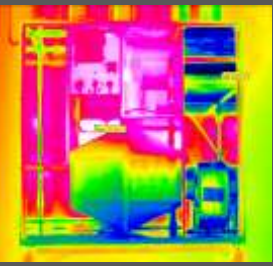
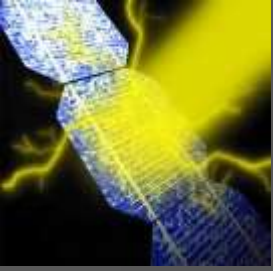



# First Meeting of the Joint Task Force on Energy Efficiency Standards in Buildings UNECE - Geneva 30-31 October 2017



## Session C: Framework guidelines for energy efficiency standards in buildings

Dr. Burkhard Schulze Darup, Architect  
Co-chair of the Joint Task Force, Germany

An aerial night photograph of Paris, France, showing the city's lights and the Eiffel Tower illuminated in the center. The tower is the focal point, with its golden lights contrasting against the dark night sky. The surrounding city is a dense grid of lights, with some taller buildings visible on the left side.

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Energy Efficiency Standards in Buildings  
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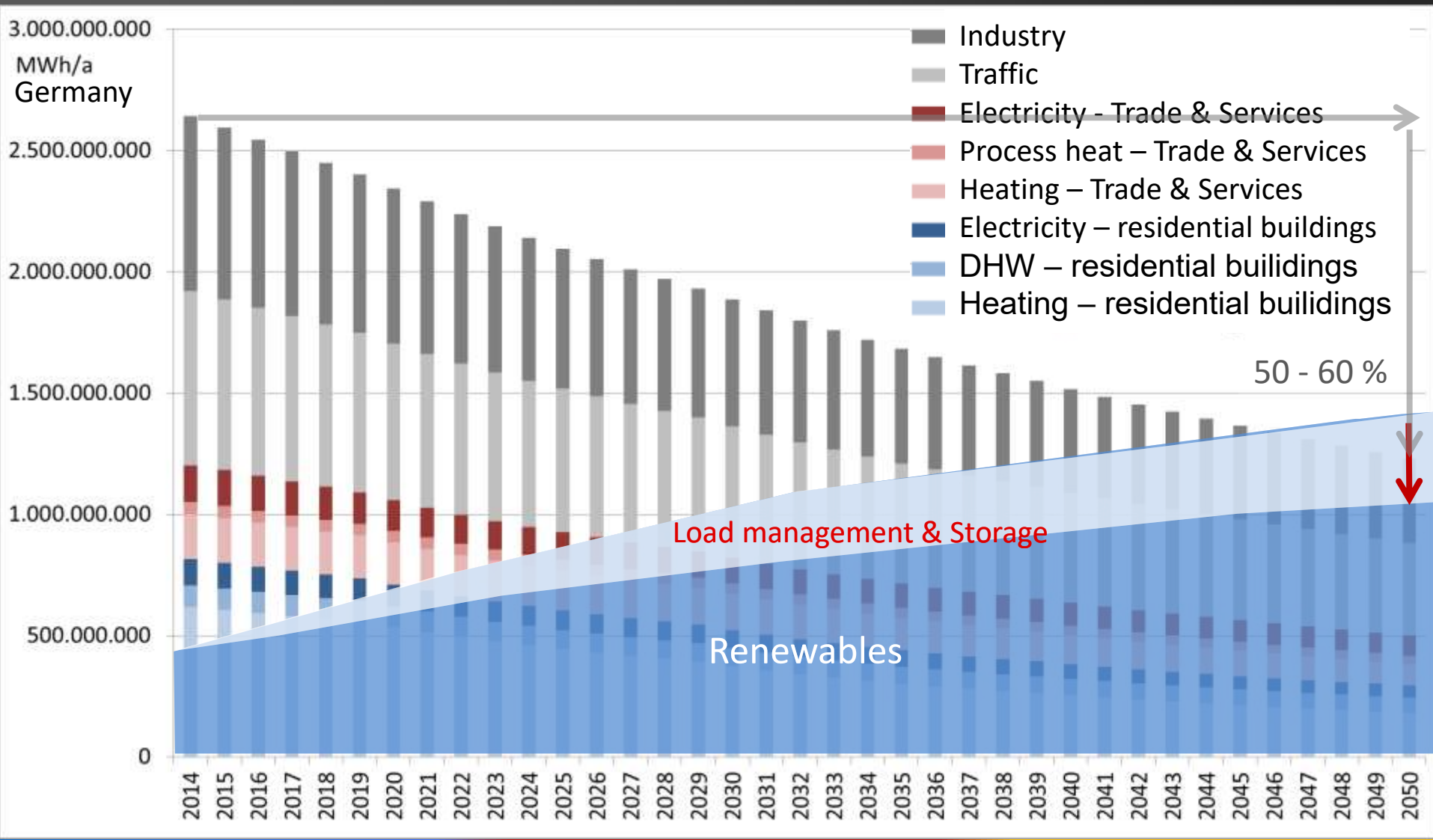
Session C:  
Framework guidelines for energy  
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## 2. GOAL: 95-percent reduction of greenhouse gas emissions until 2050

### Balance between energy efficiency and renewables



## 2. GOAL: 95-percent reduction of greenhouse gas emissions until 2050

### Requirements for the Efficiency of Buildings

	Heating/ Cooling	Hot Water	Ventilation Heat recovery	Electric Power Requirement
Energy demand	25 kWh/(m <sup>2</sup> a)			
Primary energy demand	45 kWh/(m <sup>2</sup> a)			
Primary energy demand	90 kWh/(m <sup>2</sup> a)			

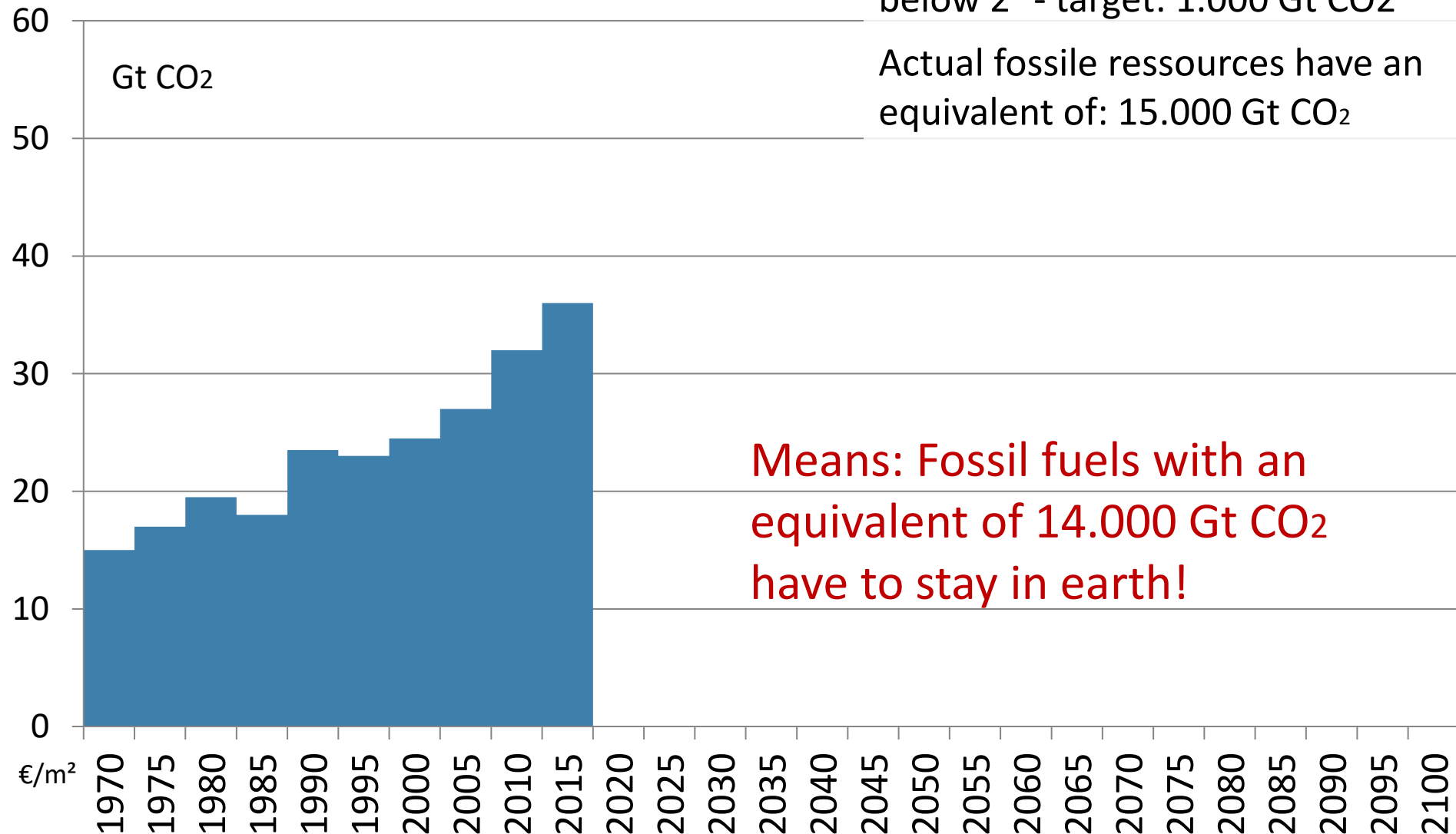
# Entwicklung der CO<sub>2</sub>-Emissionen seit 1970 Development of CO<sub>2</sub>-Emissions since 1970

Fossile Ressourcen vs. 2 °- target

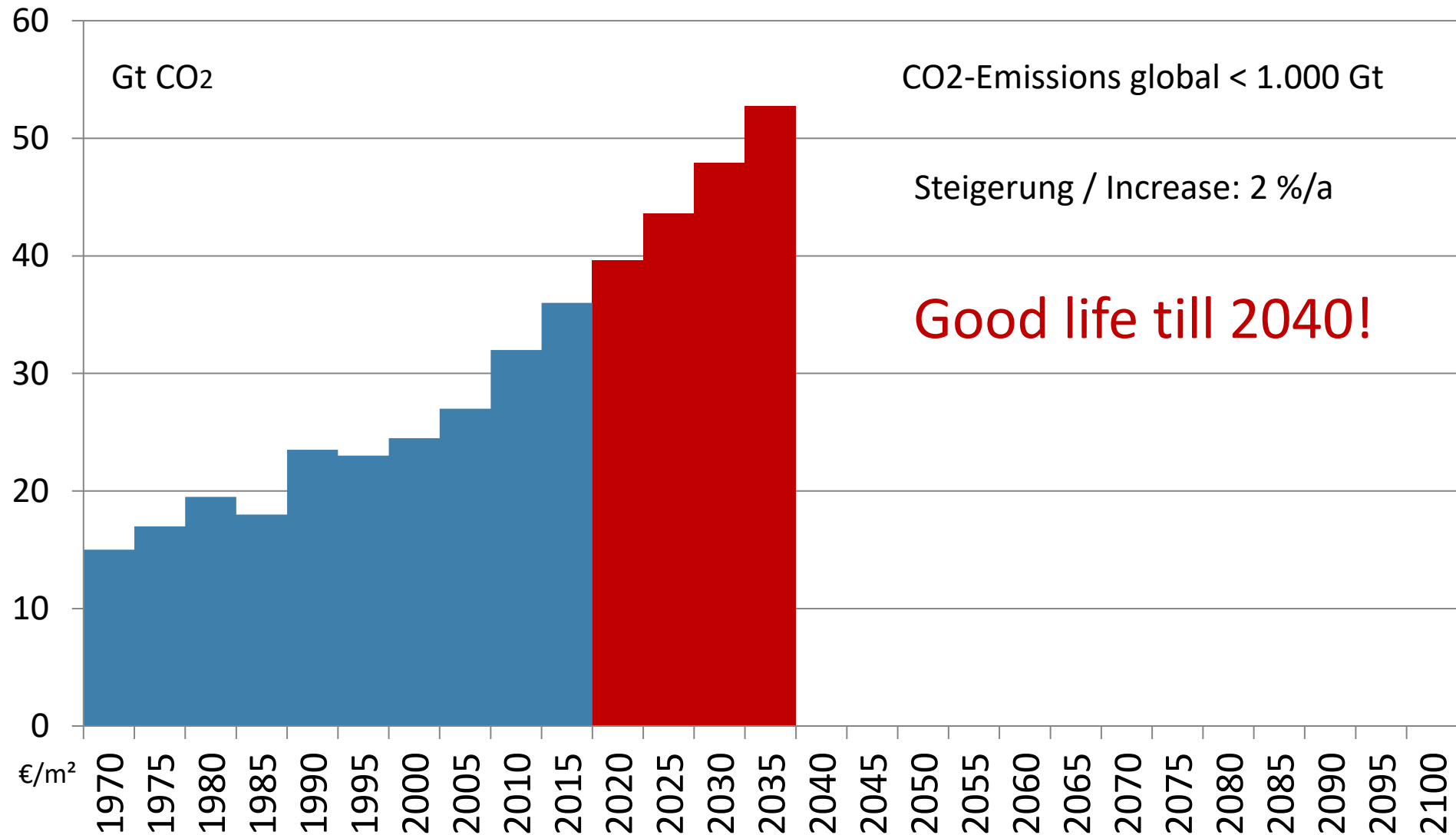
Max. emissions to stay

below 2 °- target: 1.000 Gt CO<sub>2</sub>

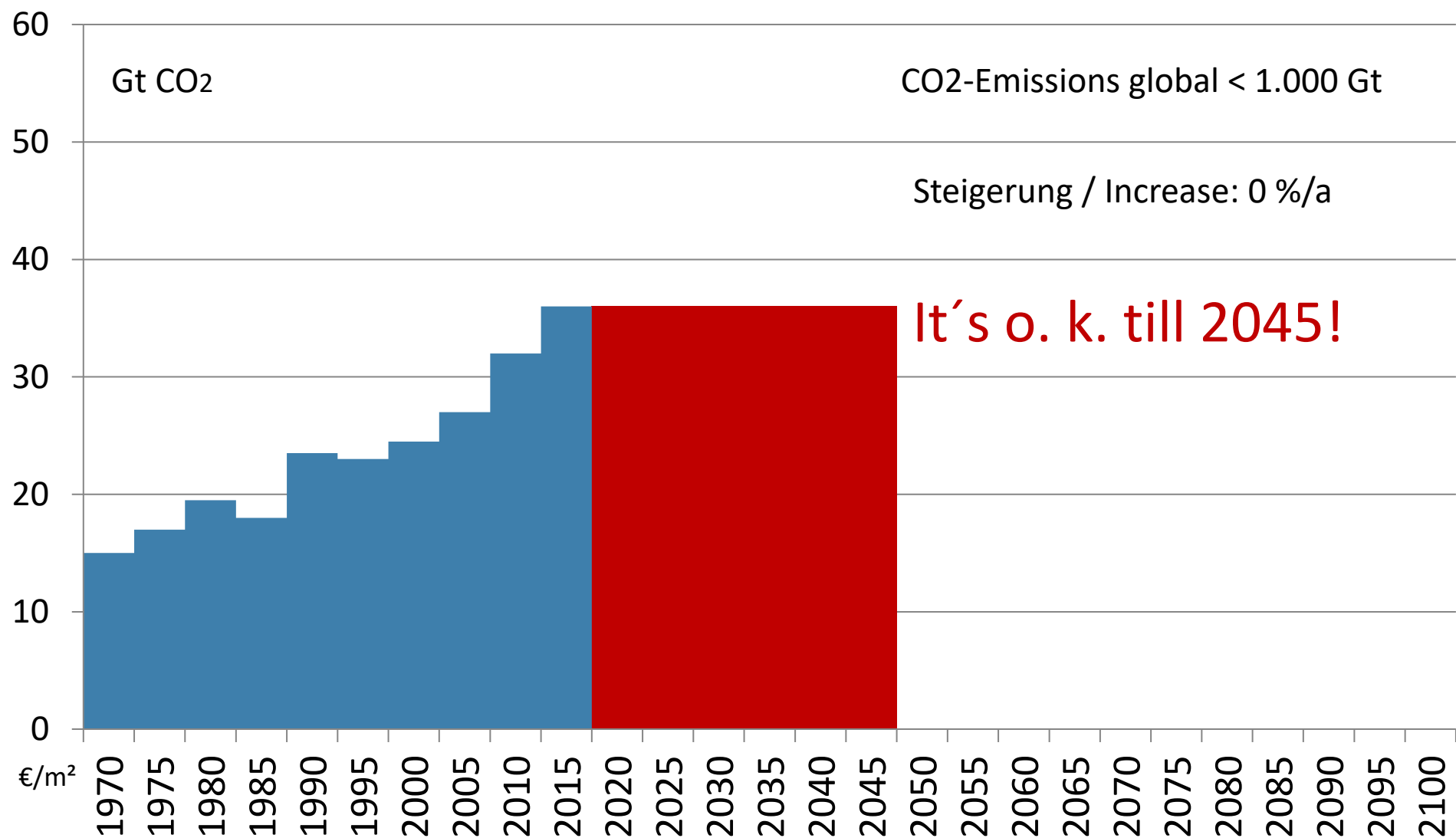
Actual fossil resources have an  
equivalent of: 15.000 Gt CO<sub>2</sub>



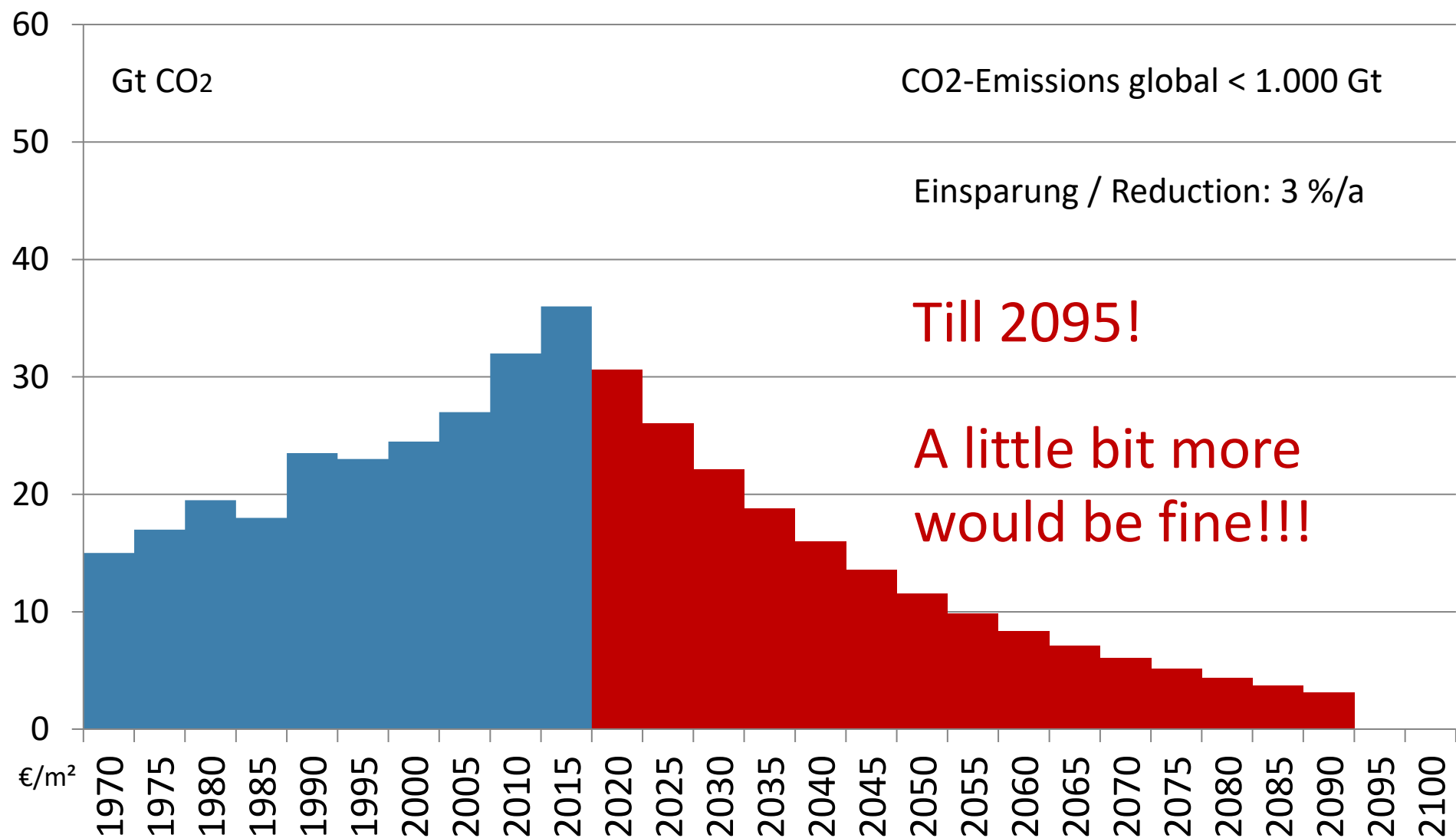
# Verbleibende CO2-Emissionen zur Einhaltung des 2 °-Ziels Remaining CO2-Emissions for adherence to 2 ° - Agreement



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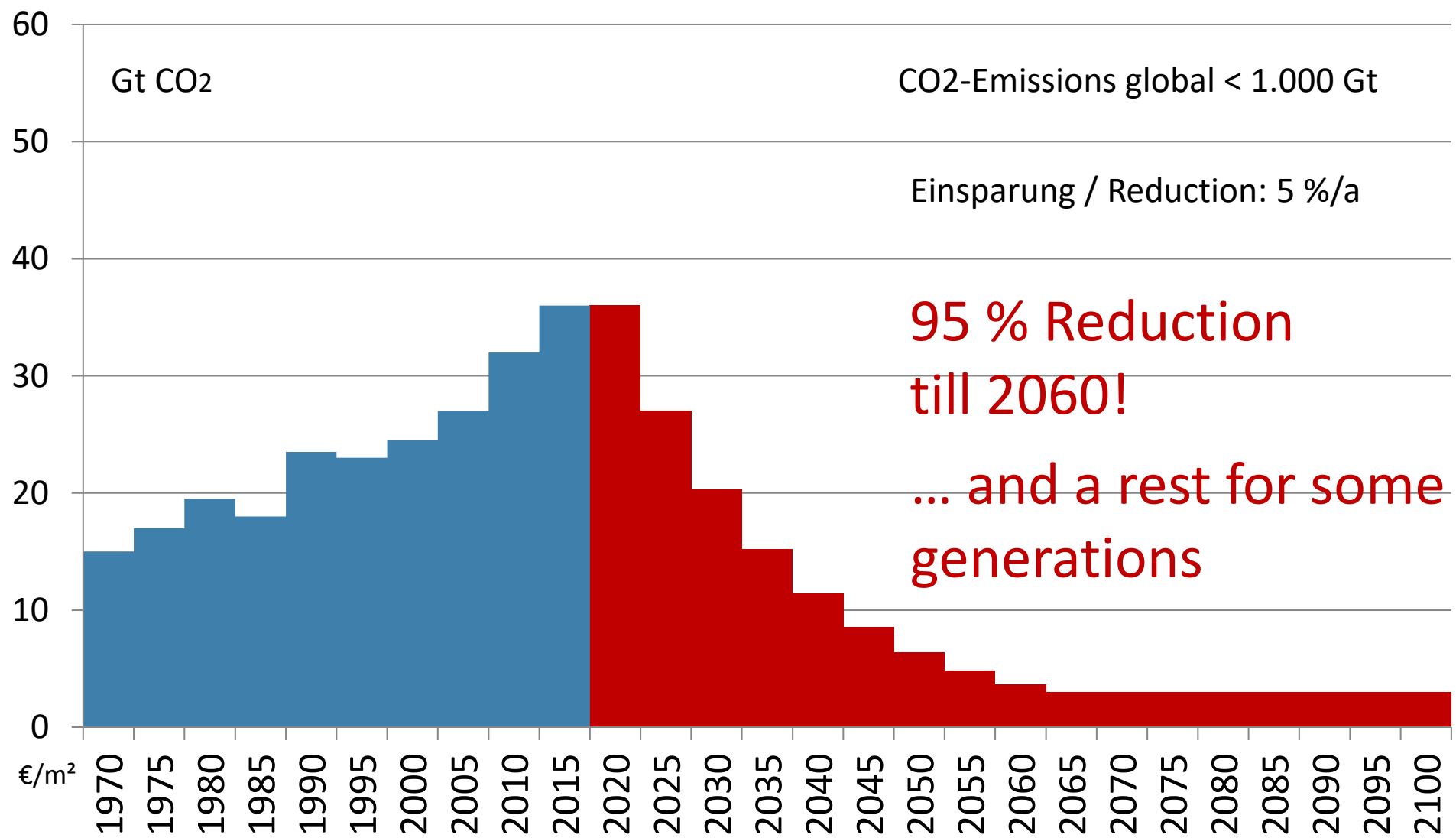


# Verbleibende CO2-Emissionen zur Einhaltung des 2 °-Ziels Remaining CO2-Emissions for adherence to 2 ° - Agreement





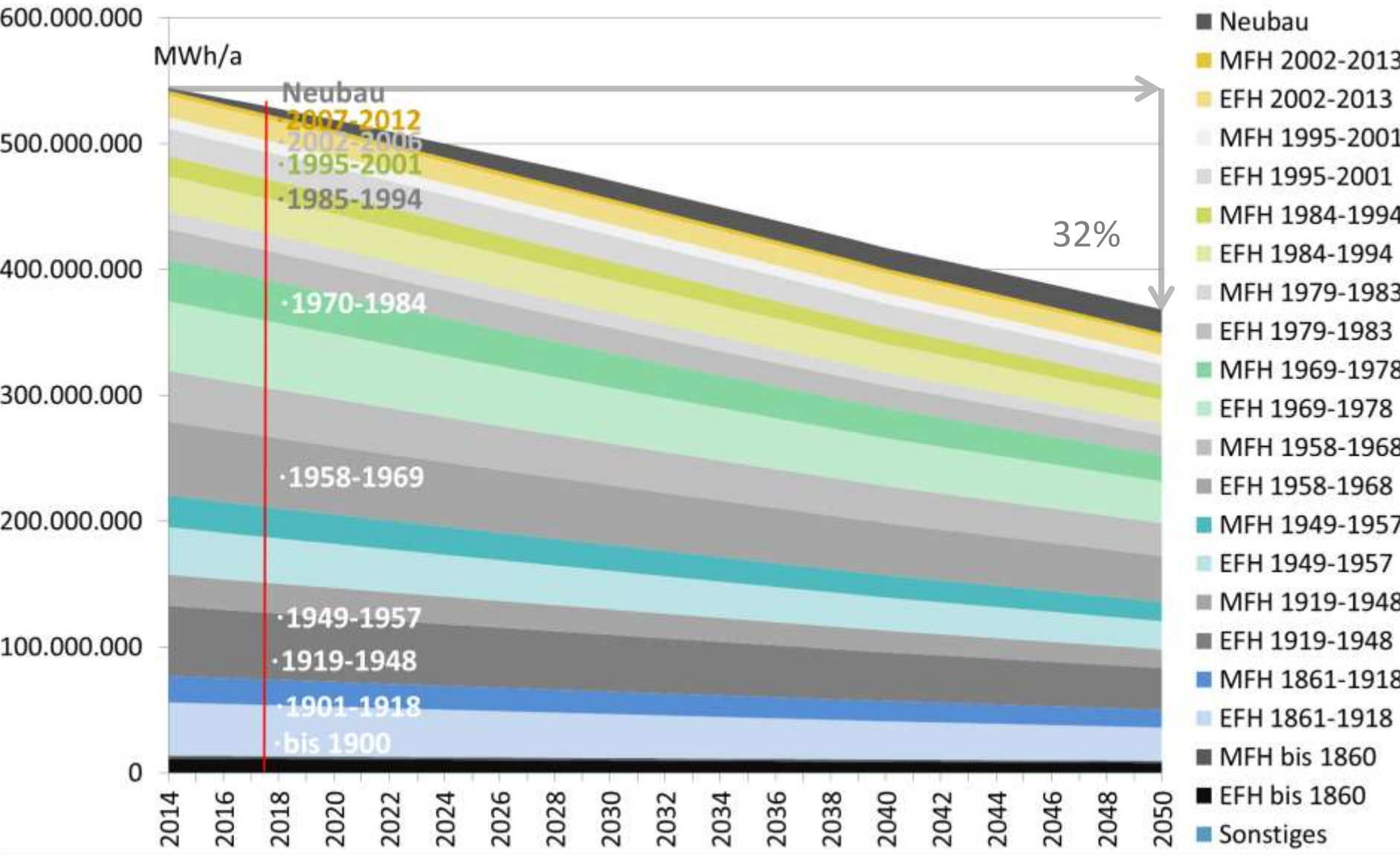
# Verbleibende CO2-Emissionen zur Einhaltung des 2 °-Ziels Remaining CO2-Emissions for adherence to 2 ° - Agreement



Quelle/Source: basierend auf / based on: Wunsch, M.: Zukunft der KWK und Fernwärme – Kassel 06/2016  
Schulze Darup 2018

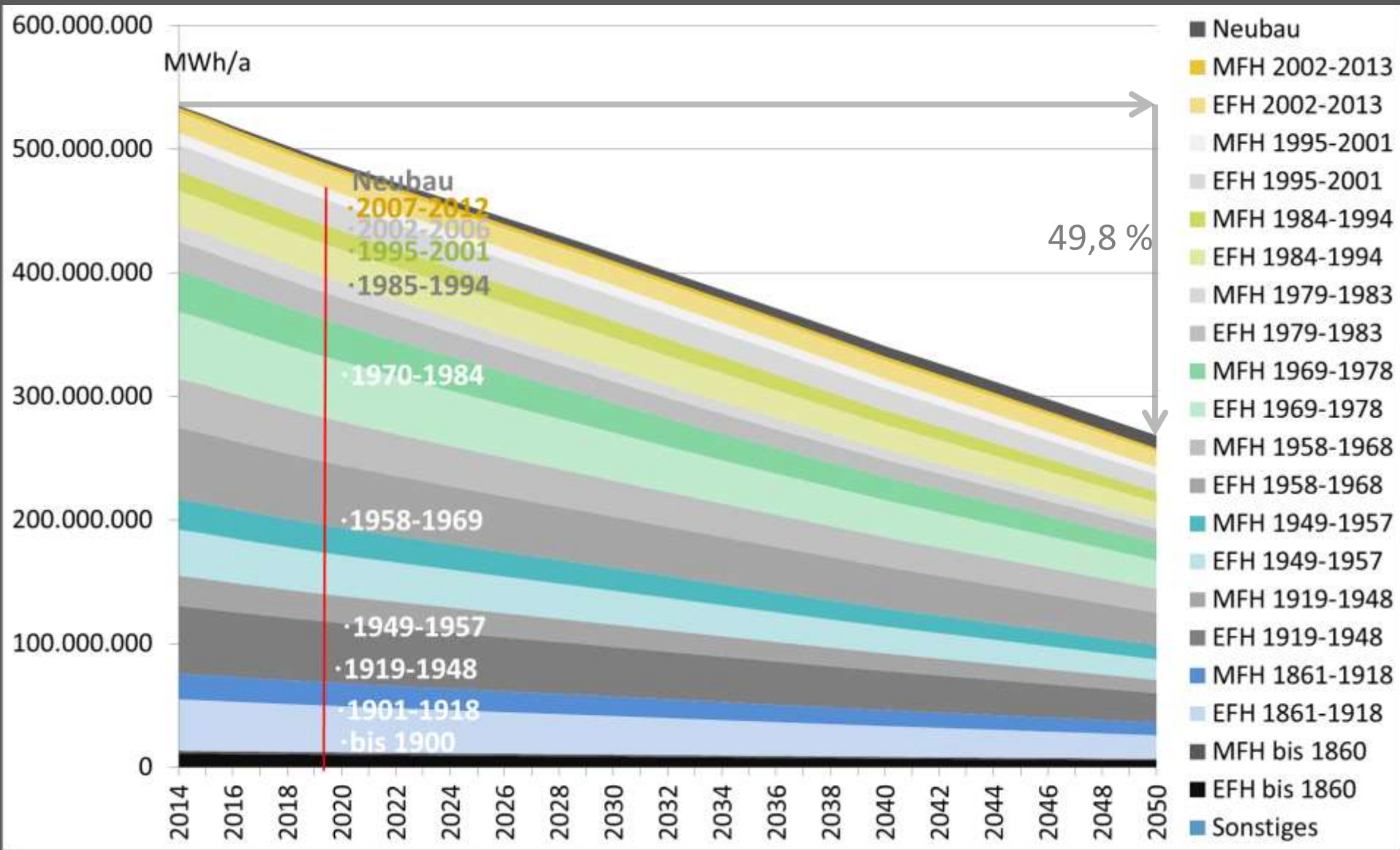
# Heizenergiebedarf – Referenzszenario (GER/Wohnen) Sanierungsquote 1,2 %/a

## Final energy heating – Basic scenario (GER/domestic) rate of refurbishment 1,2 %/y



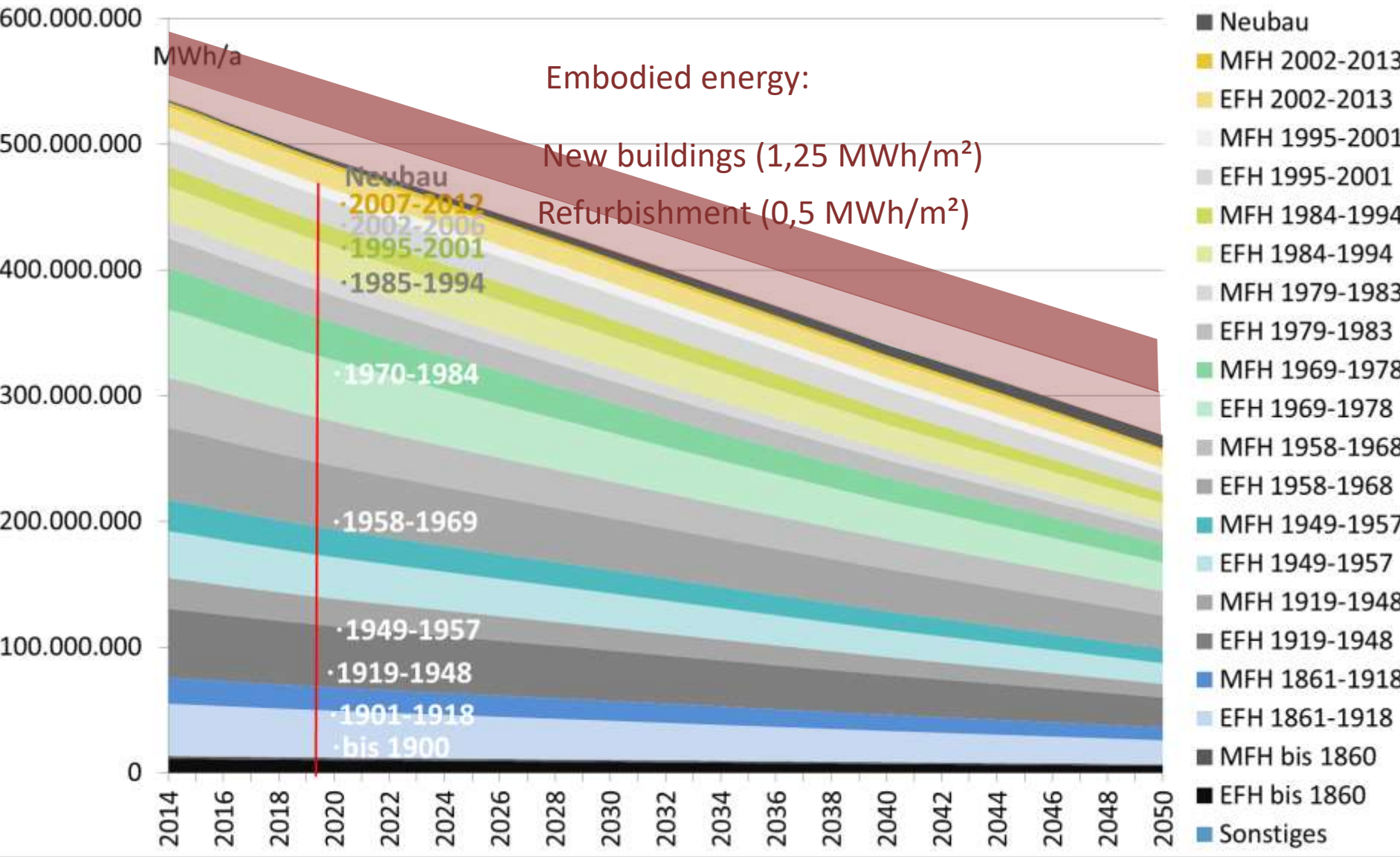
Quelle: DGS / Schulze Darup: Gebäudetypologie und Energieeffizienzstrategie BRD, Berlin 2015

# Heizenergiebedarf – Zielszenario (GER/Wohnen) Sanierungsquote 1,6 %/a Final energy heating – Target scenario (GER/domestic) rate of refurbishment 1,6 %/y



Quelle: DGS / Schulze Darup: Gebäudetypologie und Energieeffizienzstrategie BRD, Berlin 2015

# Heizenergiebedarf – Zielszenario (GER/Wohnen) Sanierungsquote 1,6 %/a Final energy heating – Target scenario (GER/domestic) rate of refurbishment 1,6 %/y

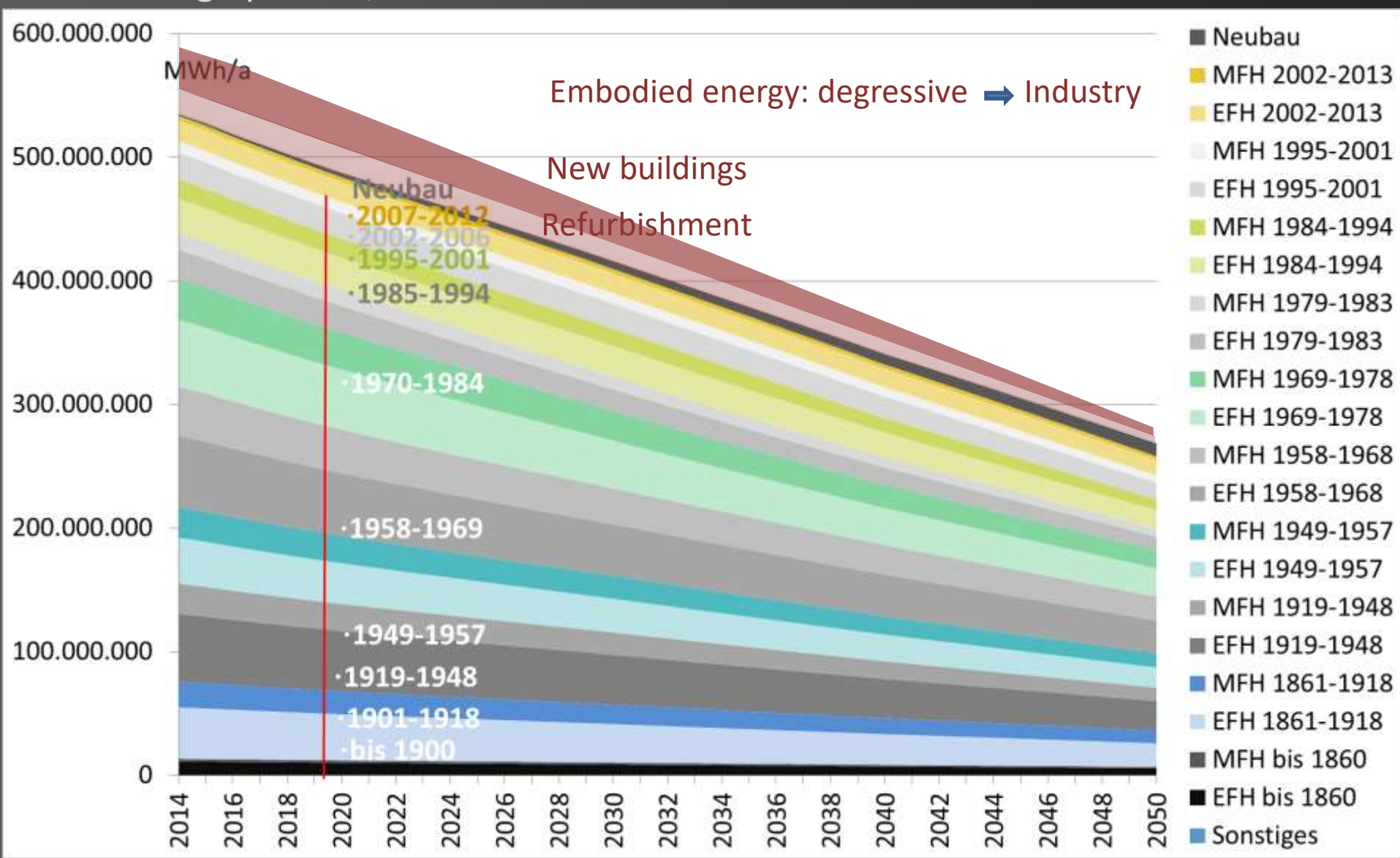


Quelle: DGS / Schulze Darup: Gebäudetypologie und Energieeffizienzstrategie BRD, Berlin 2015 & Schulze Darup 2018



# Heizenergiebedarf – Klimaschutzscenario Wohngebäude BRD

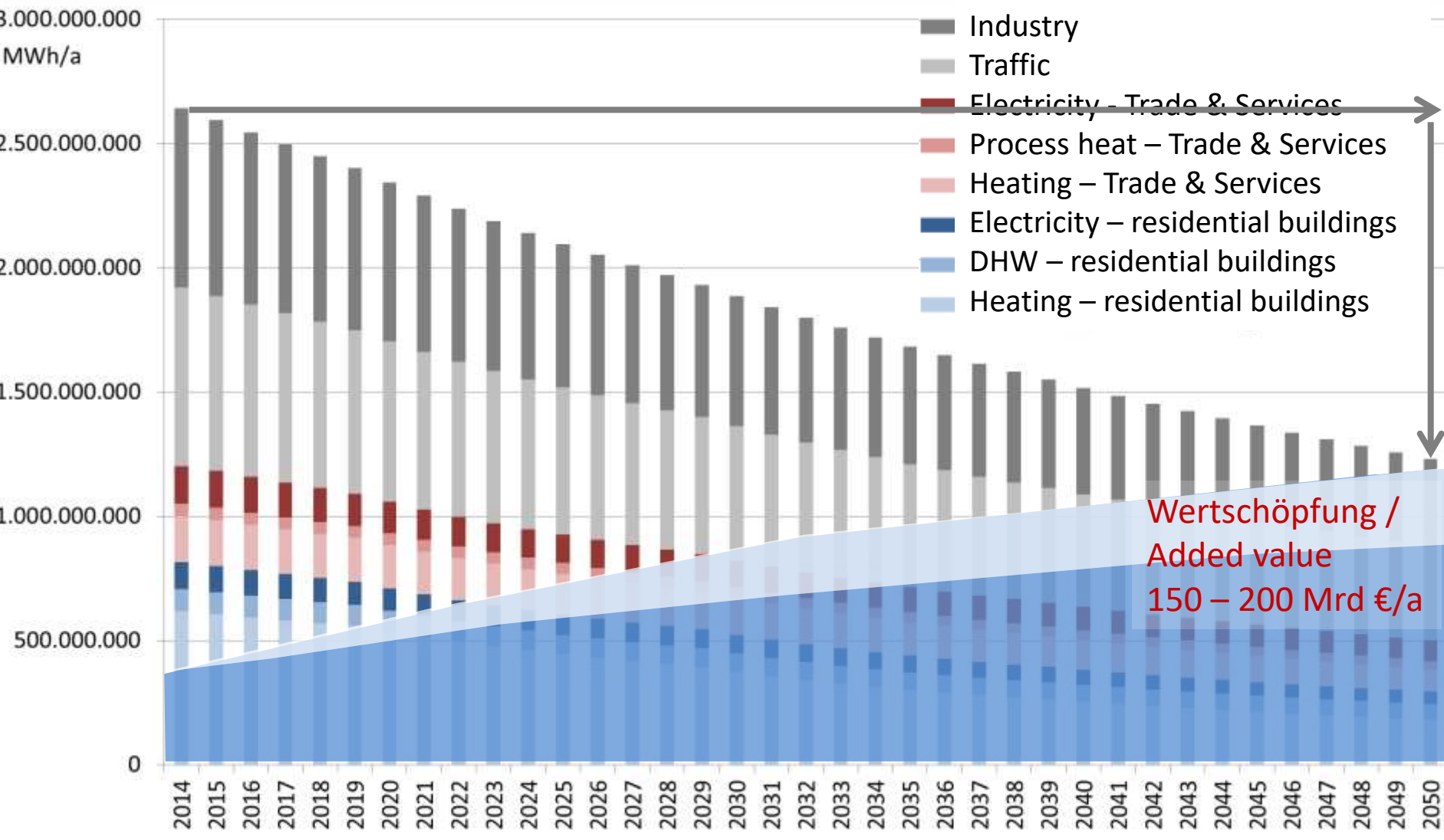
Sanierungsquote 1,6 %





# Effizienz & Erneuerbare Energien bis 2050 (GER)

## Efficiency & Renewable energies until 2050 (GER)



Quelle/Source: DGS / Schulze Darup: Gebäudetypologie und Energieeffizienzstrategie BRD, Berlin 2015