



International Conference

Elements of a Greenhouse Gas Neutral Society

10-11 October 2013, Berlin, Germany

**Local climate protection -
benchmarks, partnerships, guidelines
for local governments**

Hans Hertle, IFEU Heidelberg, Germany



The Institute for Energy and Environmental Research (IFEU) is a non-profit ecological research institute. It was founded in 1978 as an independent center of excellence for environmental research by scientists from the University of Heidelberg. Currently, IFEU has a staff of more than 70, mostly scientists in the fields of biology, chemistry, physics, geography, and engineering.

35th
Anniversary
2013

More than 35
Years of
Experience

www.ifeu.de



Ecornet
Ecological Research Network

Das IFEU-Institut ist Mitglied
im Ecornet (Ecological
Research Network)

Klimaschutz +





IFEU: Different perspectives on environmental impact

Consumption perspective and *Production perspective*

Carbon footprint / Energy Balance of Cities
SEAP

EMAS ... / Industries

LCA Products

Agenda

- History of climate cities action
- Climate Cities Benchmark
- Klimaschutzplaner (Excursus: Allocation of CHP)
- Coaching kommunaler Klimaschutz
- Change Agent Course (Klimaschutzdialog)
- Personal Carbon Footprint

Germans had been shocked by oil embargo 1973



They had been shocked by high price of gasoline but even by the ban on driving
(*Sonntagsfahrverbote auf Autobahnen*)



“Conservation is the quickest, cheapest, most practical source of energy. Conservation is the only way we can buy a barrel of oil for a few dollars.”

Jimmy Carter, “Sweater and Sacrifice” Speech

Climate Cities on the road since the early 1970th

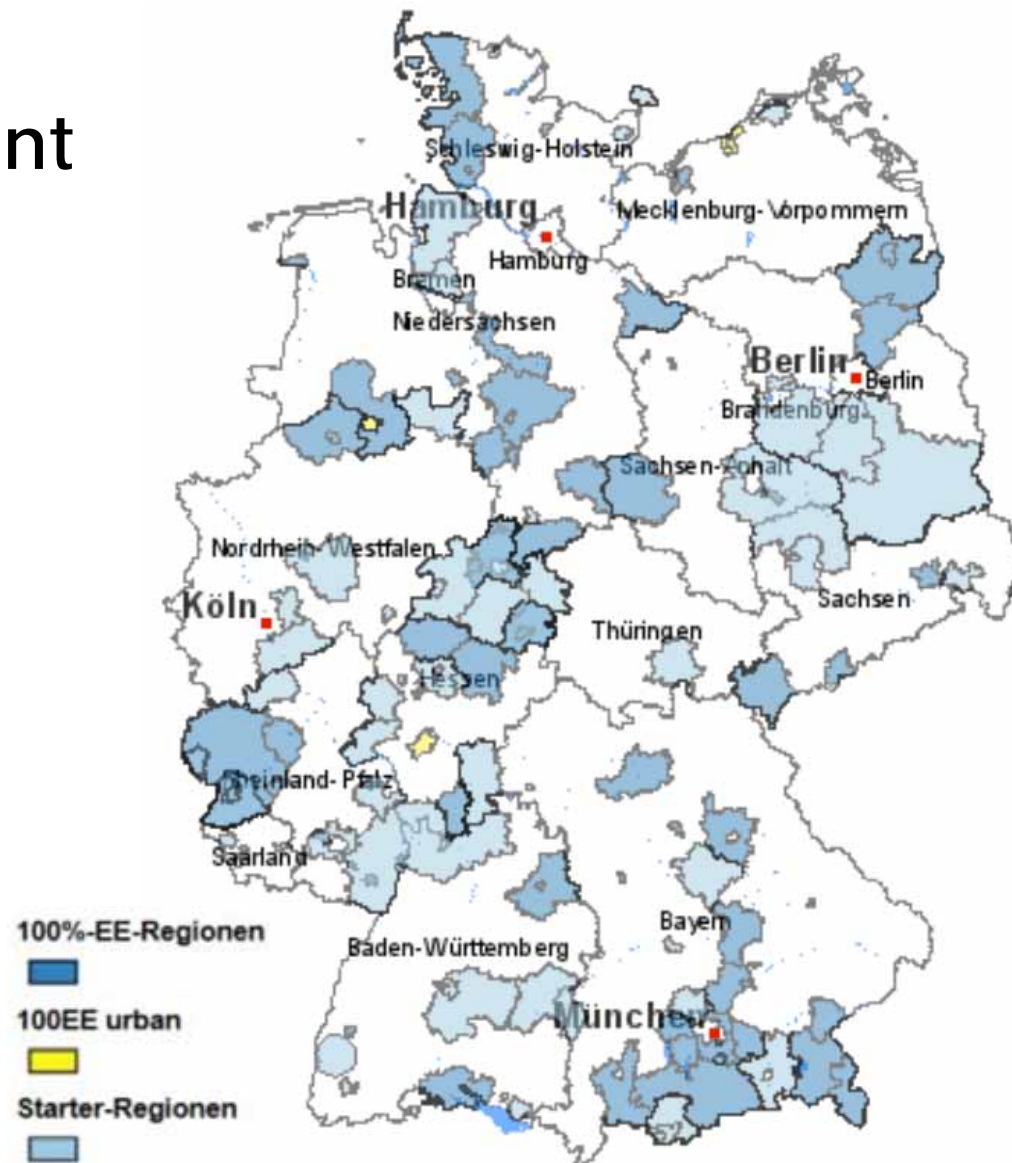
Encouraged by environmental
touched citizen some big cities
startet with efficiency
programs and promoted
renewable energy installation

(and not only shifting from coal
to oil or to natural gas)



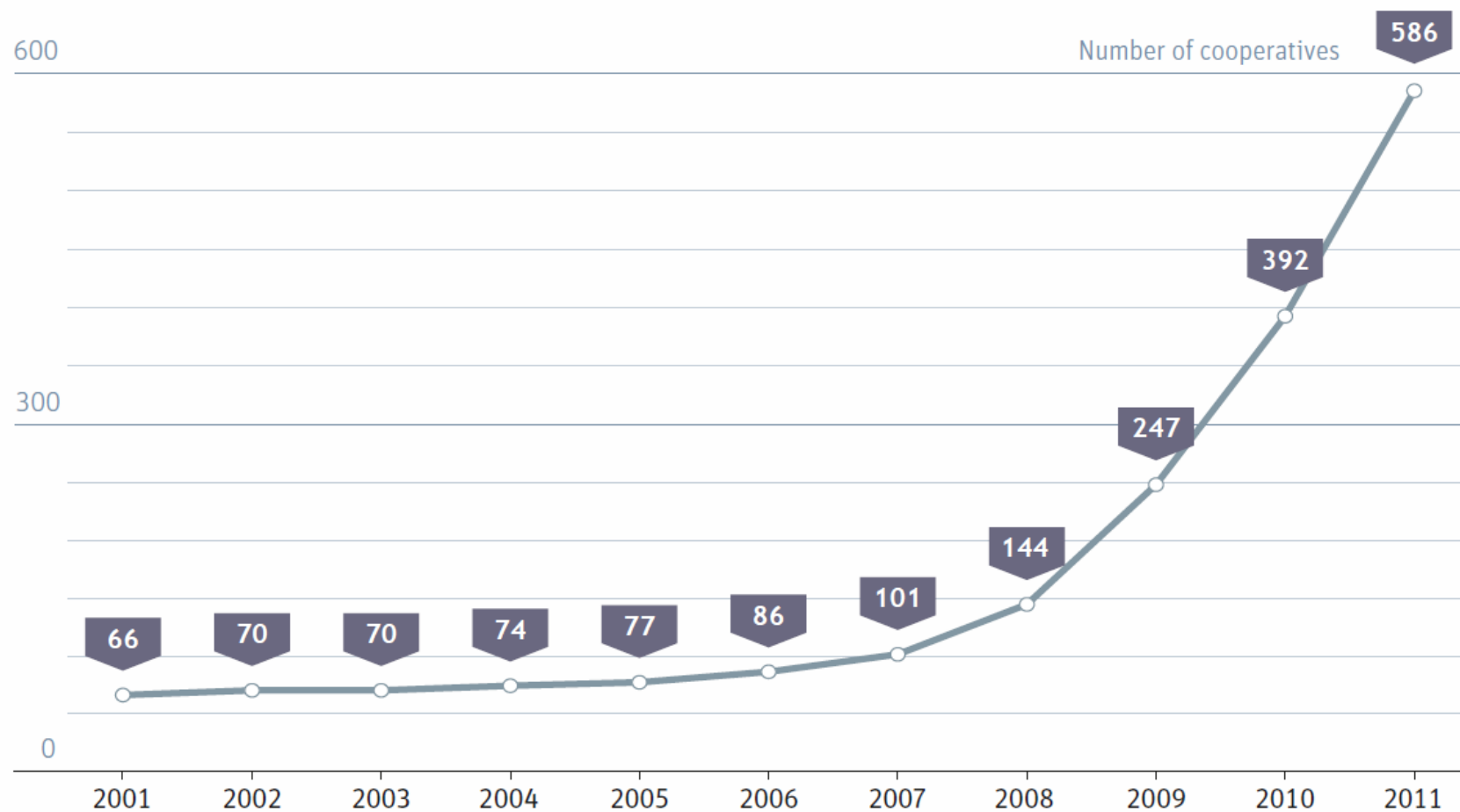
More and more small cities and regions want to switch to 100% renewable energy

(German feed in law started in 2000)

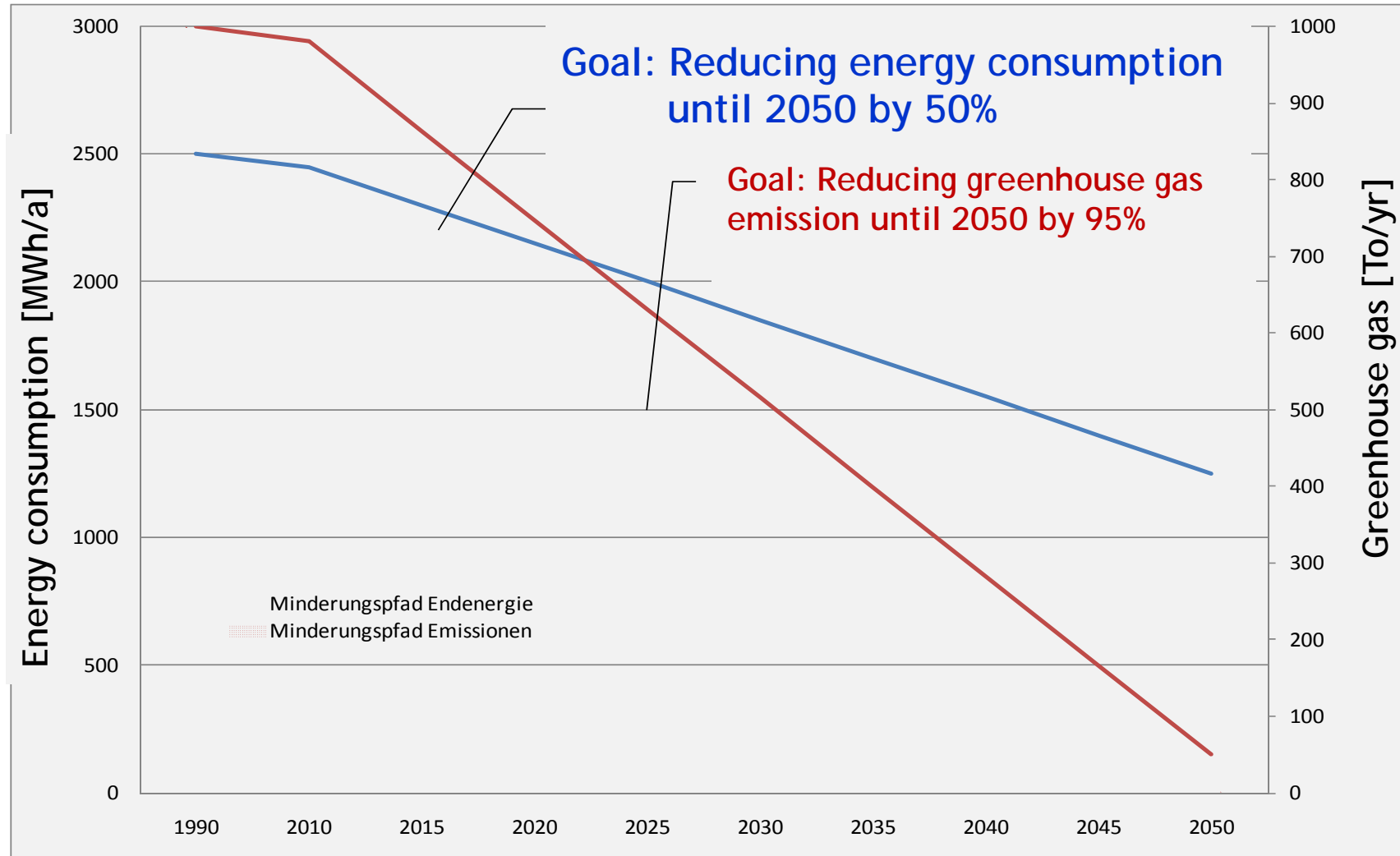


Citizens form cooperatives to drive the energy transition

Number of energy cooperatives in Germany, 2001-2011



Just now: 100% Masterplan > Ambitious goals for cities



ENERGIEWENDE: It seems to work...



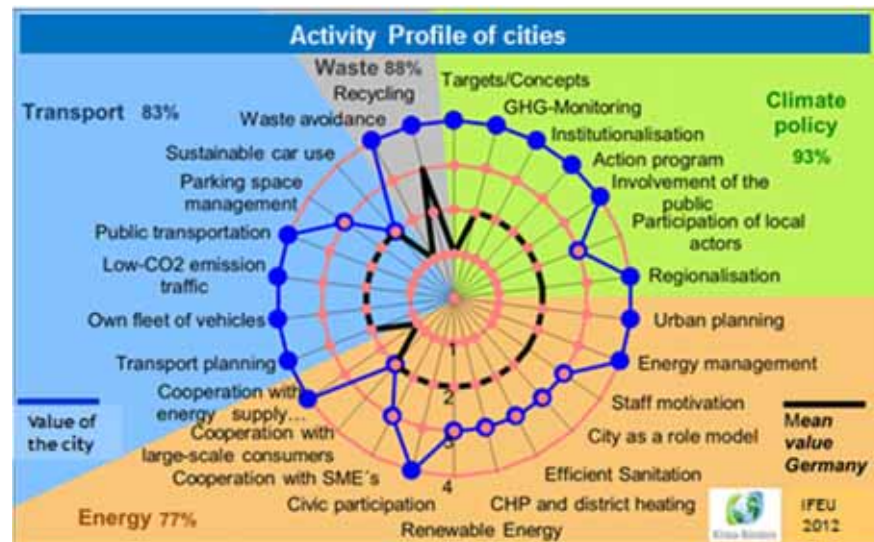
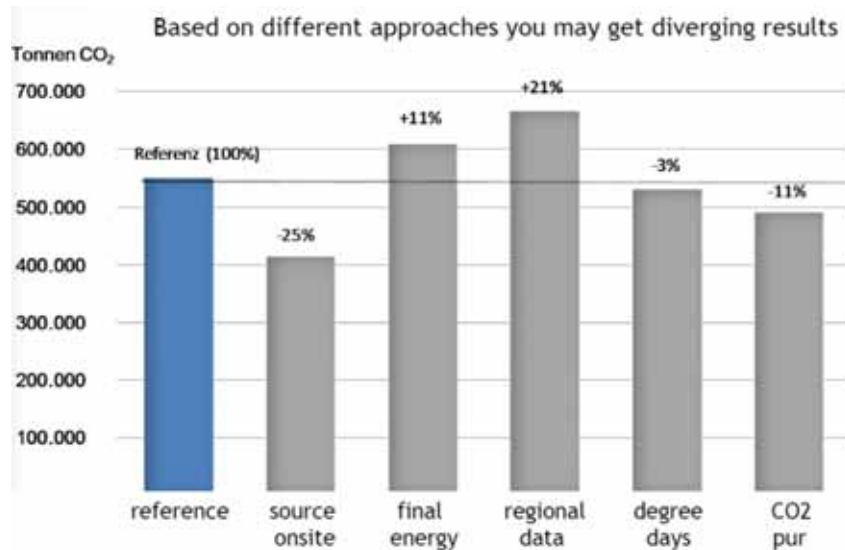
...but it is rather complex



Quelle: IFEU, Fraunhofer IBP, Hochschule Regensburg

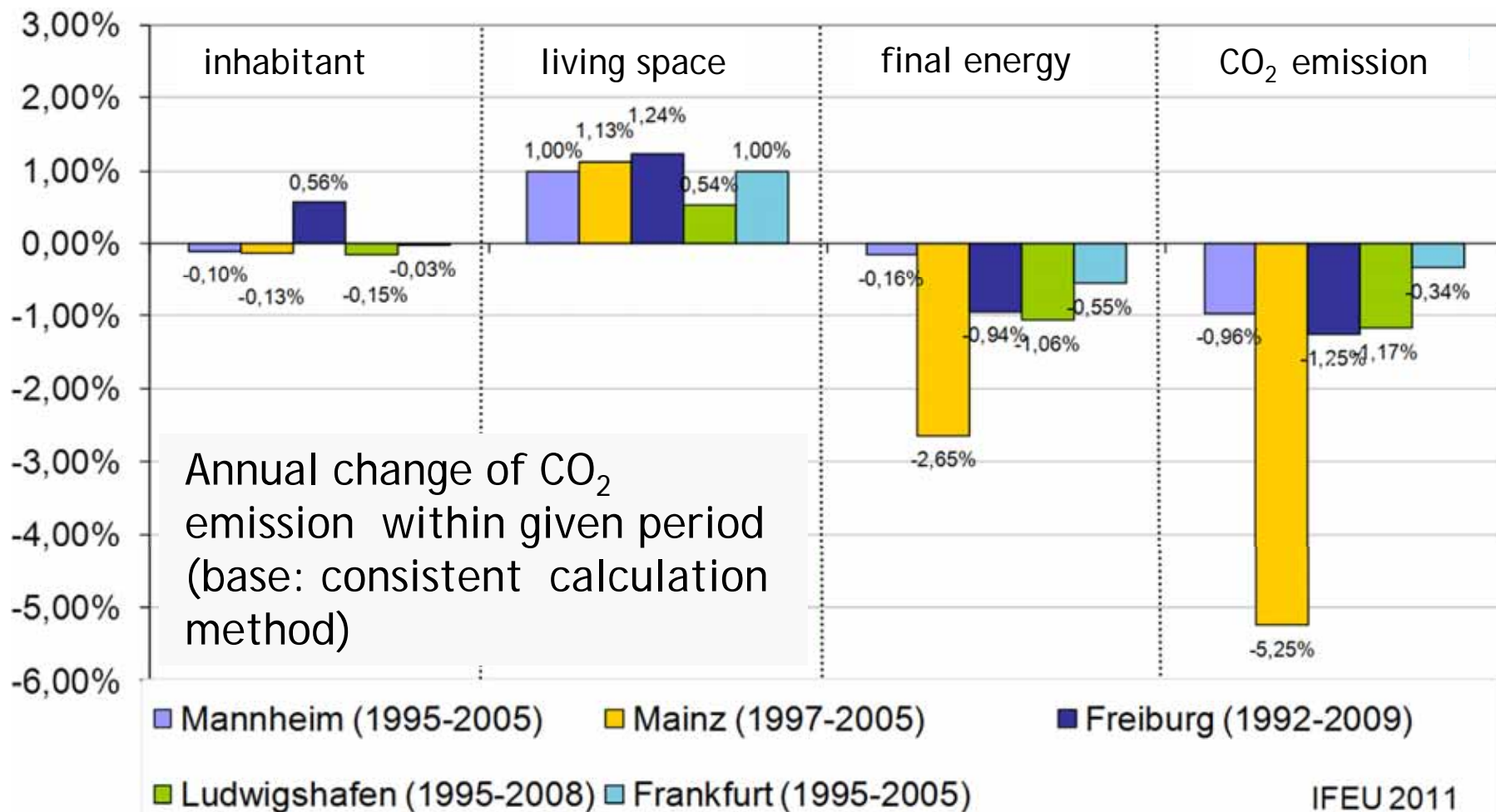
Konzept: Dr. Martin Peht (IFEU); Inhalte: Dr. Martin Peht, Udo Lambrecht, Lars Brischke (IFEU); Prof. Dr. Michael Sterner (Hochschule Regensburg); Norman Gerhardt; Christina Sager, Rolf-Michael Lüking (Fraunhofer IBP); Grafik: Doris Burghardt, Julia Engelhardt (Nimbus Designbüro)

How to compare climate cities action and help them tuning climate measures on multi-plane level?

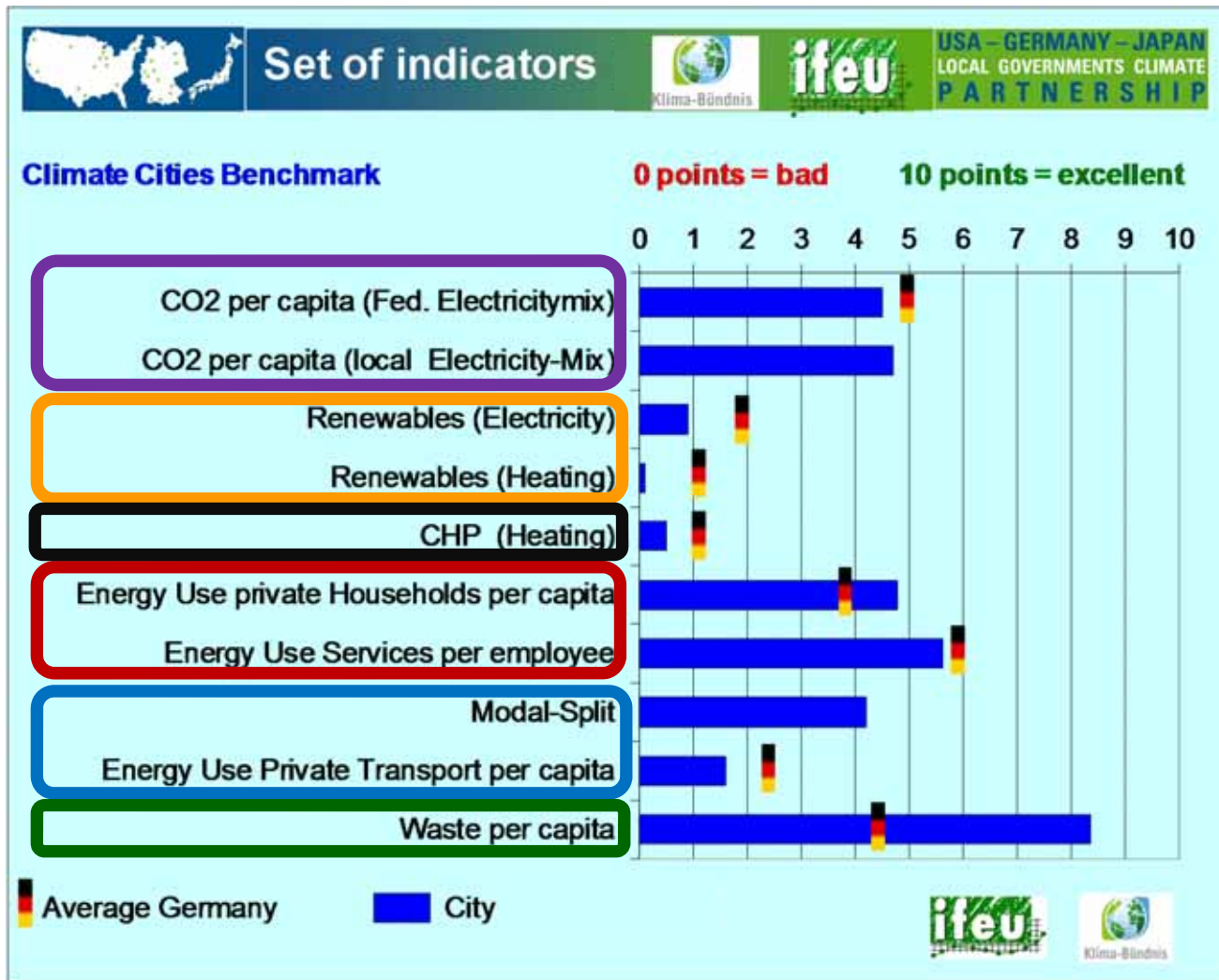


CO₂ emission are caused by different effects

Staring only at CO₂ in total may be not useful



So we need some more indicators



The Set of Indicators covers:

CO₂-Emission
Renewables

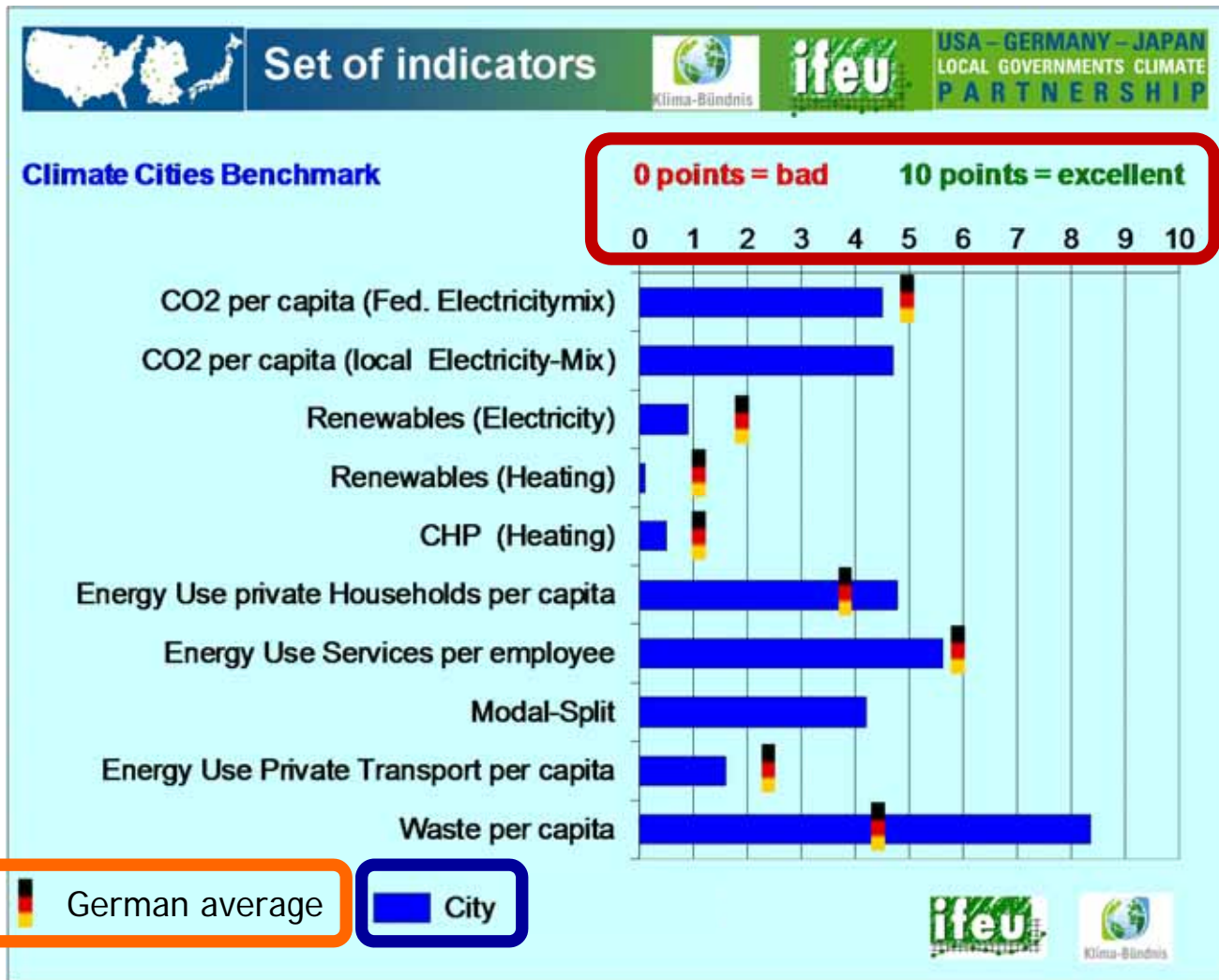
CHP

Efficiency

Mobility

and Reduktion
of Waste

Set of indicators should base on absolute figures

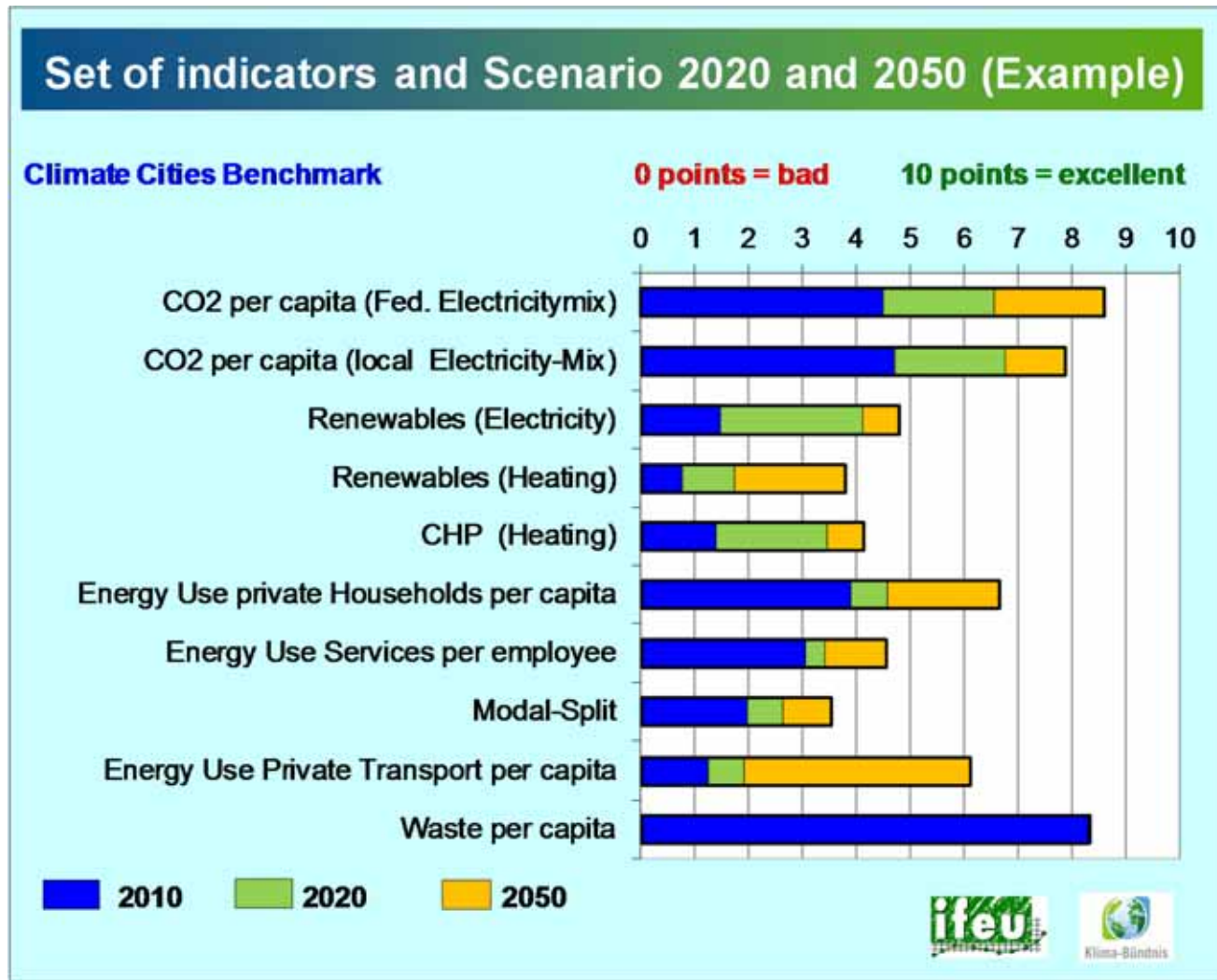


The set shows an absolute scale!
 10 points is excellent (e.g. 0 tons CO₂ or 100% Renewables)

The blue beams indicate the city

The flags indicate German average

Set of Indicators can be used in the long run



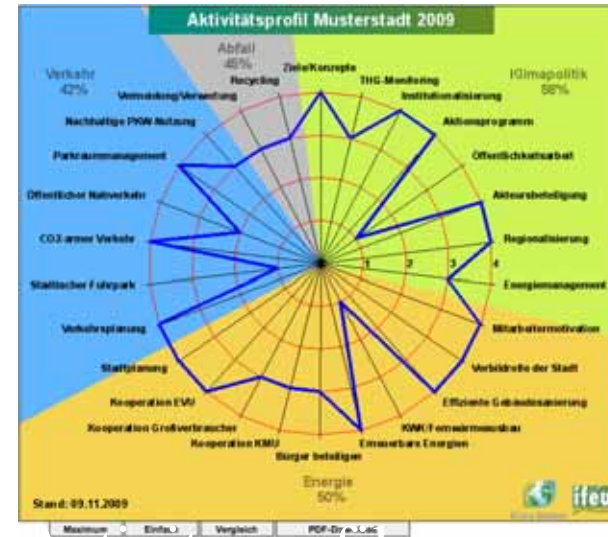
The set of indicators figures out long term goals based on scenarios

It is even useful for 100% Masterplan Cities with ambitious goals until 2050

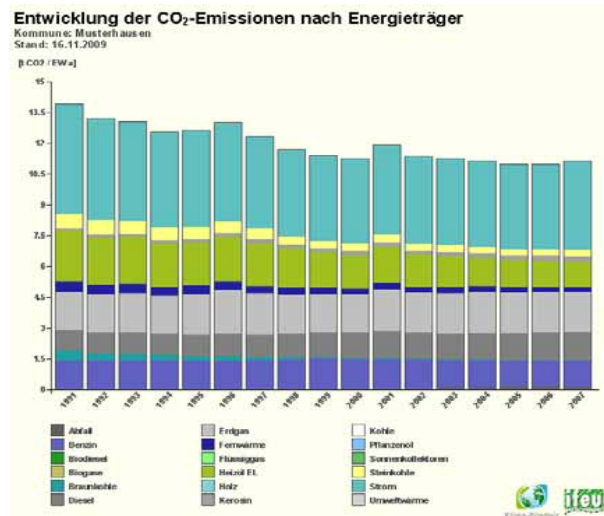
Elements of Climate Cities Benchmark



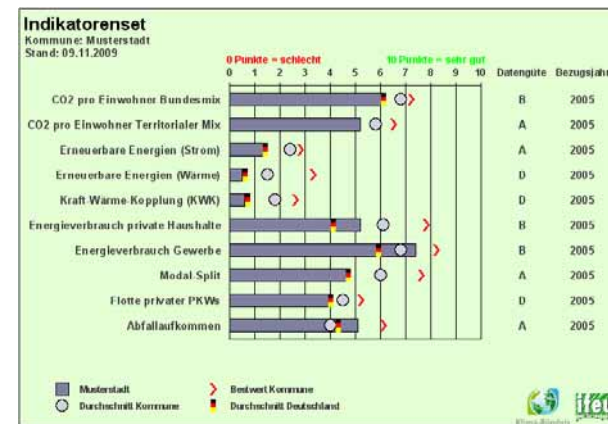
Activity Profile →



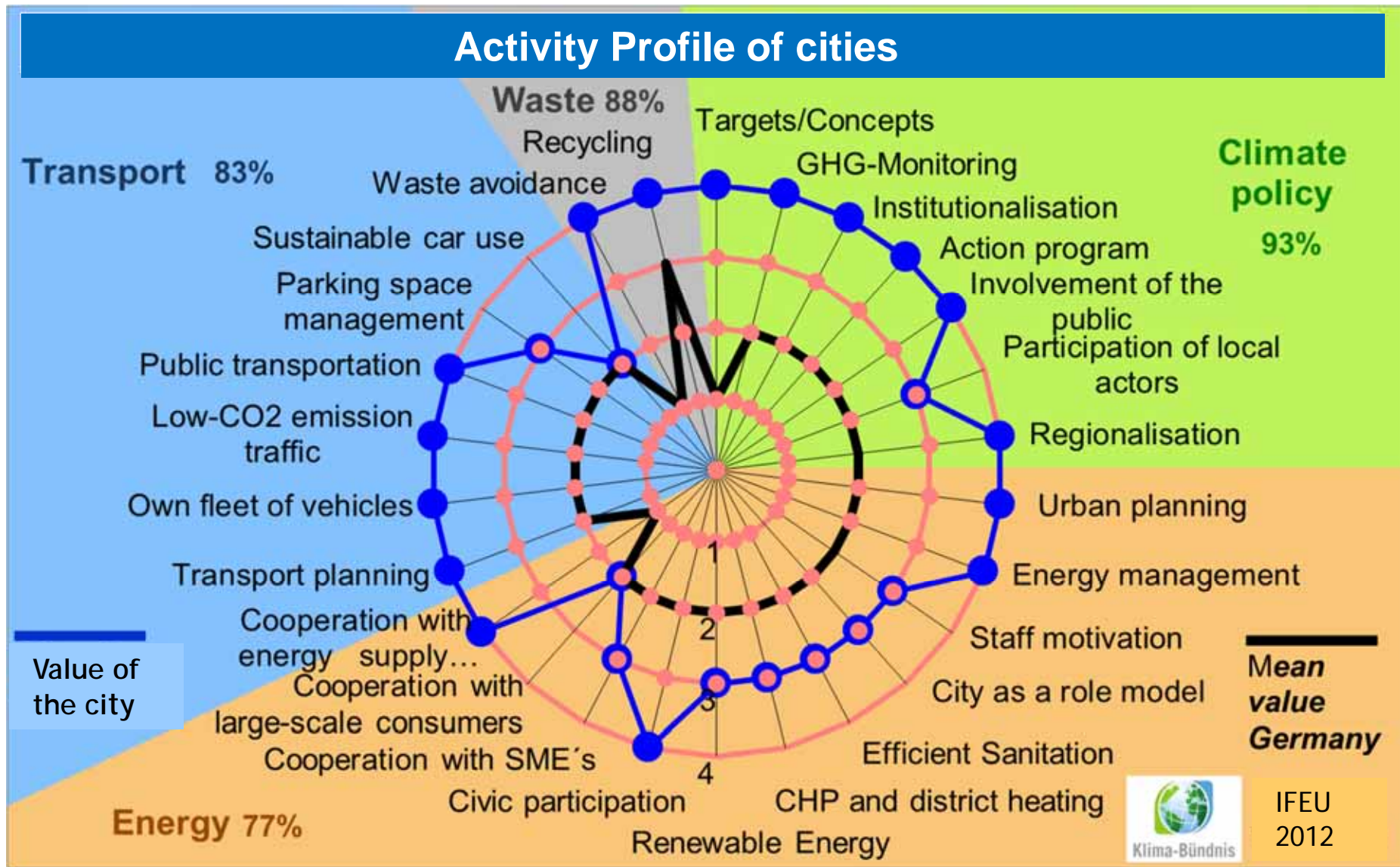
Sponsored by →



← Balance Sheet



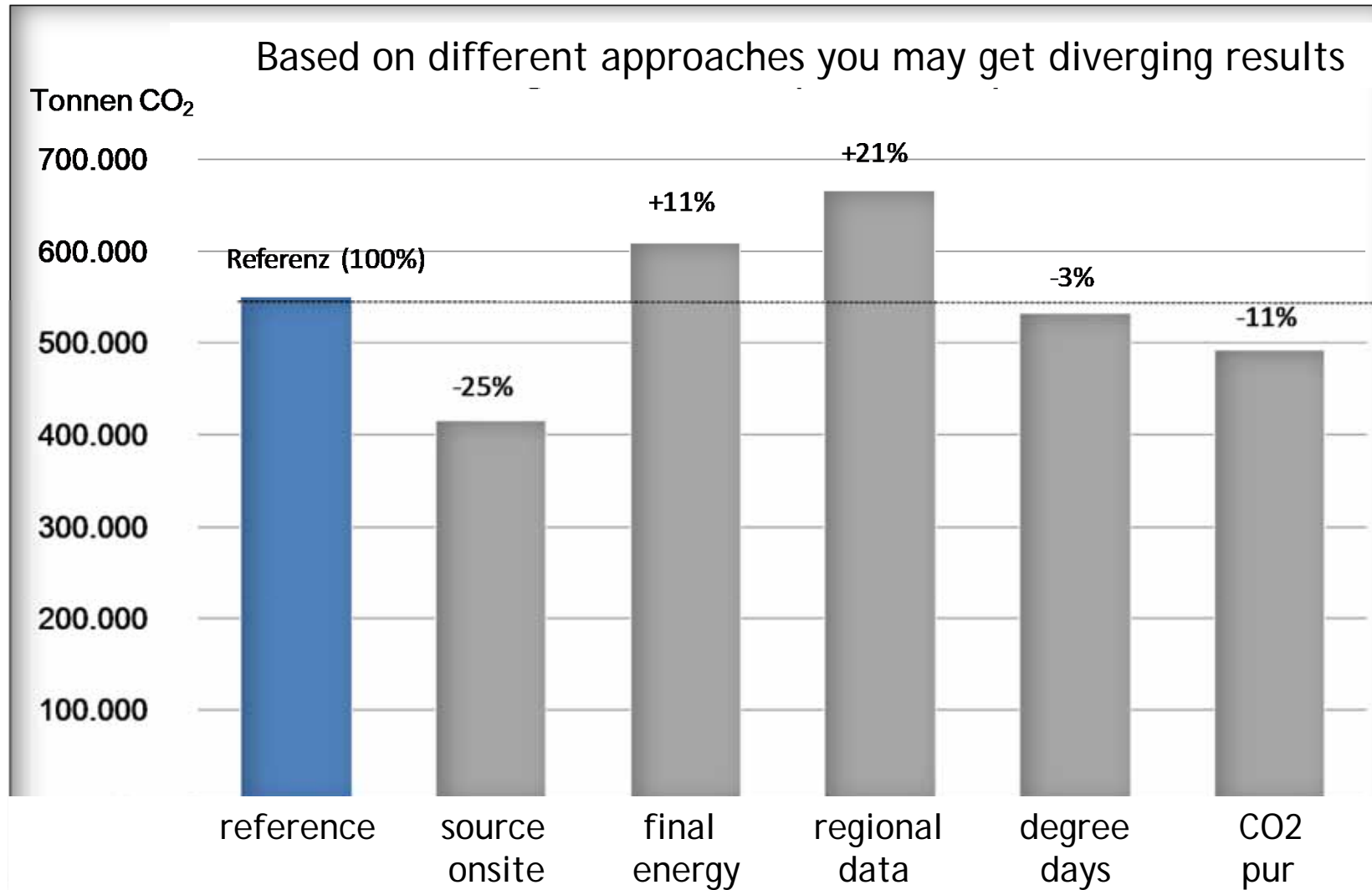
Set of Indicators →



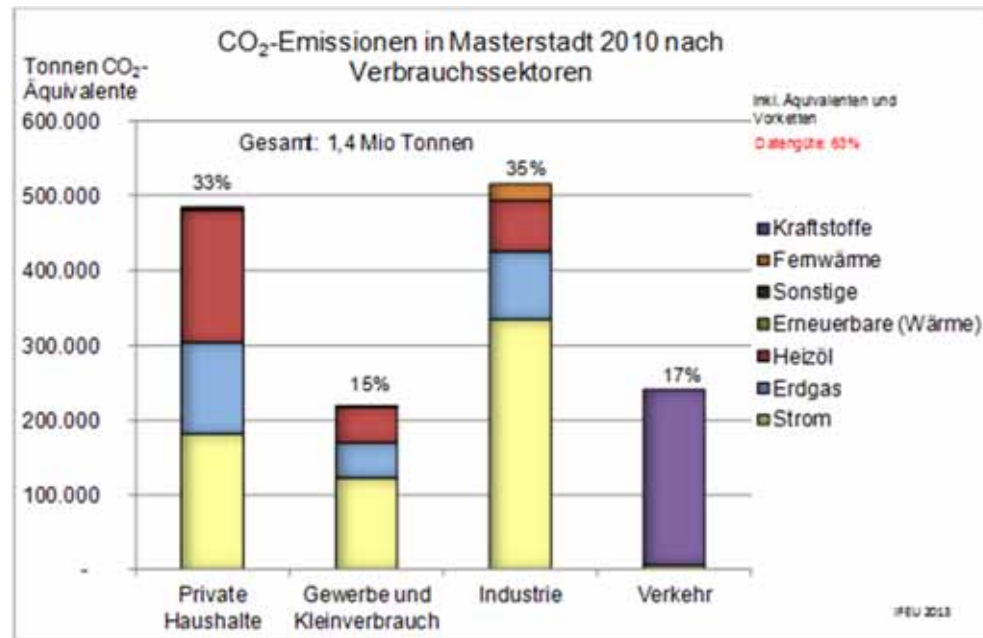
Activity profile: Multiple choice (4 step approach)

A	Climate Policy	1: getting started	2: moving forward	3: forging ahead	4: taking the lead
A1	Adopt targets and develop a concept	develop a general commitment to climate policy <input type="checkbox"/>	add a self committing CO2 reduction target for the city or municipality <input type="checkbox"/>	adopt detailed reduction targets for all relevant sectors <input type="checkbox"/>	develop visions, set high targets (e.g. become a "100 % renewable" community) <input type="checkbox"/>
A2	CO2-Monitoring (measure, verify and report performance)	prepare the implementation of a CO2 inventory and Greenhouse Gas Balance (Check data availability) for municipal facilities or estimation for the municipality <input type="checkbox"/>	accomplish a CO2 inventory for the city according to fuels and multiple sectors including municipal facilities <input type="checkbox"/>	publish a report about the implementation of the action program with data of energy consumption and a rough CO2 inventory of all sectors <input type="checkbox"/>	regularly monitor indicators relevante to the climate through a benchmark system (Climate Cities Benchmark, eea, etc.) <input type="checkbox"/>
A3	Institutionalise your climate policy	determine a responsible officer / department for climate policy <input type="checkbox"/>	inform and involve all relevant departments and decision makers in your climate policy <input type="checkbox"/>	set up a global administrative department for climate protection in the municipality <input type="checkbox"/>	establish a climate protection agency (including city departments and external stakeholders) <input type="checkbox"/>
A4	Set up and implement the action programme (define visions)	establish an action programme including basic resolutions and identify possible measures <input type="checkbox"/>	select priority measures and realize first measures (taking into account previous activities and upcoming developments in your municipality) <input type="checkbox"/>	detail the action program for all sectors relevant to the climate in accordance with the targets set <input type="checkbox"/>	Intensive implementation of the action programm with measures in all sectors (incl. traffic sector) <input type="checkbox"/>
A5	Inform about climate change and your climate policy	organize a public event on climate protection and the local commitment <input type="checkbox"/>	set up an annual campaign on climate change <input type="checkbox"/>	regularly inform and raise awareness for specific target groups in at least one sector <input type="checkbox"/>	elaborate a target group-specific information and communication strategy for target groups in all relevant sectors (incl. Traffic sector) <input type="checkbox"/>
A6	Involve local actors	set up an structures and models for participation and involvement of stakeholders <input type="checkbox"/>	establish a permanent working group / round table on climate policy with citizens, individual target groups and stakeholders <input type="checkbox"/>	enforce structures by carrying out first pilot projects based on active co-operation with citizens, individual target groups and stakeholders <input type="checkbox"/>	set up long term cooperation with private sector partners, stakeholders and individual target groups (e.g. large energy consuming, supply, transportation or waste companies) <input type="checkbox"/>
A7	Open up to the region and initiate common activities	Engagement in international networks for climate protection <input type="checkbox"/>	set up cooperation with neighbouring municipalities to discuss the potential of common activities in the climate sector <input type="checkbox"/>	common planning and implementation of regional climate protection activities <input type="checkbox"/>	set up regional climate action programmes including regular monitoring of energy consumption or CO2 emissions <input type="checkbox"/>

Balance sheet: Lack of harmonized calculation



Harmonized calculation method in progress



„Development of standardized instruments for balancing energy, potential and scenario“

Partner:

Klima-Bündnis e. V.
Frankfurt



Klima-Bündnis



Institut dezentrale
Energietechnologien
IdE Kassel

IdE Institut
dezentrale
Energietechnologien

Time schedule:

Mai 2012 until April 2015

GEFÖRDERT DURCH:



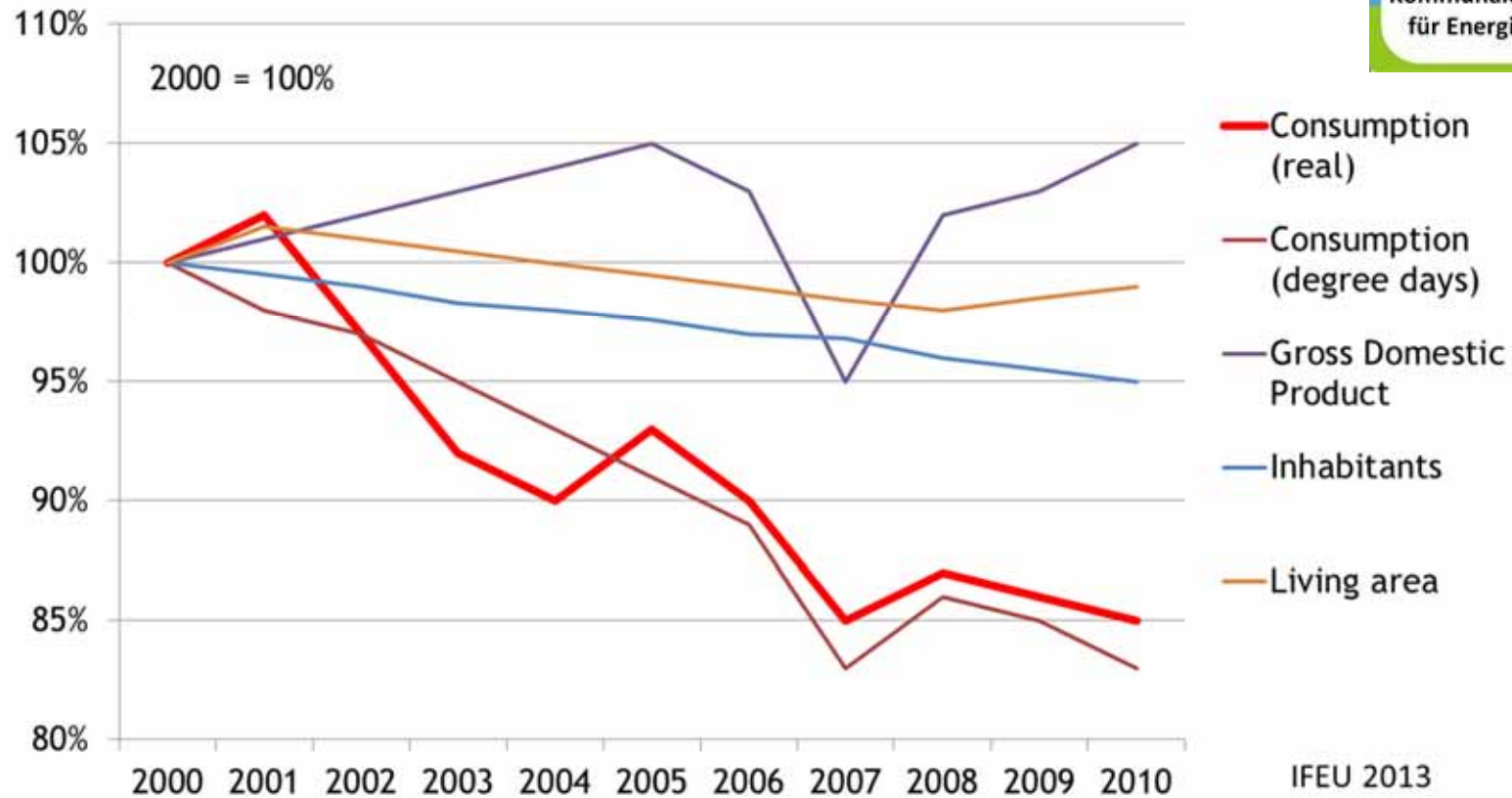
First results (stationary - 9/2013)

- ✓ Basis: Final energy within city boundaries
- ✓ CO₂-equivalent and process chain
- ✓ National grid (cardinal calculation)
- ✓ No climate correction (cardinal calculation)
- ✓ Allocation of CHP by exergetic calculation (see below)
- ✓ Quality of data must be reported
- ✓ For information only:
 - non energetic emission
 - buying green electricity
 - investment outside city boundaries
 - compensation



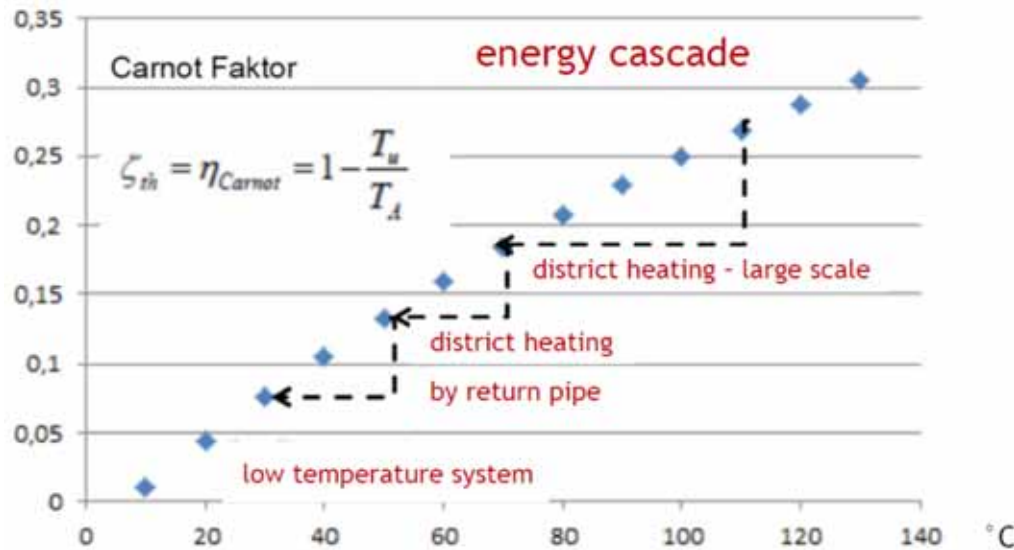
Interpretation on the long run is necessary

Energy use and other data of the city
Example 2000 to 2010



IFEU 2013

Exergetic calculation method: Focus on sustainable energy systems (e.g. LowEx system or energy cascade)



Project: „Exergetische Bewertung kommunaler Strom-Wärme-Systeme“
Commissioned by Umweltbundesamt



Partner: IBP Kassel



und Richtvert Münster

Time frame: 12/2010 - 11/2013

Transformation of district heating systems can be calculated by the exergetic method (Carnot - Methode)
The „finnish“ method is not suitable!

Start up for newcomer „Coaching kommunaler Klimaschutz“



- Smart and quick access
- Practical Guidance by standardized methods and good practice
- Free of charge for all communities
- www.coaching-kommunaler-klimaschutz.net

Partner:

Klima-Bündnis e. V.

Frankfurt



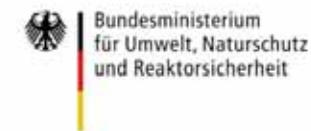
DUH

Deutsche
Umwelthilfe
Ravensburg



Time frame: 2010 - 2012

Supported by



Starter set

Portfolio of measures in 8 fields of action

- Energy management
- Energy production
- Mobility
- Urban planing
- Public relations
- Procurement
- Global responsibility (partnership)
- Funding



Concept light (Schnellkonzept)

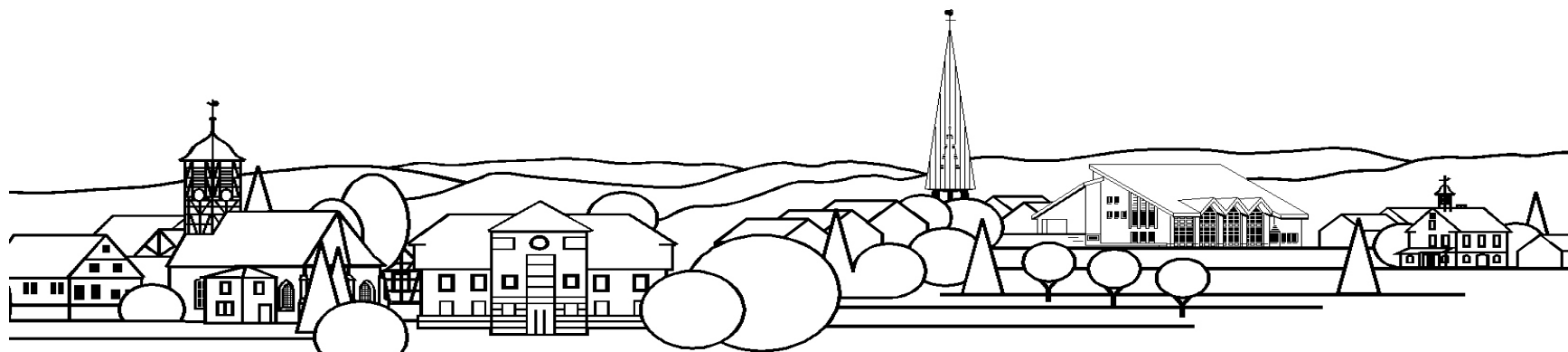
How to manage the concept light

- Opening meeting
- Participation
- External support

Content of the concept light

- Energy balancing
- Saving potencial
- Catalogue of Measures

Tools Checklist, Sample, Survey / link to other device



Tools e.g. Checklist of Status quo

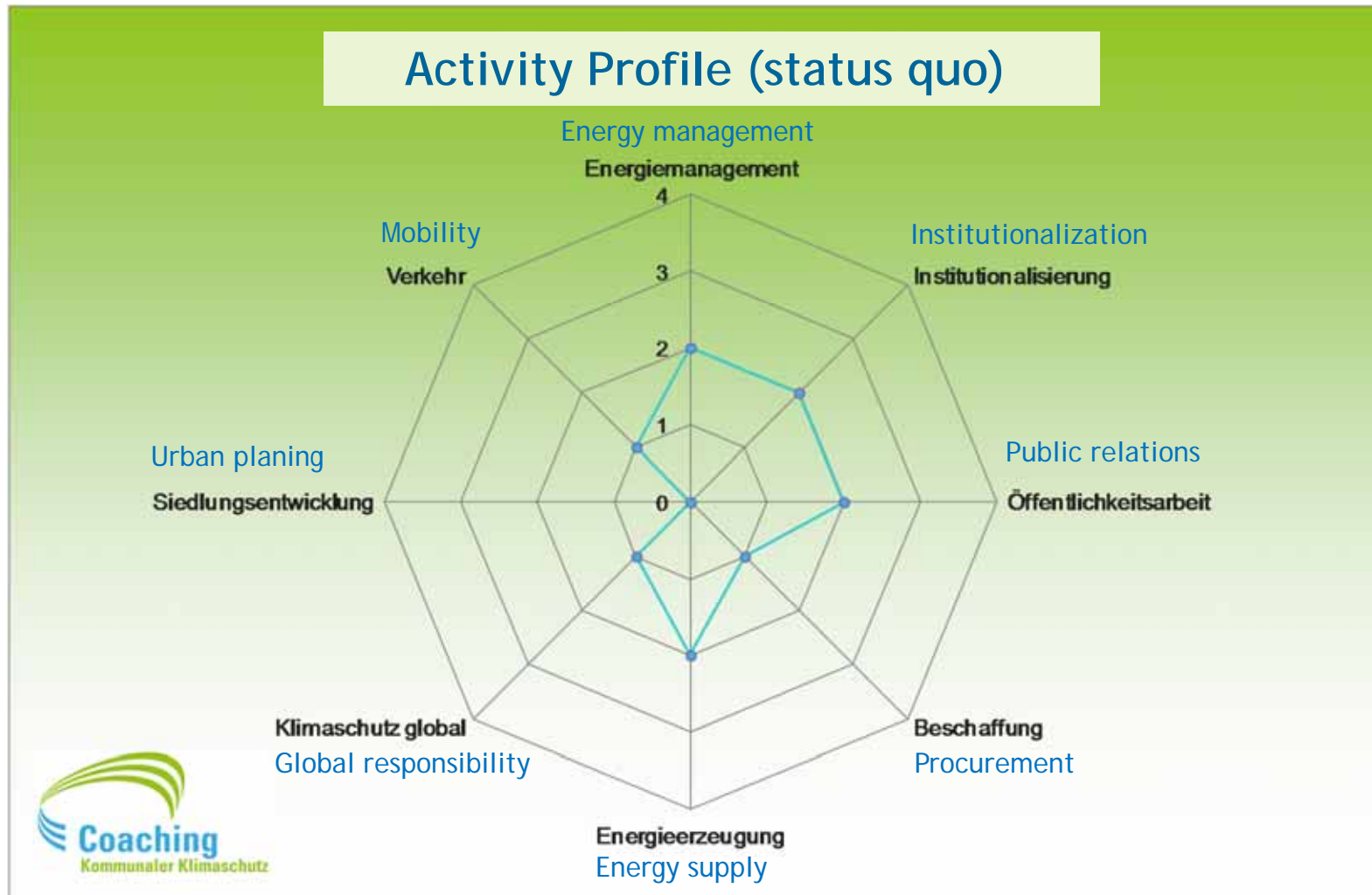
A1 Checklist Energy Management

ja	nein	Themengebiet / Frage	(2 Seiten)	Wertung (%)
		Energiebeauftragter und Organisation		25%
<input type="radio"/>	<input type="radio"/>	Gibt es eine zentrale Koordination der Aufgaben zum Thema Energie (Energiebeauftragten)?		10%
<input type="radio"/>	<input type="radio"/>	Ist die Aufgabenverteilung des Energiemanagements schriftlich festgehalten?		2%
<input type="radio"/>	<input type="radio"/>	Sind alle bei Energie- und Sanierungsfragen relevanten Ämter und Hausmeister eingebunden?		1%
<input type="radio"/>	<input type="radio"/>	Gibt es eine Priorisierung zum Thema Energie?		1%
<input type="radio"/>	<input type="radio"/>			
<input type="radio"/>	<input type="radio"/>			
<input type="radio"/>	<input type="radio"/>			

A2 Checklist Institutionalization

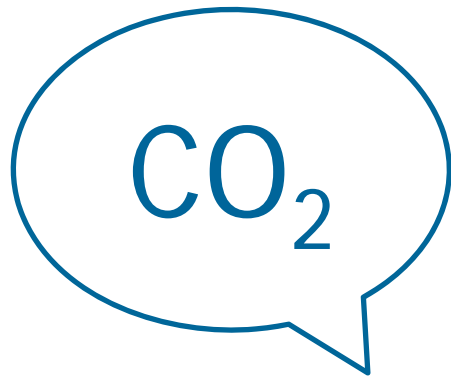
ja	nein	Themengebiet / Frage	(2 Seiten)	Wertung (%)
		Ziele und Strategien		30%
		<i>Politisch kurz- und mittelfristig verankerte Klimaschutzziele (z.B. bis 2020 oder 2025)</i>		
<input type="radio"/>	<input type="radio"/>	Gibt es ein CO ₂ -Einsparziel der Kommune?		5%
<input type="radio"/>	<input type="radio"/>	Gibt es ein Energieeinsparziel der Kommune?		2%
<input type="radio"/>	<input type="radio"/>	Gibt es Ziele im Bezug auf den Ausbau Erneuerbare Energien?		2%
<input type="radio"/>	<input type="radio"/>	Gibt es Ziele im Bezug auf den Ausbau von Kraft-Wärme-Kopplung?		2%
<input type="radio"/>	<input type="radio"/>	Gibt es Ziele zu Einsparung von Endenergie/CO ₂ in kommunalen Gebäuden?		1%
<input type="radio"/>	<input type="radio"/>	Gibt es Ziele zur Erreichung der Klimaziele der Bundesregierung?		2%

Tools e.g. Activity Profile (small)



Capacity building „Klimaschutzdialog“

Change agent course for local climate action „heroes“



Within the framework of „**climate dialog**“ (Klimaschutzdialog - Prozessoptimierung, Kommunikation und Mobilisierung im kommunalen Klimaschutz)

Time frame: 2013 to 2015

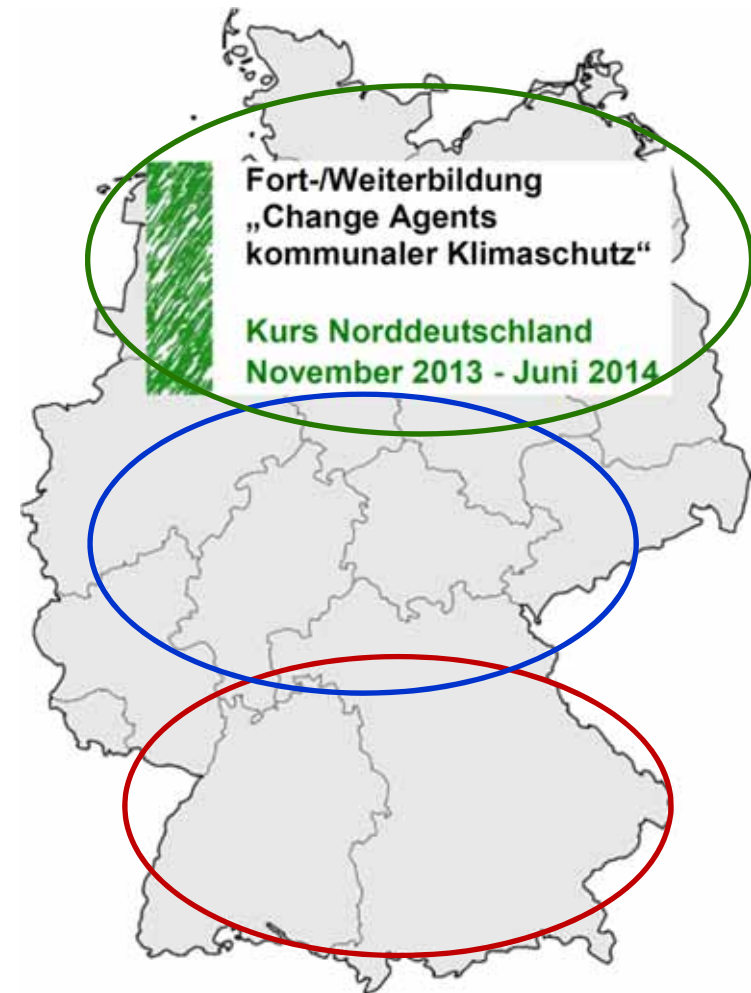
Commissioned by Bundesumweltministerium (BMU)

Supported by „Nationale Klimaschutzinitiative“



Change agent course

- Pilot course (just running)
- Course north 2013/2014 (fully booked)
- Course south 2014
- Course middle/east 2014/2015



Partner



EBUS

Institut für Entwicklungsberatung
und Supervision



Klima-Bündnis



At the end climate change building may be ready but...



...even citizens have to hit the target!

**TAKE THE FOOTPRINT
CALCULATOR!**



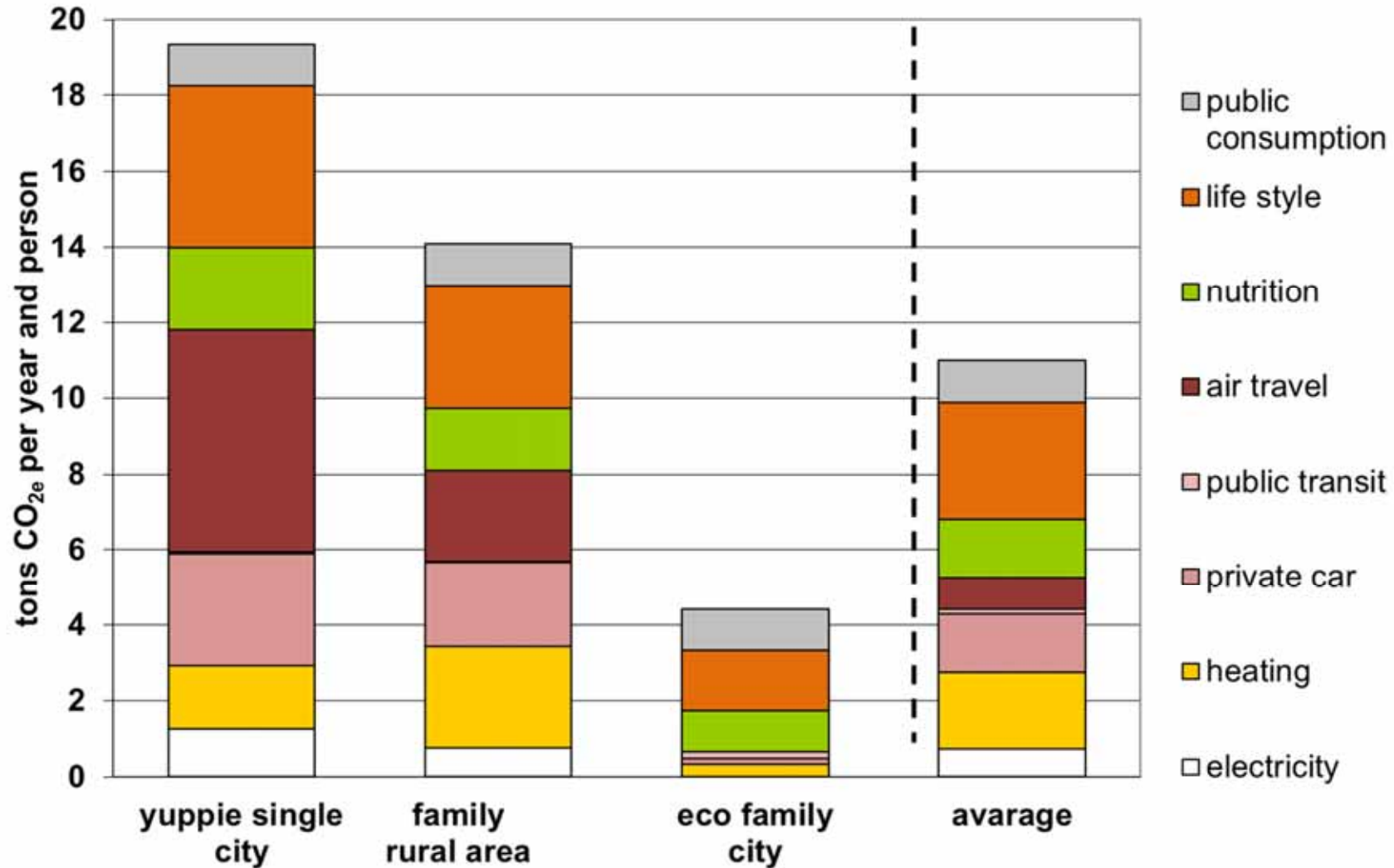
http://www.ifeu.de/english/index.php?bereich=ene&seite=CO2_fussabdruck

Balancing your own CO₂e emissions

- Calculation of single person or household
- Comparison with German average and acceptable quota
- Balancing even for single fields of needs
- Public consumption is fixed on the short run
- Yearly updating and recording possible
- Offline version for scientific project available



Range of carbon footprint



And don't forget



„Was du nicht messen kannst, kannst du nicht lenken“
Peter Ferdinand Drucker (1909-2005)
US-amerikanischer Ökonom
und Pionier der modernen Managementlehre

Thank you for your attention

