



Cities in Germany and their Emission Targets

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8 December 2010, COP16, Cancún, Mexico





Cities

- Important implementation level
 - i. >50% world population in cities
 - ii. Large share of 'urban' emissions (energy use, transport, waste, production, industrial processes)
- Cities' climate commitments
 - i. Cities Climate Catalogue (ICLEI, City of Copenhagen):
2,867 cities worldwide with emission targets



Do cities realize this potential?

Research questions:

- Have cities adopted targets?
- Do cities control their performance against these targets?
- How do cities perform in terms of
 - i. emission reductions and
 - ii. target achievement?

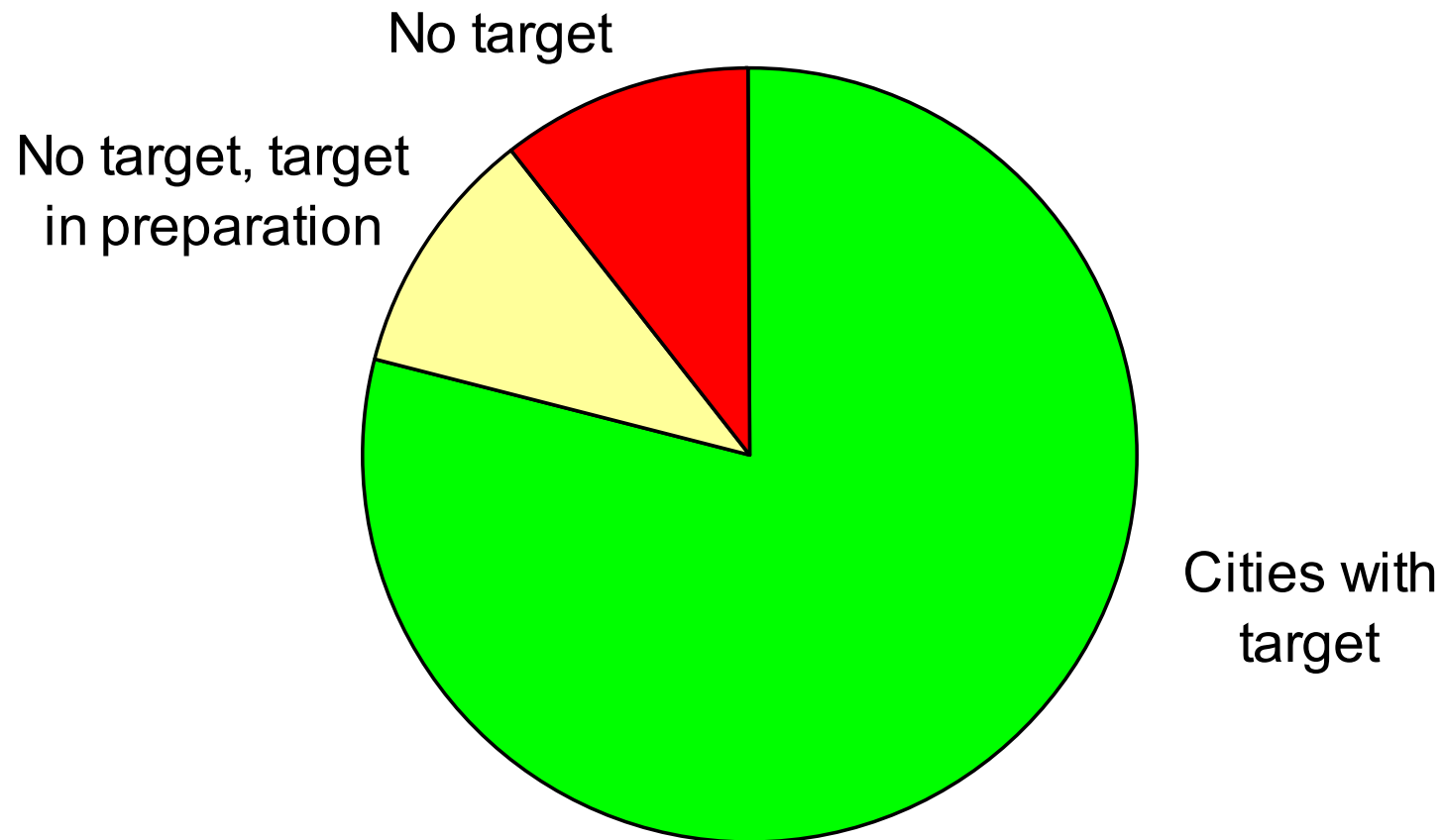


Study design

- Cities in Germany with more than 100.000 inhabitants
 1. Web-based research
 2. Questionnaire survey
- 40 cities replied = 16% of German population, 50% response rate
- Representing all sizes and 13 of Germany's 16 federal states (Laender)

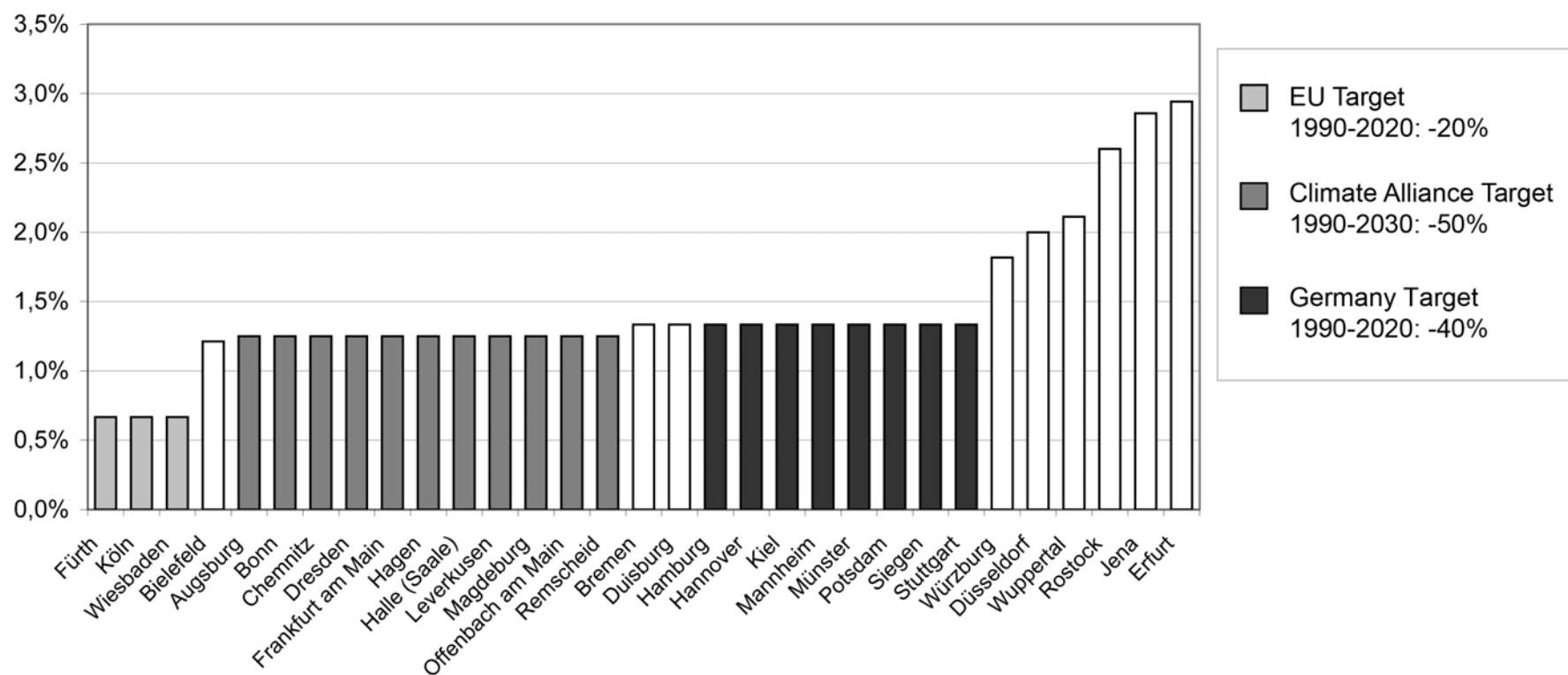


Emission targets



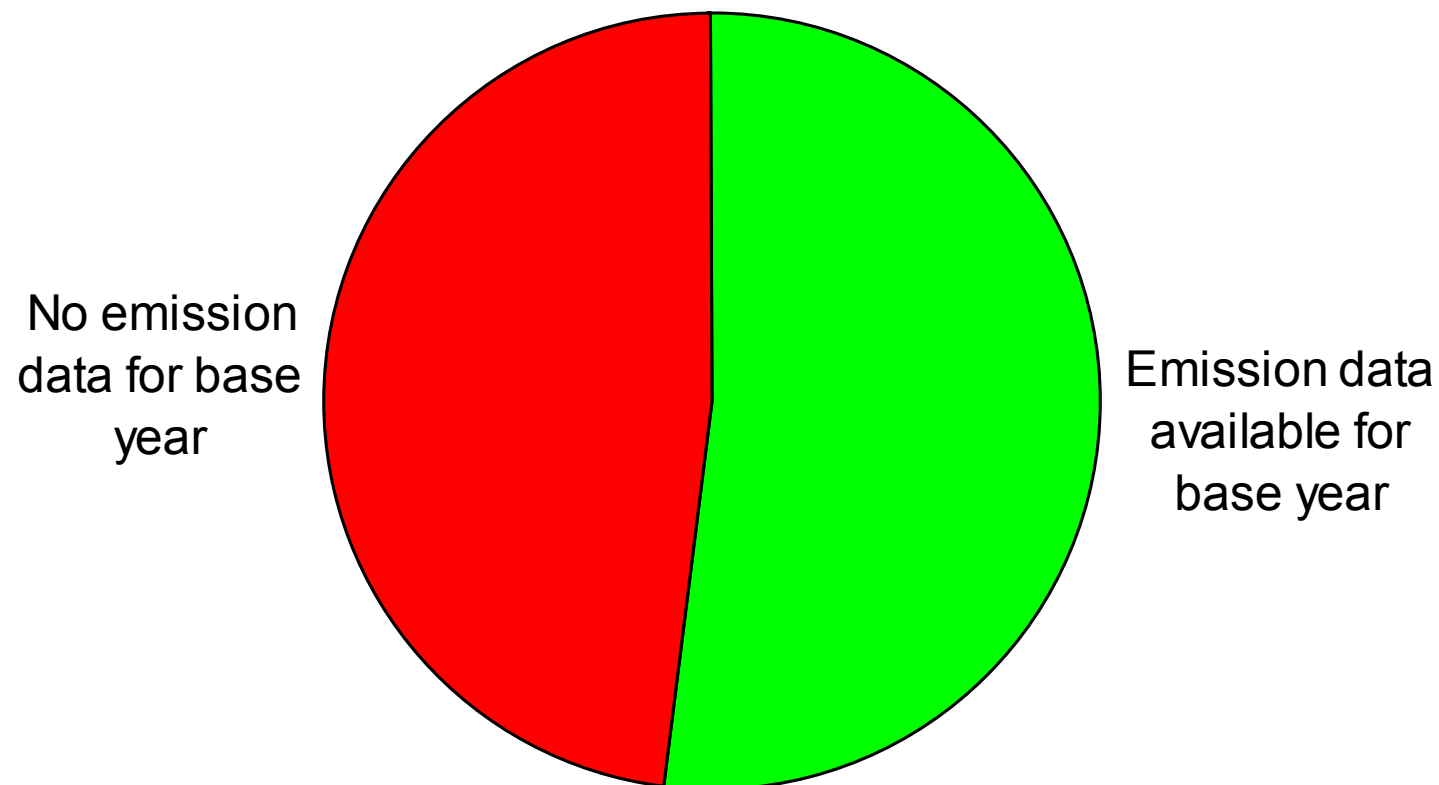


Stringency of emission targets



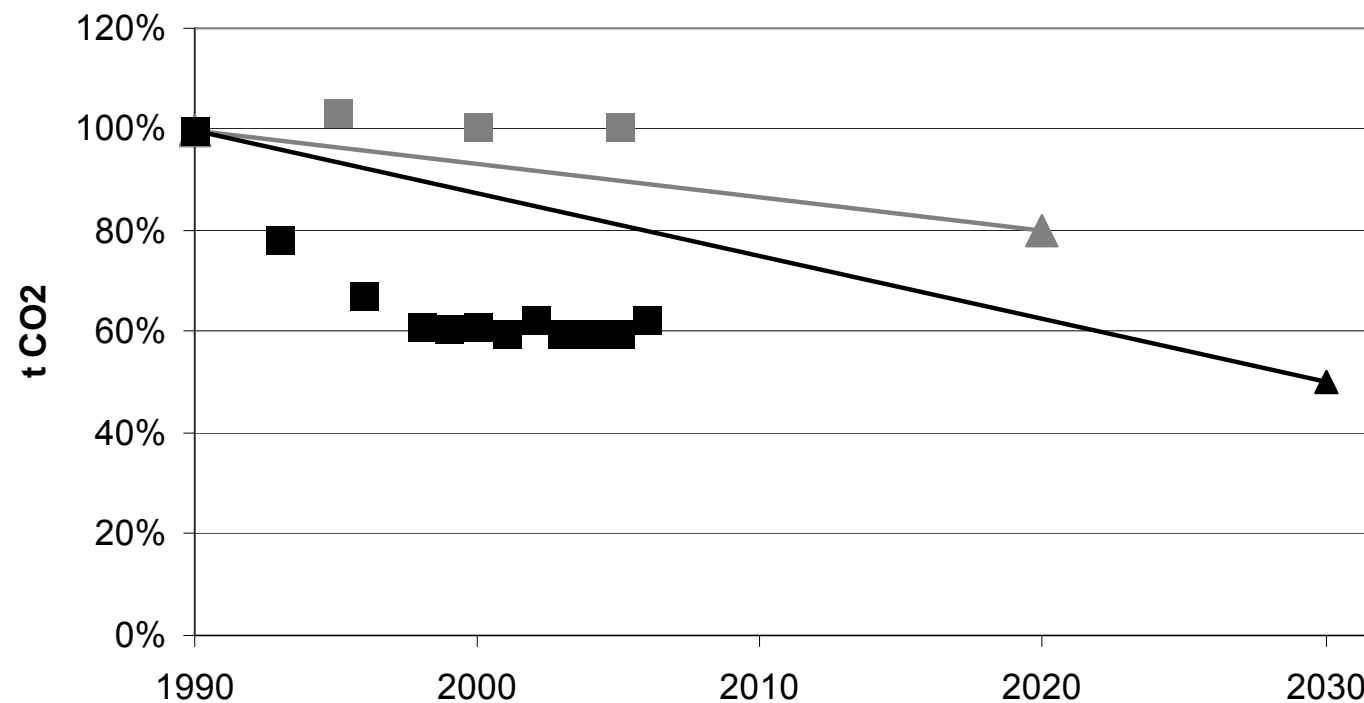


Emission inventories and emission targets...



Target achievement

- City of Fürth and City of Dresden

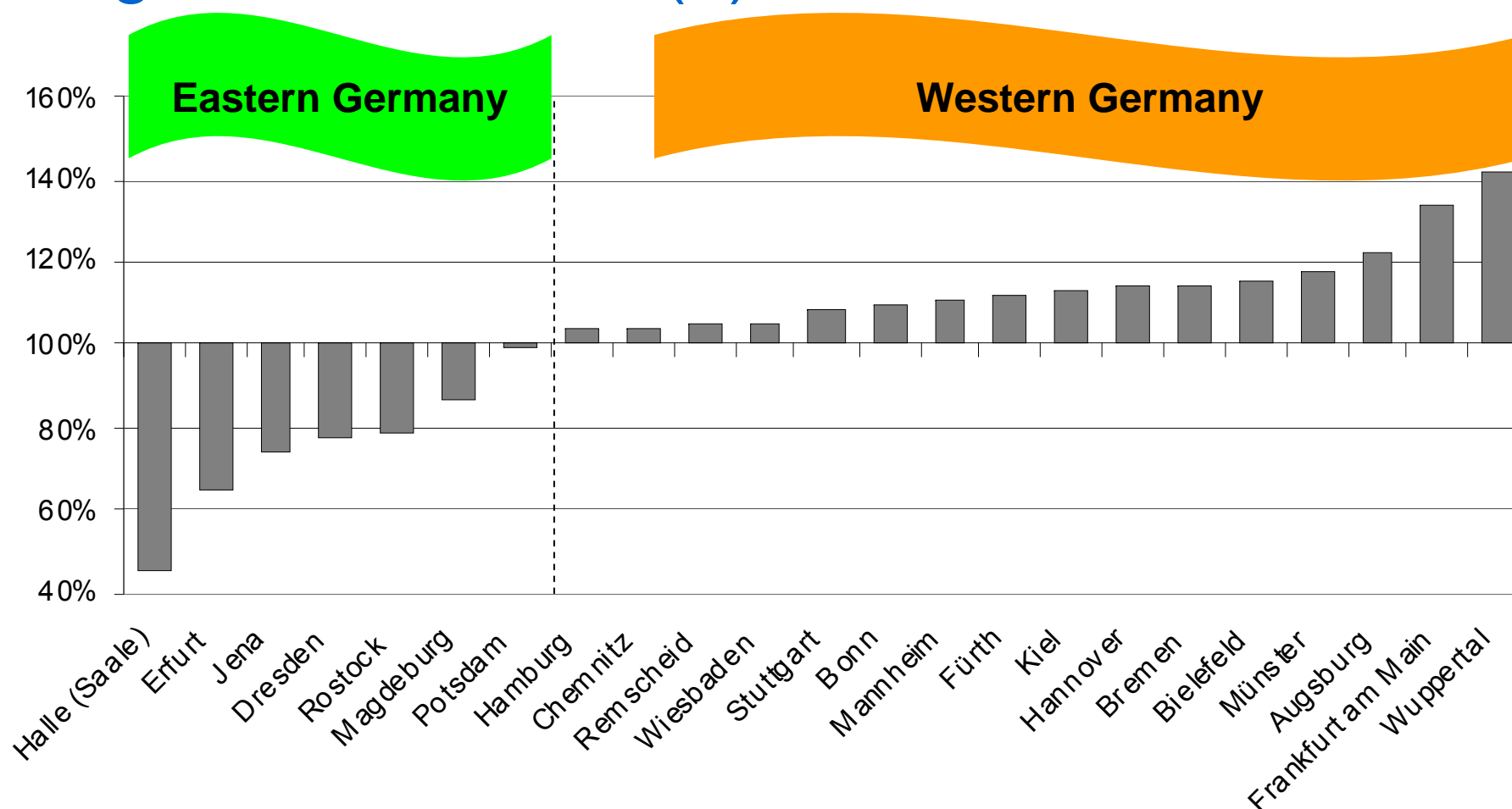


■ Fürth - actual emissions
■ Dresden - actual emissions

▲ Fürth - required reduction pathway
▲ Dresden - required reduction pathway



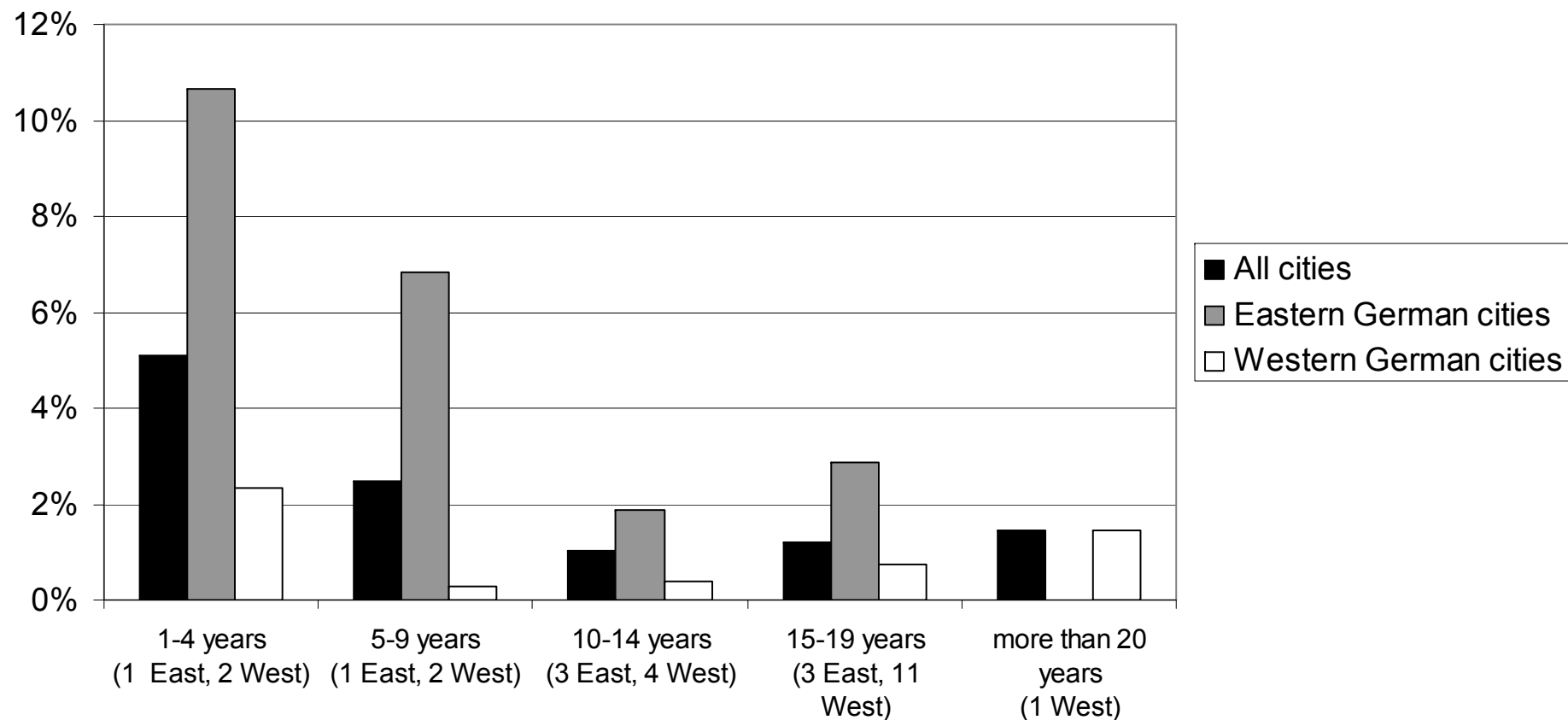
Target achievement (II)



Current emission levels in relation to target reduction pathway



Mitigation performance – over time



Average annual emission reductions in correlation to reporting period



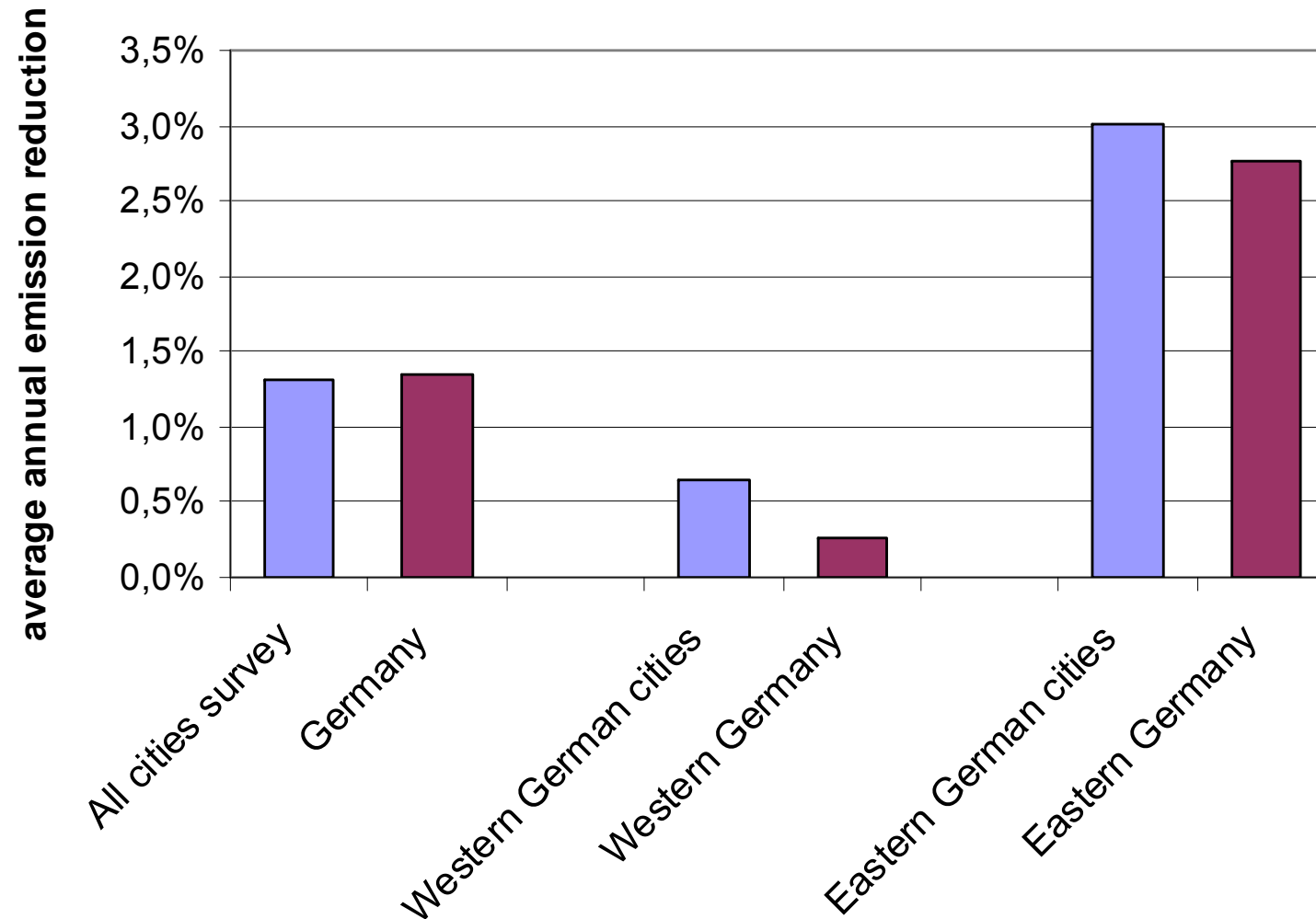
Mitigation performance: declining over time

Possible explanations:

- ‘Low hanging fruits’ in early phase of mitigation
- Controversial policy issues in later phase of mitigation (e.g. human reluctance to change and path dependency of infrastructures)
- Slow down of political enthusiasm
- Declining political support (electoral cycles, new mayors)



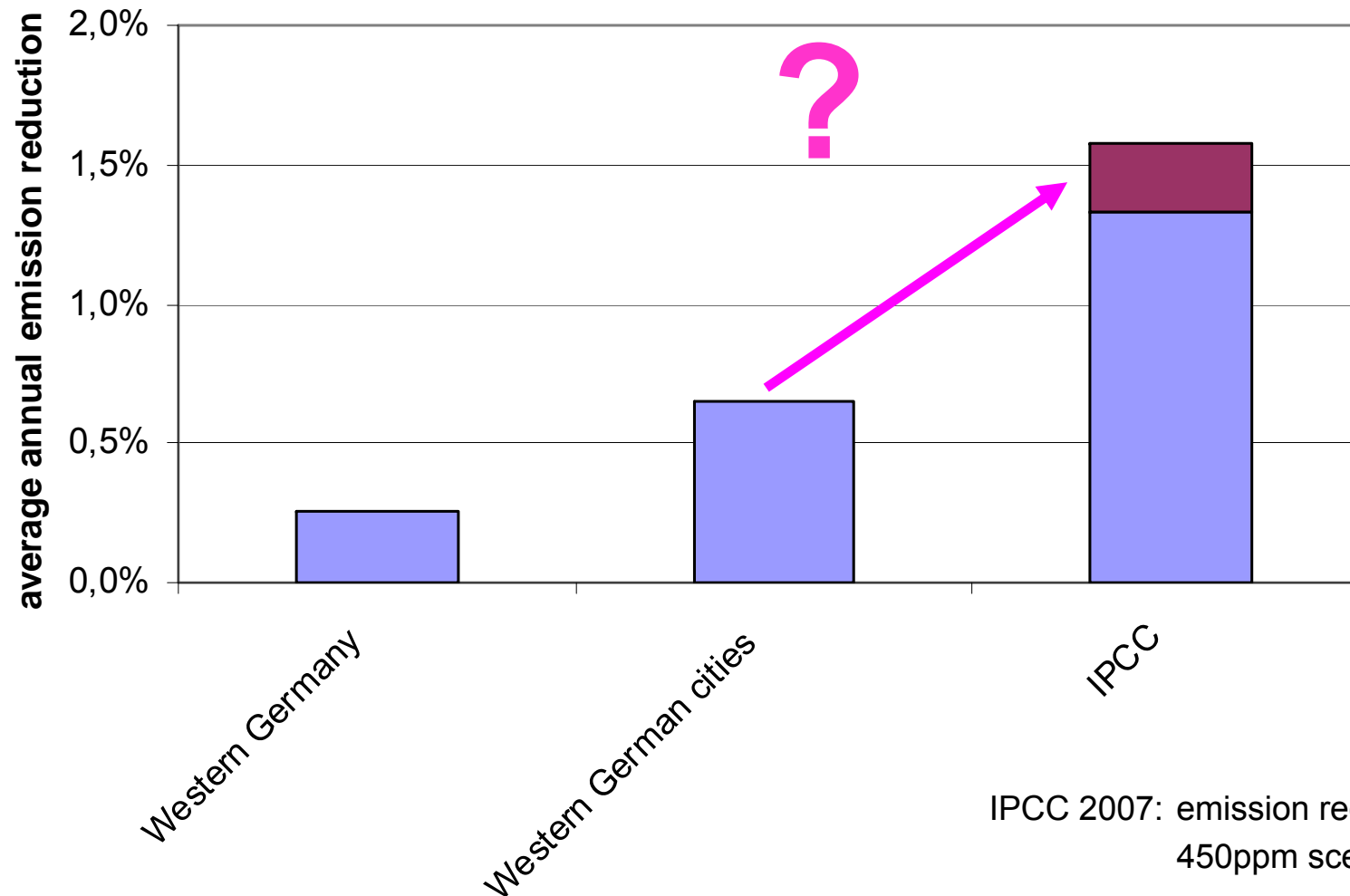
Mitigation performance in comparison



National data from UBA 2009



Mitigation performance in comparison



IPCC 2007: emission reductions required for
450ppm scenario 1990-2050



Summary

- > $\frac{3}{4}$ cities have adopted emission targets
- 80% of these cities: some emission reporting – but:
- almost 50% of cities no base year emission data
- No city in Western Germany on course to reach target
- 7 Eastern German cities on course (role of wall-fall profits...)
- Mitigation performance far from IPCC ,recommendations‘



Conclusions

Cities:

- i. Evaluate past mitigation practice (and constraints)
- ii. Identify realistic and city-specific mitigation potential
- iii. Revise emission targets
- iv. Proper emission reporting = quality management
→ Gaining credibility (towards local stakeholders, other policy levels)

Other policy levels (incl. city networks):

- i. Uniform methodology for emission reporting → comparability
- ii. Make emission reporting obligatory
- iii. Hand down mitigation targets to cities (e.g. by emission trading scheme)
- iv. Equip municipalities with financial resources



Future Research:

- Smaller cities
- Cities in other countries
- Correlations between mitigation performance and other city characteristics, e.g.:
 - i. Structure (industry, commerce, services)
 - ii. Background of Mayors
 - iii. Political majority in city council
 - iv. Involvement in EU Emission Trading Scheme
 - v. Volume of KfW-funding for building retrofit
 - vi. Specific municipal climate policies



Thank you!

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Journal Article:

„Urban GHG inventories, target setting and mitigation achievements:
How German cities fail to outperform their country”, in: Greenhouse Gas
Measurement and Management, forthcoming 2011







Emission targets – an example:

- The process of target setting (and revision) in Stuttgart

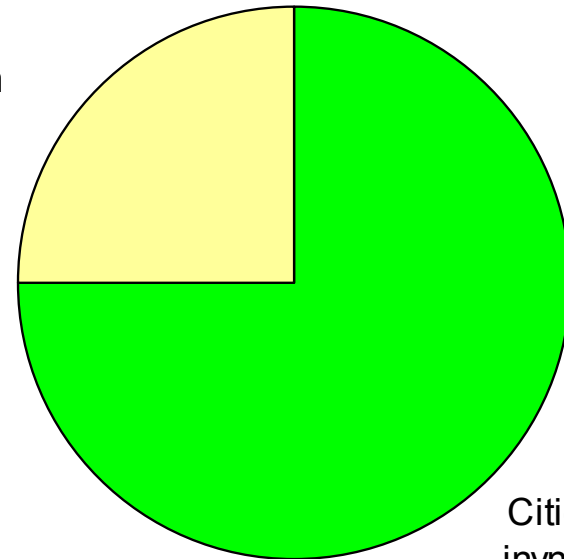
Target	Base Year	Target year	Required yearly reduction (% of base year)	Date of target setting	Process of target setting
-30%	1994	2005	-2.73%	1994	Adoption by city council
-50%	1987	2010	-2.17%	1995	By joining Climate Alliance
-10%	2000	2010	-1.00%	2004	Correction of former target by city council (because original target not realistic)
-40%	1990	2020	-1.33%	2009	By fulfilling funding requirement under the 'Energieeffiziente Stadt Programm' of the German Ministry of Education and Research

Source: Wuppertal Institute 2009

Emission inventories

- 80% of cities with emission targets, 25% of cities without emission targets
- Frequency:
 - i. Majority of cities: irregular
 - ii. Group of cities with 5-8 year intervals
 - iii. Some cities annually (→ data quality?)

Cities with
inventories in
preparation



Cities with
invnetories



Emission inventories: overview

