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# City of tomorrow Solutions for Urban Needs

## We are in the "urban millennium"

### Population

- 2009: 50% of the world's population lives in cities
- 2030: urban population will grow from 3.5 billion to 4.7 billion

### Economy

- ~50% of global GDP is produced in 600 cities
- By 2025, 40% of global GDP growth will be generated by middleweight cities in emerging markets

### Environment

Cities stand for

- Two-thirds of the world's energy
- 60% of its drinking water
- Up to 70% of its CO2 emissions



## London is a successful proof point of our approach

### Example for successful cooperation in London

#### Siemens and London – a close partnership

- We started working intensively with London in 2007
  - City Account Manager installed to drive early engagement and representing our entire portfolio
  - We offer the specific domain know-how
- **Interurban mobility:** 1,200 vehicles for regional trains
  - **Automated video surveillance:** Comprehensive CCTV services to improve community safety
  - **Hybrid Buses:** Consume ~40% less fuel and emissions
  - **Toll System:** City congestion charging system and enforcement of low-emission zone
  - **E-mobility project:** Supply of software solutions, related services and charging stations
  - **Smart Grid:** Collaboration with UK Power Networks to develop a power distribution concept for 2020



## In Shanghai we have successfully implemented our approach in a fast growing market

### Example for successful cooperation in Shanghai

- City Account Manager established in September 2010
- Close cooperation with Shanghai government and authorities
- Participation in the study of Low-Carbon development of Hongqiao Business District
- **Metro:** Switchgear systems for 5 metro lines, propulsion system for 138 cars of Metro Line 11 South expansion
- **Green building solutions** for Shanghai International Cancer Hospital
- **Building Energy Saving** and energy consumption monitoring systems for 4 big hospitals
- **Smart Grid:** Strategic cooperation agreement with Shanghai government of new technologies
- **E-Mobility:** Delivery and installation of 144 charging stations for e-cars in the city





# Siemens References in Vienna – Lighthouses

## Hydro-Powerplant Mauer



The hydro powerplant Mauer, which supplies about three million kilowatt hours of power every year, was established in cooperation with Wiener Wasserwerke (Vienna Water Board). Siemens developed a customized contracting business model. The power station will have paid for itself in 13 years.

## Incineration plant Pfaffenau



Open since 2008 it converts 250,000 tons of waste into 65,000 MWh of electricity for 25,000 homes and public buildings. It uses the latest technology to ensure both high efficiency and low environmental impact. Siemens delivered the steam turbine and control technology.

## Biomass power station Simmering



Steam generator with circulating fluidized bed firing and intermediate superheating. Intermediate fuel storage with conveyor system. Complete electrical and control-engineering equipment, including integration into the existing power station. In the new biomass power station 200,000 tons of wood trimmings and off cuts, bark and unpolluted old wood will be burnt. Reduction of CO2 emission by 144m tons p.a.

## Laboratory diagnostics Danubehospital SMZ



The Danube hospital was the first hospital with digital radiology and it was equipped by Siemens. One of the focus points of the hospital are emergency and accident radiology. X-ray, spiral computer tomography, magnetic resonance imaging, ultrasound, neuro-radiology, coronary angiography and interventional radiological therapy. Also Siemens radiotherapy equipment for cancer treatments is being used.

## Vienna Tram / Metro



Metro: 94,7 % recycling components/materials 30 % less energy use as the last model. 44 Metro trains / Metro-control technology, energy supply  
ULF: 300 ULF- ultra low floor light rail trams Energy saving 30 % through regenerativ braking  
2012 -2020 : + 150 ULF + 4 Metros p.a. + control technology + 12 ebuses (2012) + eticketing (2014)  
Extension U1 (2015), U2 (2013 Seacity Aspern)

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## Vienna traffic management



The traffic control computer supports the implementation of control, management and information strategies for traffic in Vienna. With this innovation, Siemens offers traffic-dependent management of traffic lights. Following the replacement of standard bulbs with LEDs from Osram, traffic lights consume 90 percent less electricity. The cost savings for the City of Vienna amount to around € 1.7m p.a.

## IT Case Study – Backup – Slide

### Toll lane with dynamic pricing for Tel Aviv highway

#### Fast lane on Tel Aviv – Jerusalem highway



#### "Hot lane" dynamic tolling system for Tel Aviv – Jerusalem highway

- 1<sup>st</sup> dynamic tolling fast lane worldwide – toll depending on lane utilization
- 30,000 vehicles registered after only 6 weeks

#### USP of Siemens offering

- Deep expertise in urban and interurban traffic management
- Advanced analytics for algorithm for setting optimal dynamic tolling fee
- Leverage of "Conduct+" IT platform for interurban tolling systems

#### Value proposition

- ✓ **Optimized traffic flow** – guaranteed speed  $\geq 70$  km/h on fast lane
- ✓ **Reduced number of vehicles in cities** – toll-free for vehicles  $> 3$  pax.
- ✓ **Easy identification of blacklisted cars**
- ✓ **Automatic billing system**