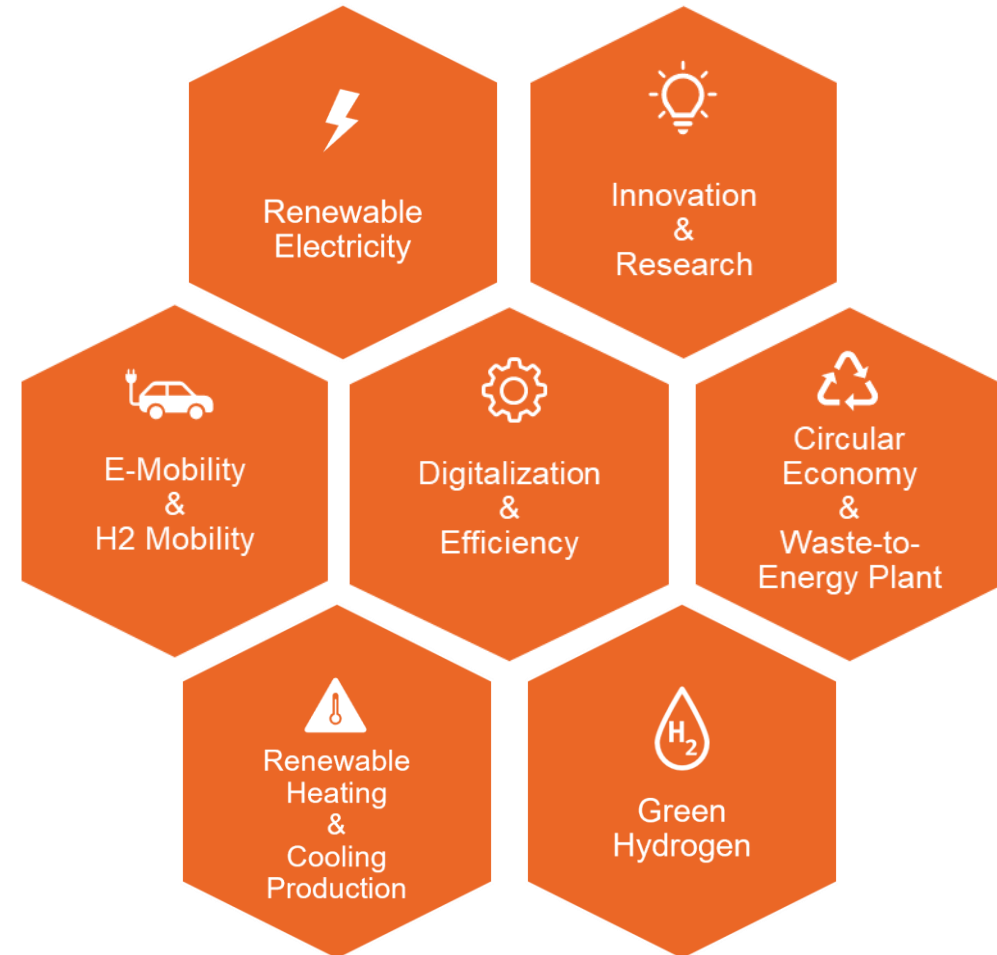
Green H2 ‚Made in Vienna‘



3 MW hydrogen electrolysis in Simmering

Conclusion

- Utilize new technologies & innovative solutions
- Form partnerships & leverage synergies
- Create a vision and act as a trailblazer





**Clean energy for the
most livable city in the world.**