

Situation der Energieversorgung in Lateinamerika

Daniel Fernandez
Siemens AG
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Energy supply in the future will place major challenges on the infrastructure

Three global megatrends in the energy sector

Demographic dynamics



- **Population growth:**
7.5 bn in 2020 (+1.1 bn)
- **Power consumption:**
+5.2% p.a. in emerging regions and 1.4% in developed world
- **Megacities (>10 million):**
22 new megacities in 2015

Resource scarcity



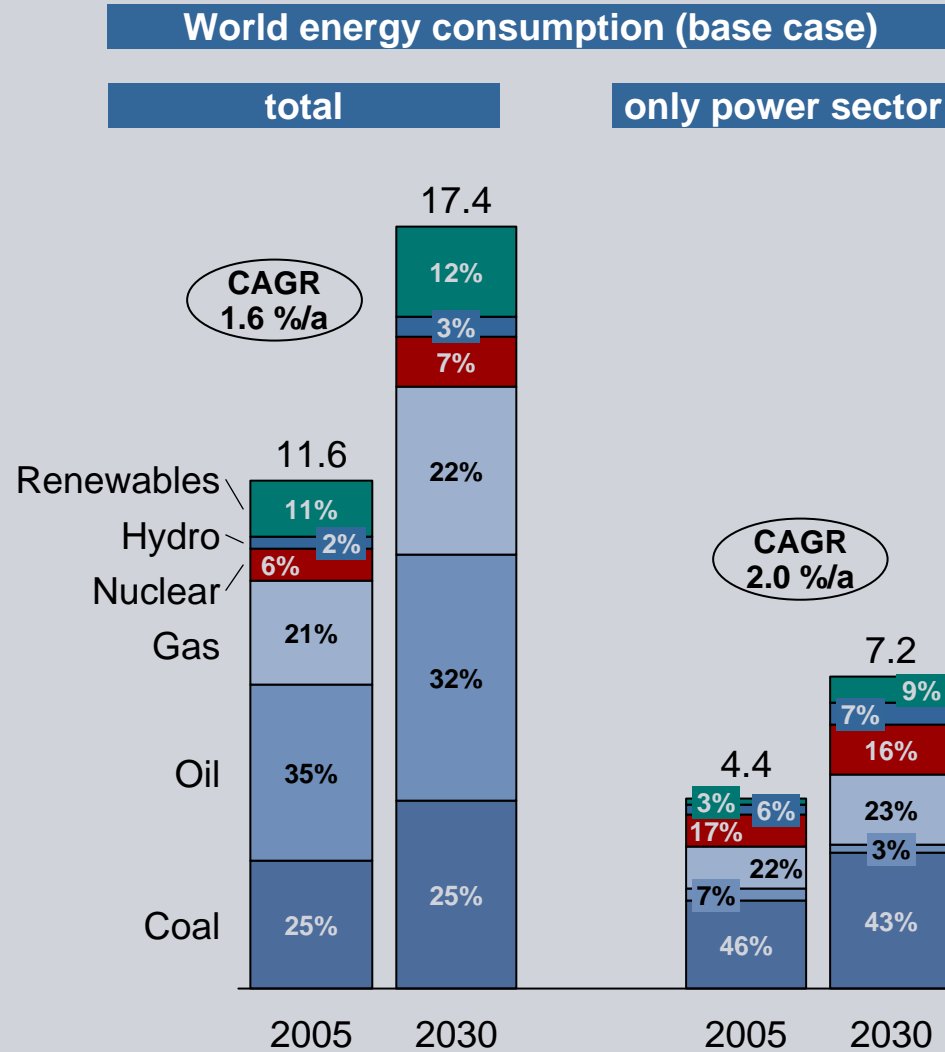
- **Geopolitics:**
70% of world oil and gas supplies only in a few countries
- **Fuel diversity:**
Oil price shock in 2008 accelerates shift to broader fuel mix

Environmental focus



- **Global emissions:**
40% increase in air pollution over past 20 years
- **Climate change:**
Global warming limited to an average increase of 2 degrees Celsius

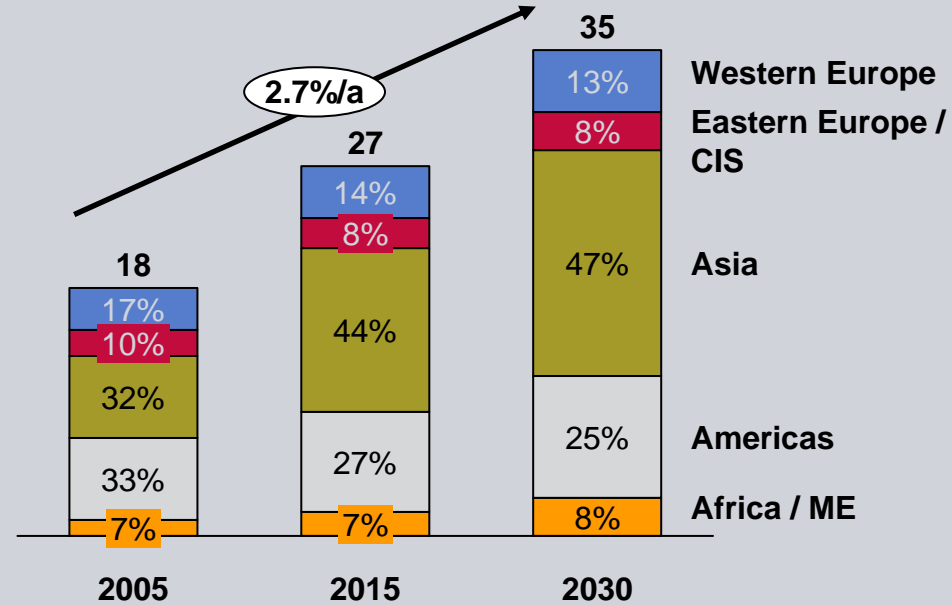
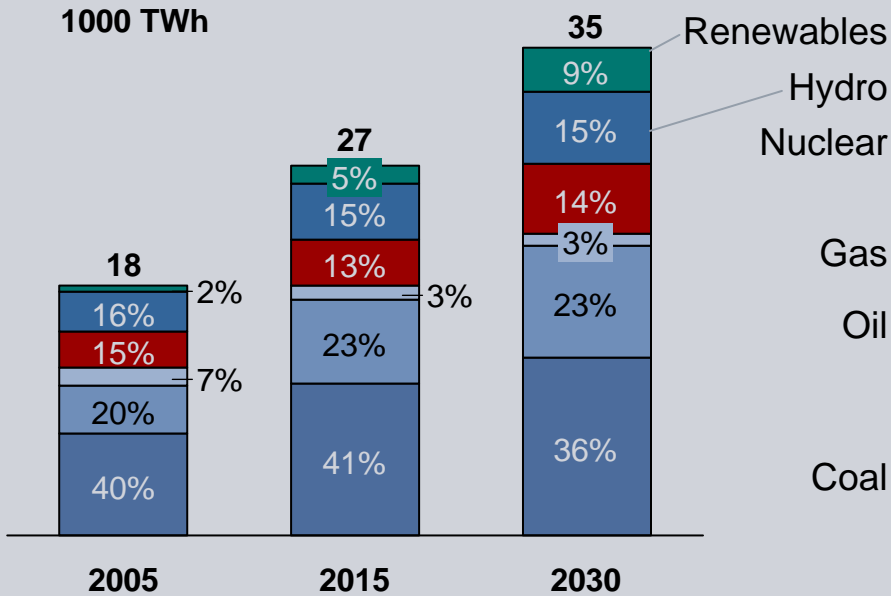
Energy consumption: Growing demand for primary energy will be mainly satisfied predominantly by fossil fuels.



World electricity generation: is expected to nearly double in 25 years; share of fossil fuels remains almost unchanged

Plant types

Regions

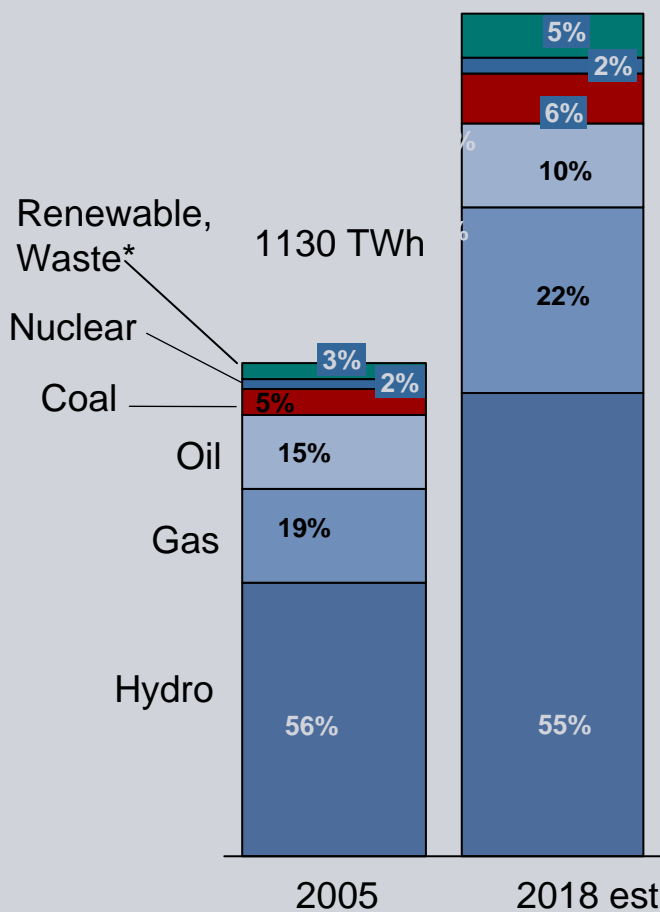




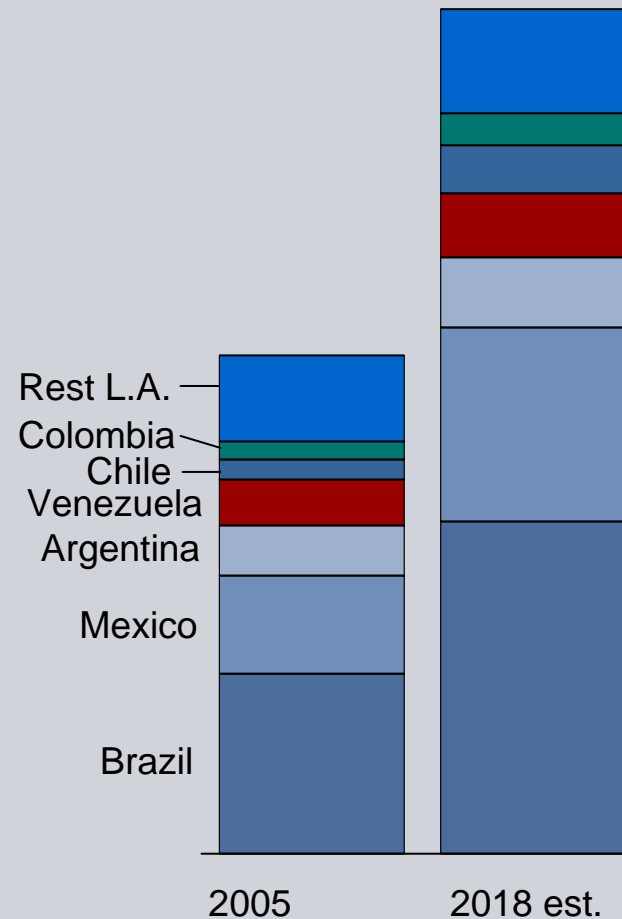
Latin America and Caribbean: Electricity Generation by Fuel and Countries

Electricity Generation by Fuel

1925 TWh



Electricity Generation by Country



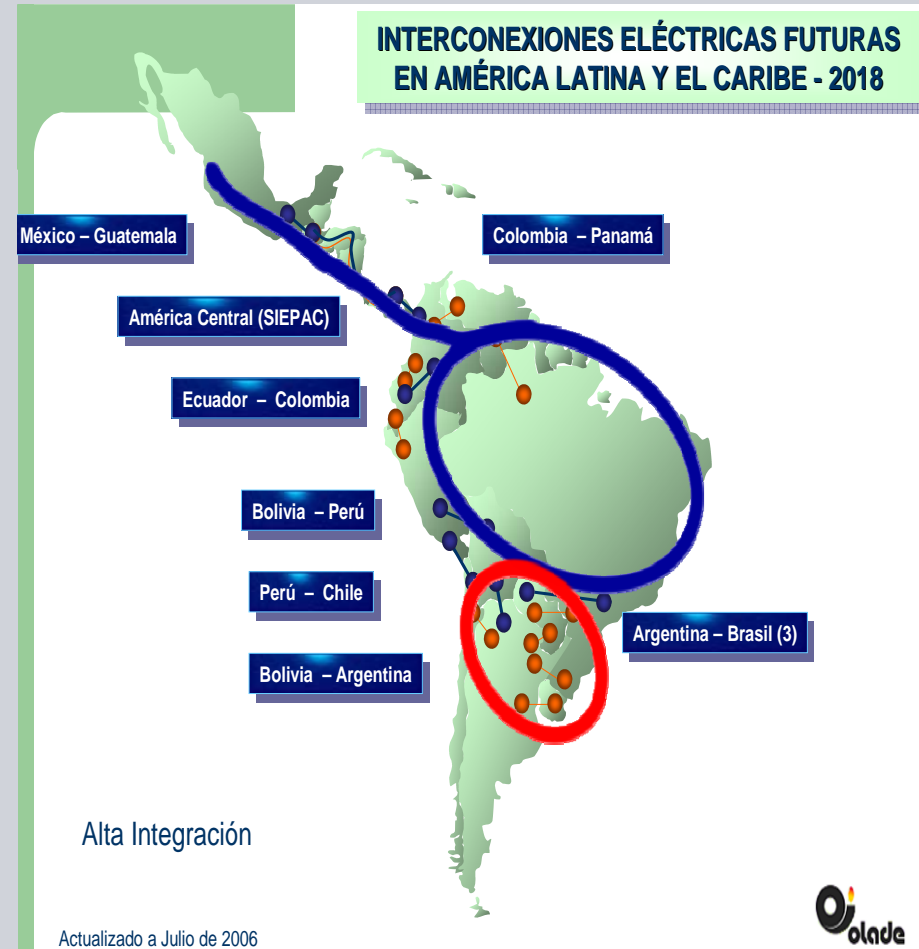
*Geothermal, solar, wind, waste, comb.renewable

Latin America and Caribbean: Electric interconnections.

INTERCONEXIONES ELÉCTRICAS EXISTENTES EN AMÉRICA LATINA Y EL CARIBE - 2006



INTERCONEXIONES ELÉCTRICAS FUTURAS EN AMÉRICA LATINA Y EL CARIBE - 2018



Latin America and Caribbean: Gas Interconnections

**ACTUALES INTERCONEXIONES DE GAS NATURAL
EN AMÉRICA LATINA Y EL CARIBE - 2006**



**INTERCONEXIONES FUTURAS DE GAS NATURAL
EN AMÉRICA LATINA Y EL CARIBE - 2018**



Power sector, technology options:

to address the challenges ... for today and tomorrow

Concerted actions and technology development needed to meet the challenges of future energy supply and environment compatibility.

Today

- Efficiency improvements for the existing and new fleet
- Onshore wind power
- New plants are constructed as carbon capture “ready”
- New technology demonstrations
- Existing nuclear units are upgraded.
- Demand-side management



Mid-term

- New GT/SPP technology
- Offshore Wind Parks
- Full scale demo of CCS
- Other renewables (e.g. large scale solar-thermal)
- New generation nuclear
- Integrated Gasification Combined Cycle (IGCC) with CCS demo.



Long-term

- Full commercial CCS on new plants
- Retrofit post-combustion capture on existing plants
- Ocean power
- Fuel cells
- The hydrogen economy
- Plug-in hybrid electric vehicles



Clean energy:

Technology options for tomorrow's low-emission power mix.

Intermittent Energy – Reduced Fuel Consumption

- Renewable energy:
 - Wind power
 - Solar power



Intermediate-Load/ Peak-Load

- Gas-fired combined cycle power plants:
 - High efficiency
 - Low emissions
 - Load following capability



Low-Emission Base-Load

- Coal-fired power plants:
 - High-efficiency STPP
 - IGCC with CCS
 - Retrofit CCS
 - Nuclear power plants
- Hydro power plants

