



# The relevance of climate-friendly and energy-efficient cooling for NDCs in Asia and Pacific

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# Trend of space cooling in buildings

- Population growth, an increasing middle class, changing lifestyles and rising ambient temperatures drive the increasing demand for cooling in buildings
- Growth (7% p.a. until 2050) comes with vastly growing GHG emissions, which result from fossil fuel-based electricity use for cooling appliances and the wide-spread use of highly climate-damaging refrigerants.
- **Asia defines the “hotspot”**, e.g. in the ASEAN region:
  - **¾ of service floor area** and **½ of residential floor area** (m<sup>2</sup>) of 2050 is still to be built
  - share of **residential cooled floor area** (as % of total floor area) increase to **60% in 2050** from just 10% in 2010



(IEA, 2017b; IEA, 2013)

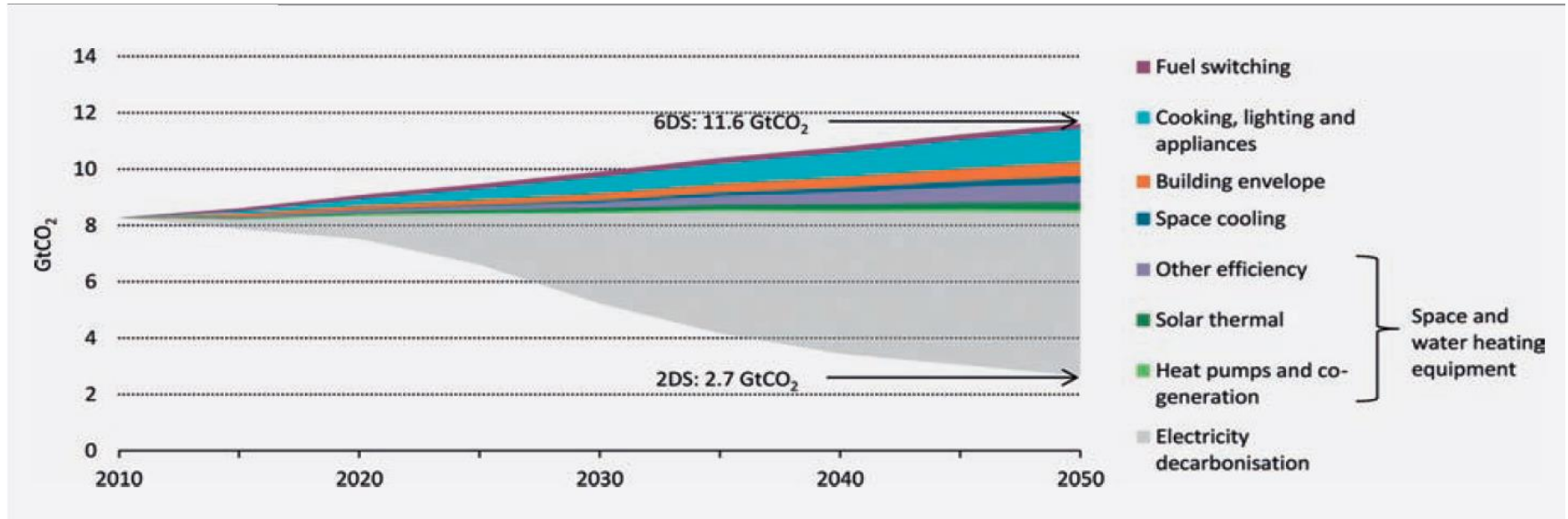
# Climate relevance of space cooling in buildings

- Buildings represent the largest energy-consuming sector in the economy, with over **one-third of all final energy (30%)** and **half of global electricity consumed (55%)** there.
- As a result, buildings are also responsible for approximately **one-quarter of global CO<sub>2</sub> emissions\***.
- If no action is taken, **energy demand is expected to rise by 50% by 2050**.



(IEA, 2017; OECD/IEA, 2017)

# Contribution of CO<sub>2</sub> emissions reduction in building sector (global)



CO<sub>2</sub> emissions in the building sector need be reduced to one-quarter of current levels by 2050

(IEA, 2013)

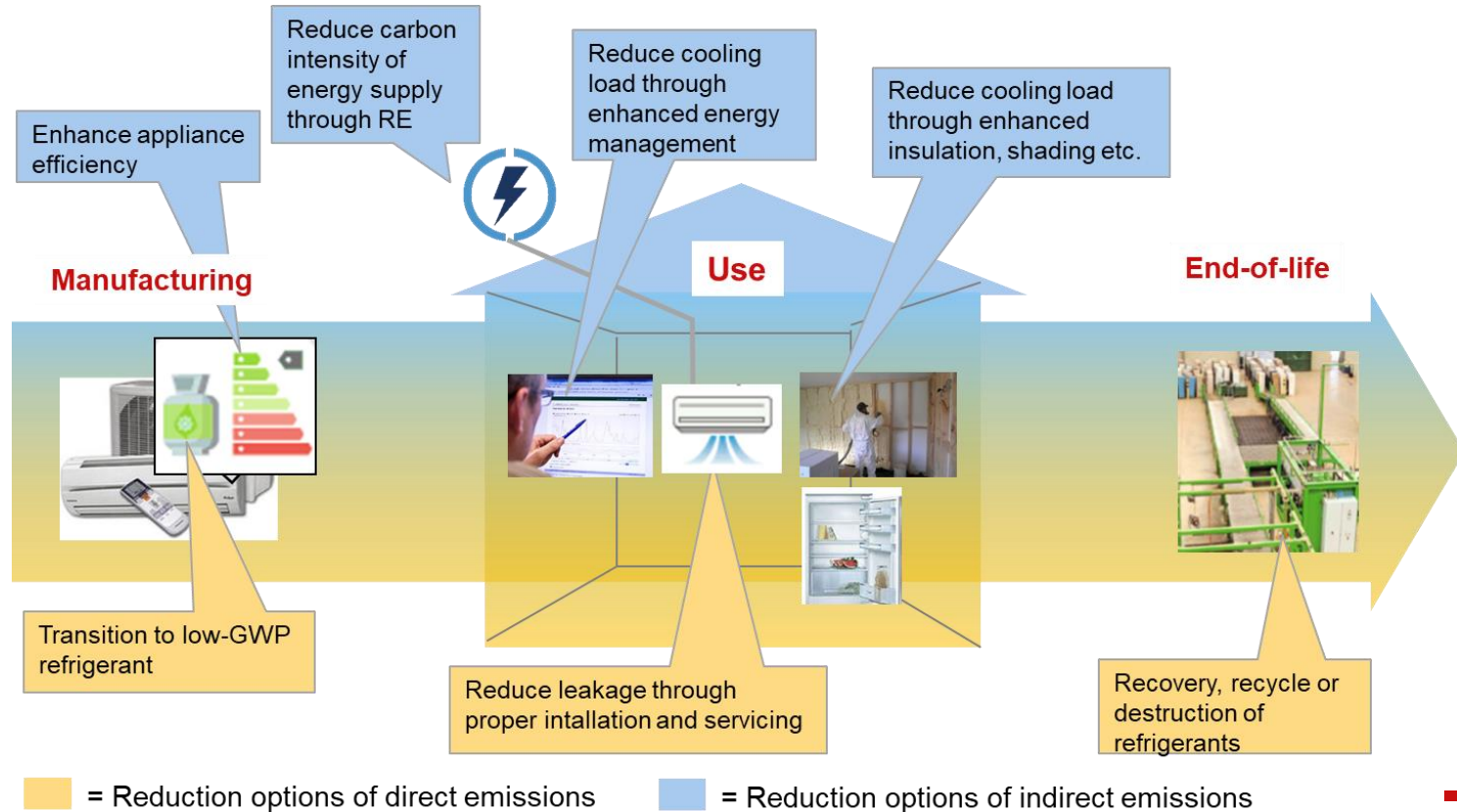
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# GHG mitigation options for space cooling in buildings



(GIZ Proklima, 2017)

# GIZ products and services on Green Cooling

➤ Green Cooling Initiative website: <https://www.green-cooling-initiative.org/>

➤ Recommended publications:

- [Advancing NDCs through climate-friendly Refrigeration and Air Conditioning](#)
- [Coordinating finance for sustainable refrigeration and AC](#)
- [Non-state action on climate-friendly and energy-efficient cooling](#)

