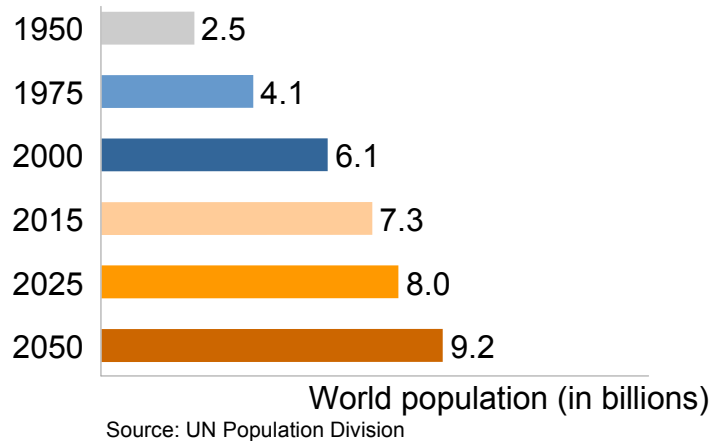


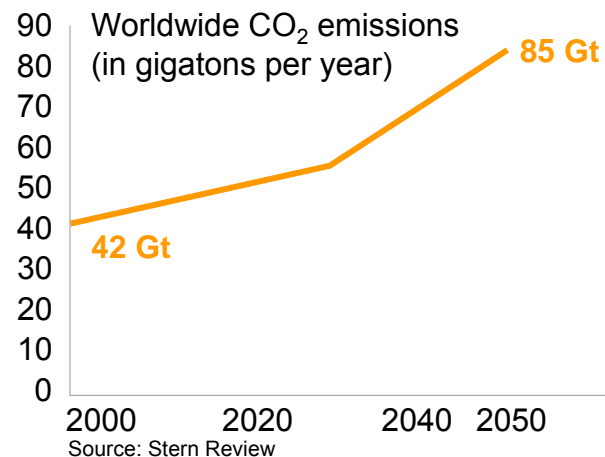
The future needs the railways. For a cleaner environment.

Green mobility.

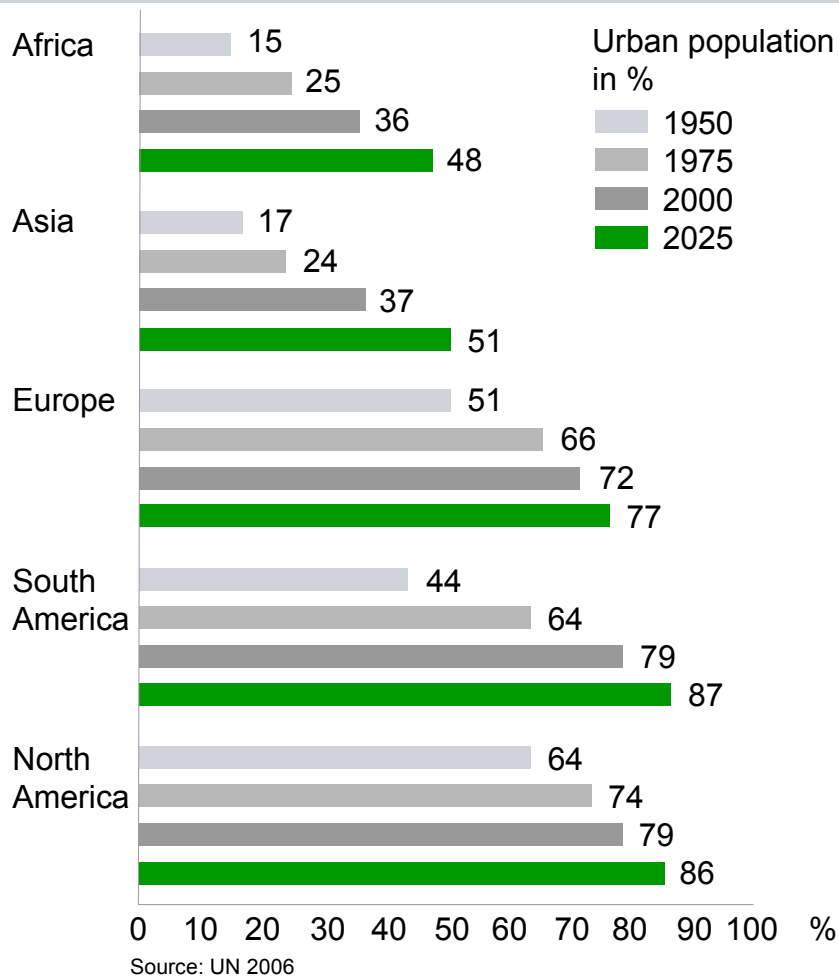
The challenge of climate change



- Increasing growth in the world population and global economy
- Corresponding depletion of natural resources and increase in environmentally-harmful emissions
- Without counter measures: increase in annual CO₂ emissions to around 85 gigatons in 2050



The challenge of urbanization

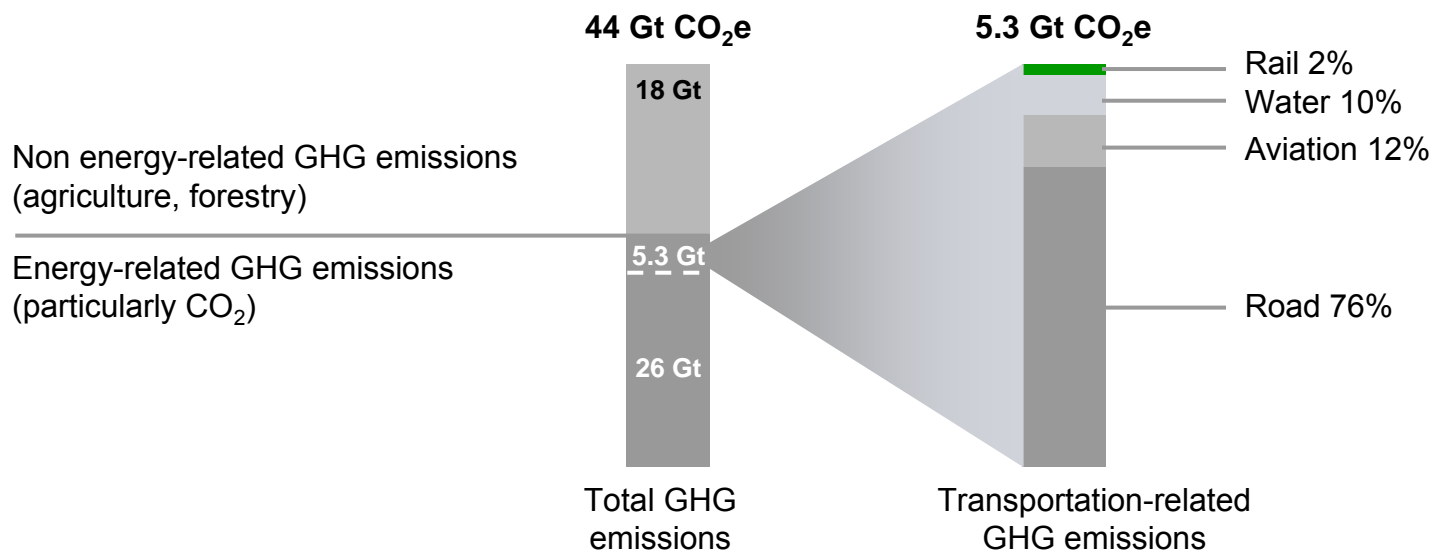


- The spread of urbanization calls for attractive, environmentally-friendly and economic transportation solutions in order to ensure the competitiveness and appeal of urban regions in the long term

Energy-efficient products and solutions for long-term environmental compatibility



- With its solutions portfolio, Siemens can directly impact around 26 gigatons of the annual energy-related CO₂ equivalents (CO₂e) of greenhouse gas (GHG) emissions
- Around 5.3 gigatons of this can be ascribed to transportation-related emissions
- At around 2%, railways account for the smallest component of all transportation modes



Source: IEA World Energy Outlook, Vattenfall, Siemens

We care for attractive and clean railway systems: Green mobility.

SIEMENS

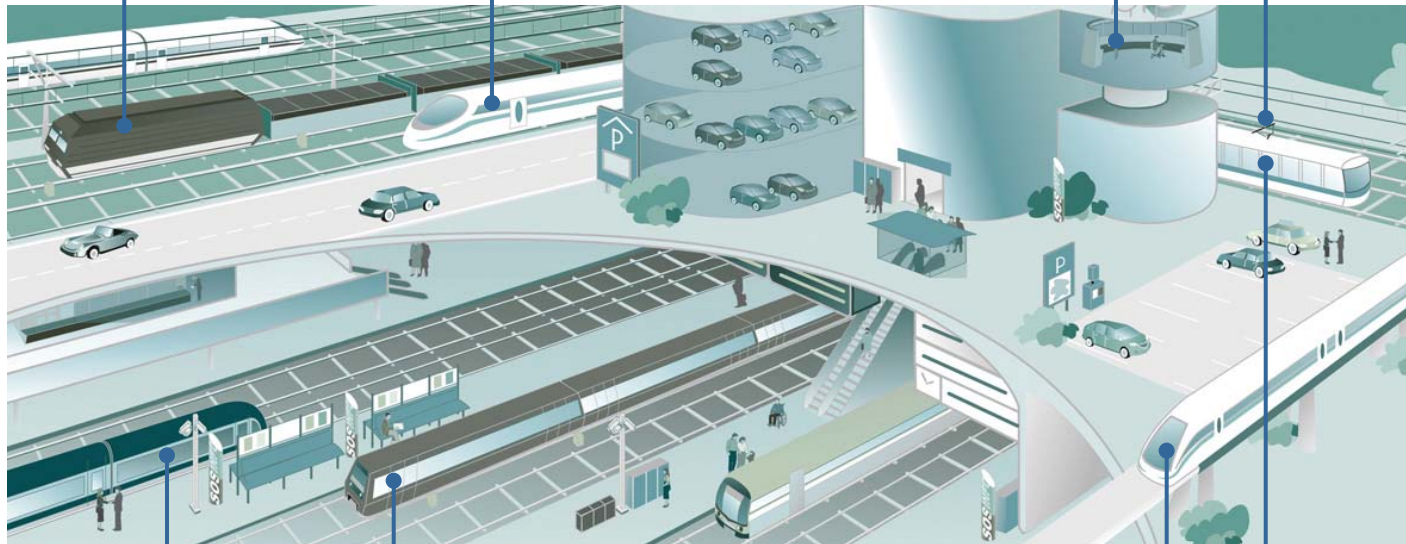
Intelligent solutions for more environmental sustainability:

Eurorunner
13 dB(A) quieter
and up to 16%
more economical

Velaro
Only 0.33 liter of fuel
per seat per 100 km

ZLS 901
Route setting system
Fewer stops mean lower
energy consumption

Sitras SES
Saves up to 300 tons
CO₂ due to recovered
braking energy



Syntegra trucks
Energy-efficient, oil-
free and lightweight

Metro Oslo
With 95% recyclability,
valuable to the end

Transrapid
75% cleaner than
an airplane at
400 km/h

Combino Plus
Eco-friendly large space
streetcar for congestion-
free city traffic

Metro Oslo



- 94.7% recyclable components and materials
- 30% lower energy consumption than previous model due in part to lightweight construction and regenerative brakes
- Environmental labeling to ISO 14021 standard

With 95% recycling rate, valuable to the end



100% Combino Plus low-floor streetcars



- Energy savings up to 30% through regenerative braking system
- No wear on brake linings due to electric braking
- Over 90% recyclable
- Reduced noise emission

Eco-friendly space saver for congestion-free urban traffic



Desiro UK commuter trains



- Water-soluble paints and solvent-free coatings
- Recycling rate 96.8%
(material recycling: 89.9%,
thermal recycling: 6.9%)
- Reduced disposal costs

Environment-friendly right from the start



Syntegra bogie



- Fully-integrated traction, running gear and braking technology
- Energy-savings up to 26%, e.g. through
 - Elimination of gearbox
 - Lightweight construction
 - Regenerative brake system
- Fewer emissions (oil, braking dust, abraded matter, noise)
- Wear-resistant and easy maintenance

Energy-efficient, oil-free and lighter in weight

Velaro Platform To fulfill Europe's climate protection targets

SIEMENS



- Converted energy consumption of only 0.33 liters of fuel per passenger per 100 km
- Mineral oil replaced with alternative, environmentally-compatible coolant in the transformers (e.g. with ICE 3 and Velaro E)
- Wooden floors from sustainable forestry
- Environment-friendly refrigerant in the HVAC systems
- Completely recyclable trainset

Only **0.33 liters** per passenger / 100 km



Velaro Platform Energy efficiency

SIEMENS



- The high speed train driving resistance depends mainly on its aero dynamical characteristics.
- The driving resistance increases e.g. approx. 20% with the increase of the speed from 250 km/h to 280 km/h.
- Improvements in the aerodynamic result in significant reduction of the driving resistance. This can be achieved by improvements in the roof, under floor, coaches transitions, etc..



We are committed to sustainability



UITP Charter on Sustainable Development

econsense

Forum for Sustainable Development of German Business



COMMITTED TO
IMPROVING THE STATE
OF THE WORLD

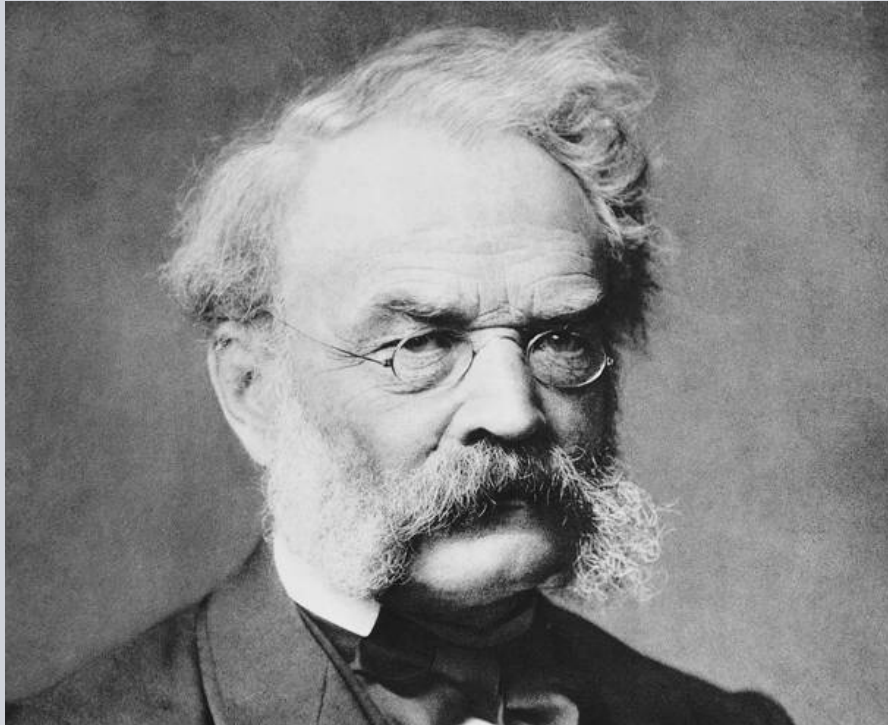


THE GLOBAL
COMPACT



- Active member in important national and international organizations
- Listing in the Dow Jones Sustainability Index for the eighth time in succession
- Global certification of Siemens' EH&S standards for projects, development and production sites according to:
 - ISO 14001
 - OHSAS 18001

Sustainability is part of our corporate philosophy



“I won’t sell the future for quick profits”

Werner von Siemens, 1816–1892



Thank you for your attention!