CLIMATE ACTION PLAN OF THE CITY OF PRAGUE

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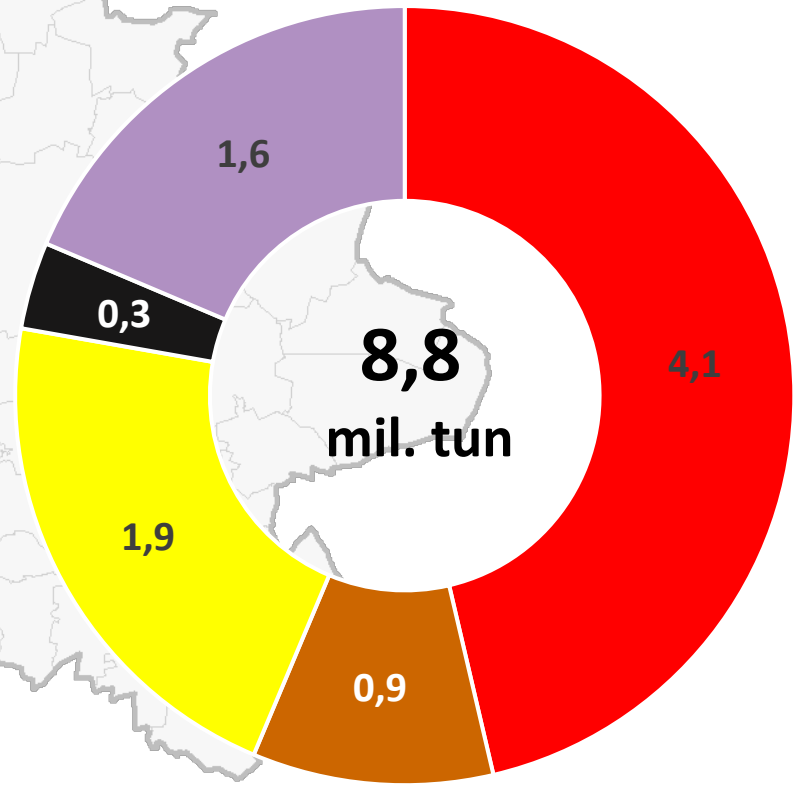
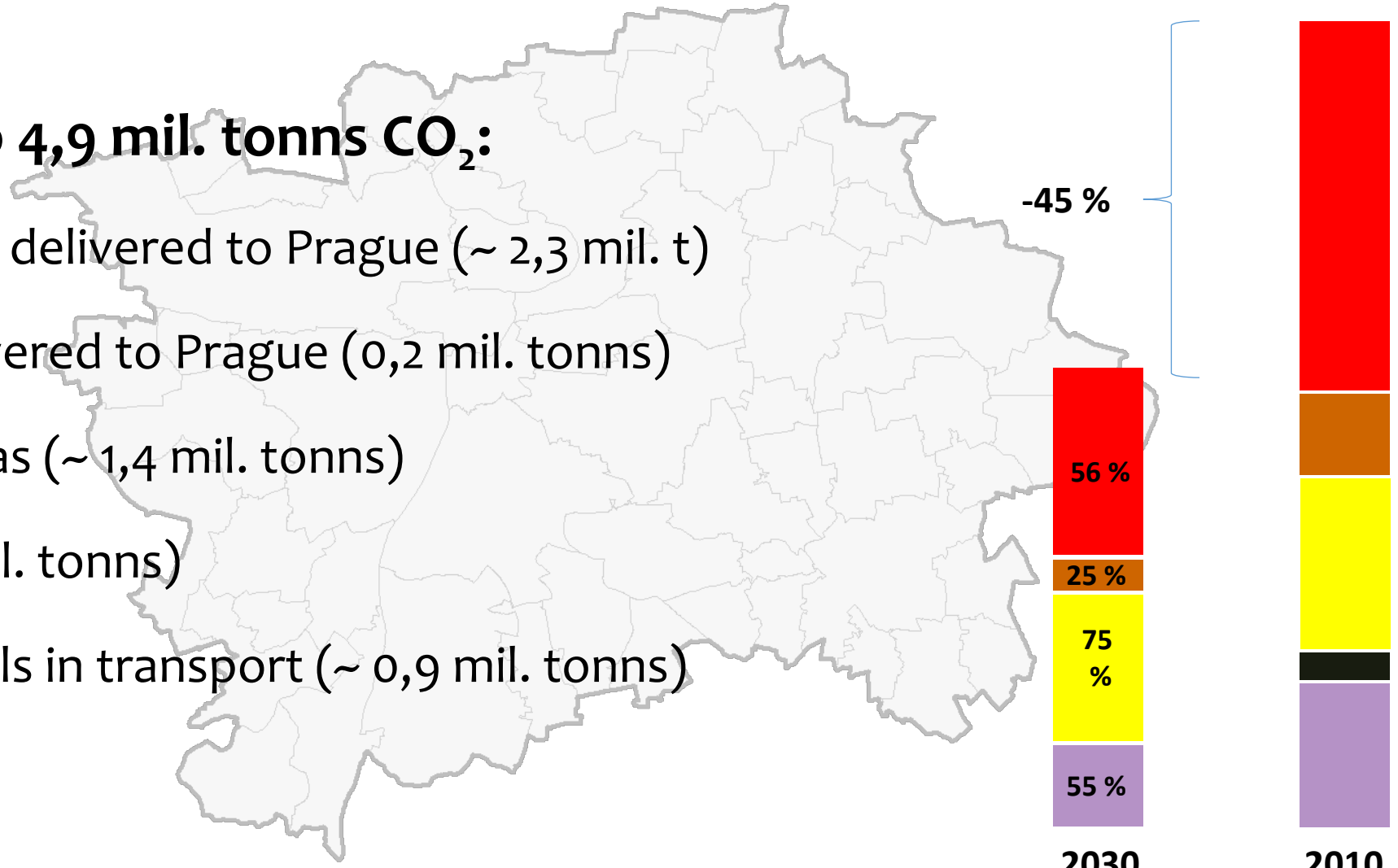
Initial Carbon Footprint (2010)

- **Total ~ 8,8 mil. tons CO_2 (8,3 mil. by 2018)**
  - Electricity delivered to Prague (~ 4,1 mil. t)
  - Heat delivered to Prague (~ 0,9 mil. t)
  - Natural gas (~ 1,9 mil. t)
  - Coal (~ 0,3 mil. t)
  - Liquid fuels in transport (~ 1,6 mil. t)



2030: -45% scenario

- **From 8.8 to 4,9 mil. tonns CO_2:**
  - Electricity delivered to Prague (~ 2,3 mil. t)
  - Heat delivered to Prague (0,2 mil. tonns)
  - Natural gas (~ 1,4 mil. tonns)
  - Coal (0 mil. tonns)
  - Liquid fuels in transport (~ 0,9 mil. tonns)



Co-financing

- 1/ **Operational Program Environment 2014-2020** (tens of millions of EUR for co-financing of the investments)
- 2/ **ELENA** Program (millions of EUR for project preparation)
- 3/ **Modernization Fund** (2021 až 2030), hundrets of millions of EUR)
- 4/ **Inovation Fund**
- 5/ **Just Transition Fund** (cca 2 bil. EUR for CZ).

Projects delivered to MF Platform, 04/2020

- ELECTRICITY: installation of PV plants on the Prague‘s property (up to 500 MW_e) and establishment of Prague Renewable Energy Community
- HEAT: replacement of lignite heating plant (Czech Energy Works) for 100-200 MW heat pumps, 500 MW_{el+h} and district heating network modernization,
- EE: EPC on buildings owned by the City of Prague,
- PUBLIC TRANSPORT
  - Replacement of 900 diesel buses (75 % of the fleet) for e-buses, e-trolleybuses nd hydrogen fuel cells incl. charging infrastructure and hydrogen production,
  - Construction of biogas plant, production of biomethane filling 300 trucks of Prague Services by bioCNG,
  - Expansion of public charging infrastructure incl. charging hubs.

INNOVATIVE SOLUTIONS (1/6)

Prague‘s Renewable Energy Community

Brief information about the intention

- To establish Prague‘s Renewable Energy Community and install up to 500 MW_{el} in PV panels on the roofs, facades and balconies of city buildings and city companies,
- To select an innovative green electricity trader (aggregator, responsible for the deviation),
- To open the Community to Prague citizens (physical persons, sole proprietors, small enterpreneurs etc.),
- Members benefits: electricity costs savings (30 to 40 %), higher price for the sale of excess electricity (feed-in by the City of Prague / PPA), lower price by entering the centralized purchase of electricity, climate responsibility),
- Advantage for Prague: replacement of fossil by renewable electricity for the price not higher than market price, citizen’s involvement = democratization of energy system.

Pilot project of RE Community

- Apartment building owned by the city in Black Bridge (60 app., 95 MWh/year, 1 100 GJ/year)
- Testing the placing of PV in apartment building and **sharing the electricity** produced among the inhabitants (50-70 kWp)
- Building will be **supplemented by a cooling system** with the possibility of using waste heat to heat water
- Roof repair – conversion to a **green roof**.

INNOVATIVE SOLUTIONS (2/6)

Use of biogas from WWTP for the production of biomethane intended for transport

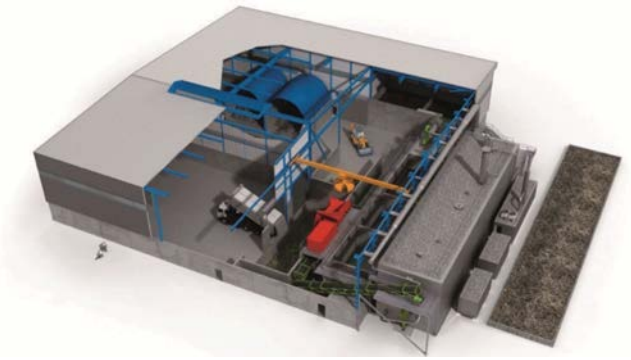
Brief information about the intention

- In 2021, a pilot unit for the conversion of sludge gas to **biomethane** will be put into operation at the water treatment plant,
- Biogas will be injected into gas network in an annual amount of **0,5-1 mil. m^3/year** in the first phase
- Biogas usable for CNG flotille of the Prague Waste Service,
- After the introduction of the operation support (2021+), **5-10 times higher** biomethan production (instead of less efficient electricity production in biogas CHP).

INNOVATIVE SOLUTIONS (3/6)

Biogas plant for biodegradable waste transformation into advanced biofuel

Brief information about the intention



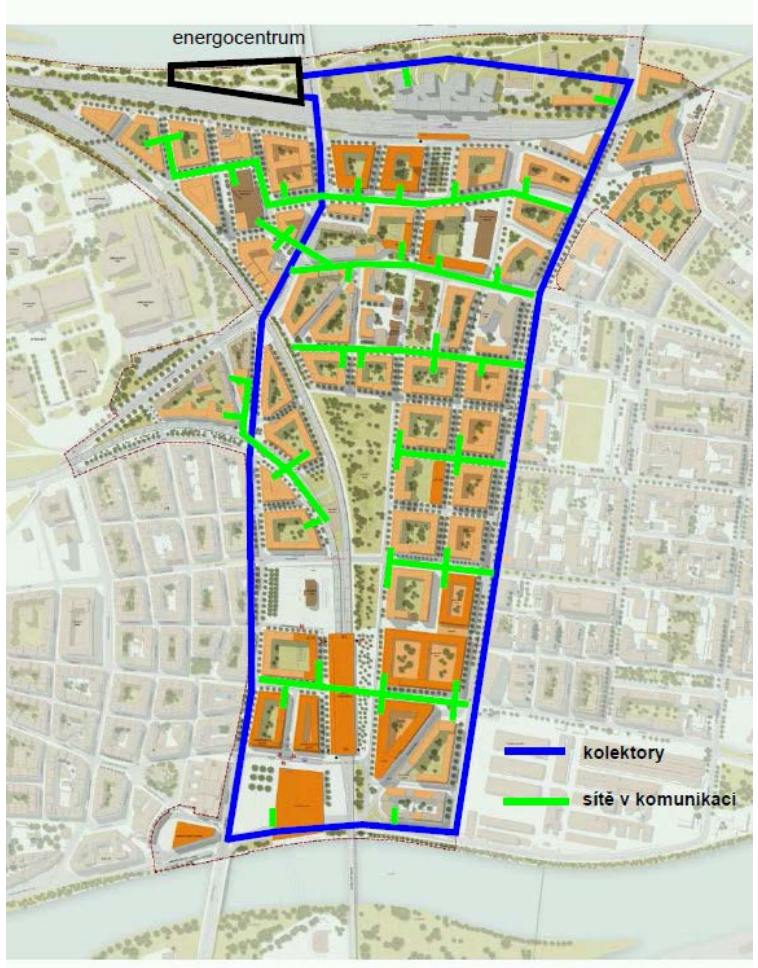
- **A biogas plant** for separate collection of biowaste (restaurants, shops, households) with a capacity up to **50 thousand tons/year,**
- Annual biomethane production up to **50 GWh** (5 million m3/year),
- Corresponds to the annual fleet demand of **300 heavy dumpster cars,**
- Possibility of converting part of the production to **green hydrogen** in the future.

INNOVATIVE SOLUTIONS (4/6)

Use of energy potential of wastewater from the WWTP for heating and cooling of the new development area Bubny-Zatory

Brief information about the intention

- With the assistance of treated wastewater from WWTP the whole locality Bubny-Zatory will be heated and cooled (50 MW_{heat}, 50-70 MW_{cold})
- Carbon footprint of the proposed solution would be **half only**; attractive for the city as well as the investors,
- Excess heatg can be supplied to the entire central heat supply (i > 1 mil. GJ/rok)
- Possibility to introduce heat and cold into the city center in the future.



What will also be part of the 2030 strategy?

- **Adaptation to climate change** (green roofs, rainwater harwesting and re-use, planting of 1 mil. trees),
- **Circular Economy** (higher recycling and products reuse of products, materials and waste),
- **Sustainable mobility** (public transport, walking, cycling, car sharing, toll system, up to 40% e-vehicles in 2030)

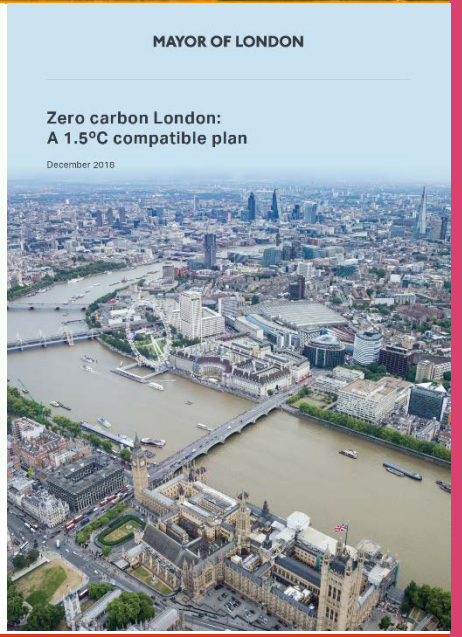
Other European Cities Strategies

- **Berlin** (**4400 MW** PV by2050)
- **Vienna** (**600 MW** PV by 2030)
- **Helsinki** (**15%** by PV in 2035)
- **London** (**1000 MW** PV by 2030)

Adhesive PV films on an underground station

Collective PV system at Lavaterstraße

Guntramsdorf agrophotovoltaic system



"I'm doing everything in my power to reduce London's carbon footprint, and going further and faster than national government to make London a zero-carbon city by 2050."

Sadiq Khan
Mayor of London

Thank you for your attention.

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