Im Auftrag des:
Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit
NATIONALE KLIMASCHUTZ INITIATIVE

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Evaluation of the German National Climate Initiative (NCI)

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Background - Evaluation landscape in Germany

- German Energiewende: Costs and benefits are in focus
- Better regulation guidelines (EC):
  - EU actions are based on evidence and understanding of the impacts
  - regulatory burdens on businesses, citizens or public administrations are kept to a minimum
- Germany: One-in/one-out rule (started in 2015) - Bürokratiekostenbremse
- German Federal Audit Office requires impact evaluation (plus more and more often impact assessment and formative evaluation)
- Evaluation has become more prominent in Germany over the last decade (NAPE measures, German Energieeffizienfonds)

The National Climate Initiative (NCI)

The National Climate Initiative (NCI) ...

- ... initiated in 2008 by the German Federal Ministry of Environment.
- … complements policies and measures to reach national climate targets.
- … funded from the federal budget and from auctioning revenues within the EU ETS (low price issue)
- … supports climate action projects and programmes across Germany
- … addresses different target groups „consumers“, „business, „local authorities“ and „educational institutions”

The National Climate Initiative (NCI)

The National Climate Initiative …

- … realizes that
  - GHG reduction potentials remain untapped for varying reasons
    - too expensive,
    - force of habit,
    - lack of information, ….
  - … removing barriers might take a long time (pilots, education)
  - … behavioural change is often very short lived (motivation, campaigns)

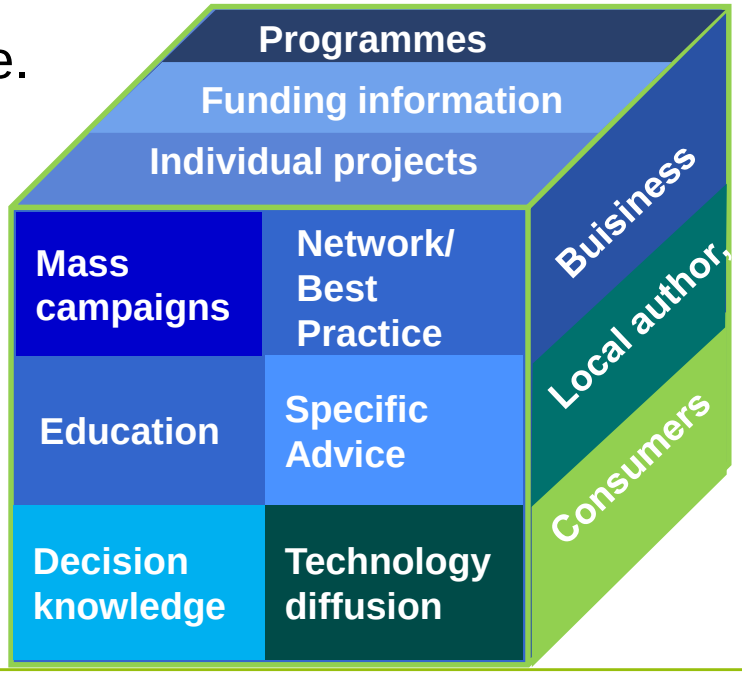
- Thus, it tackles barriers – in a different way compared to market/price based or command-and-control approaches

The National Climate Initiative (NCI)

The National Climate Initiative (NCI) ...

- … involves actors,
- … implements climate action locally.
- … sets examples for imitation.
- … aims at reducing barriers.
- … is heterogenous, multifaceted, flexible.
- … has a broad basis:

  - ✓ **Target groups**
  - ✓ **Funding structure**
  - ✓ **Size and duration**
  - ✓ **Action areas**
  - ✓ **Implementing actors**
  - ✓ **Impacts**



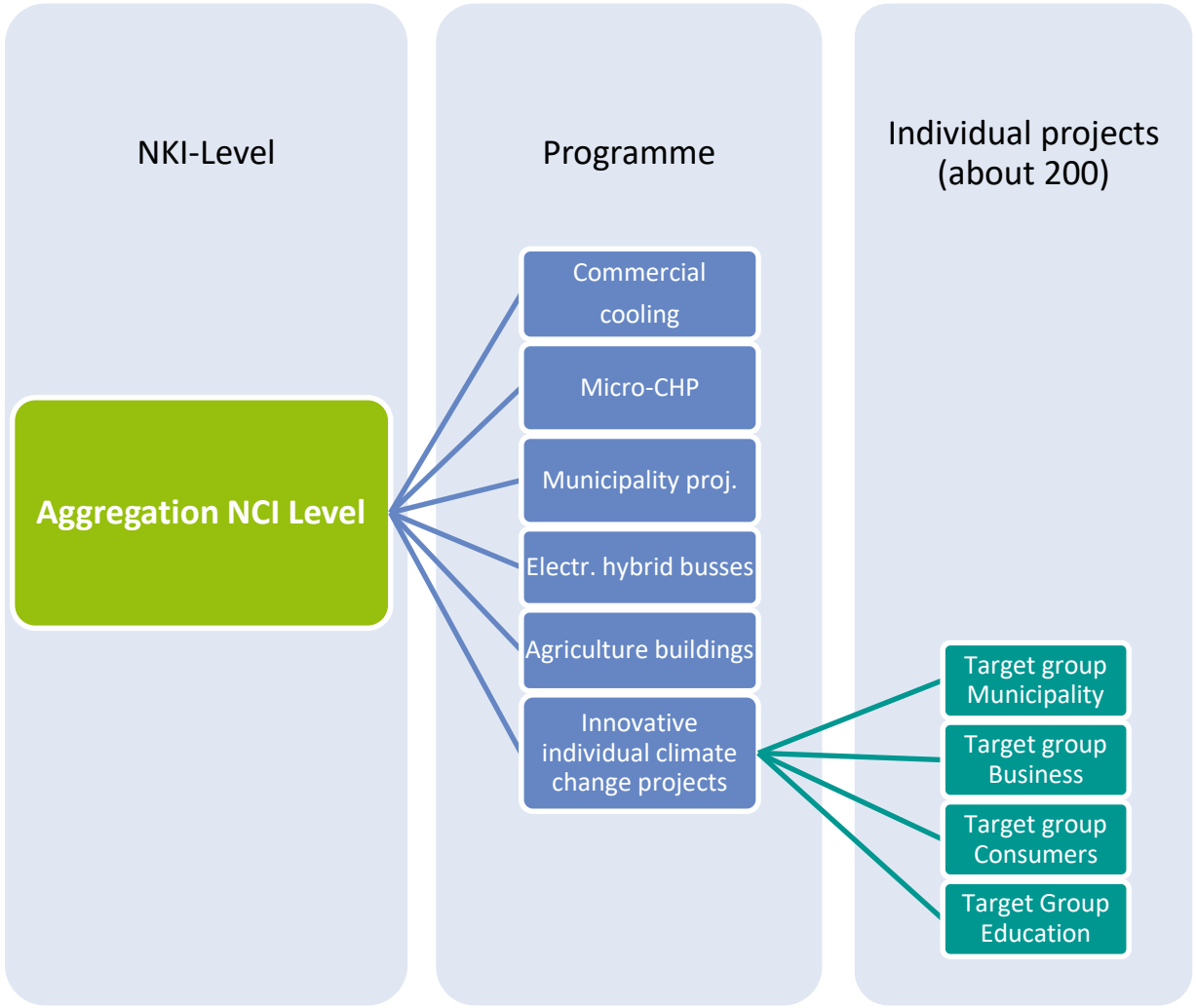
The National Climate Initiative (NCI) …

- …includes
  - broad and specific information programmes,
  - energy and climate concepts, and implementation
  - best practice activities
  - investment subsidy programmes (Micro-CHP, Cooling)
- Measures can be broadly split into
  - Information-based measures
  - Investment incentives

Evaluation of the NCI

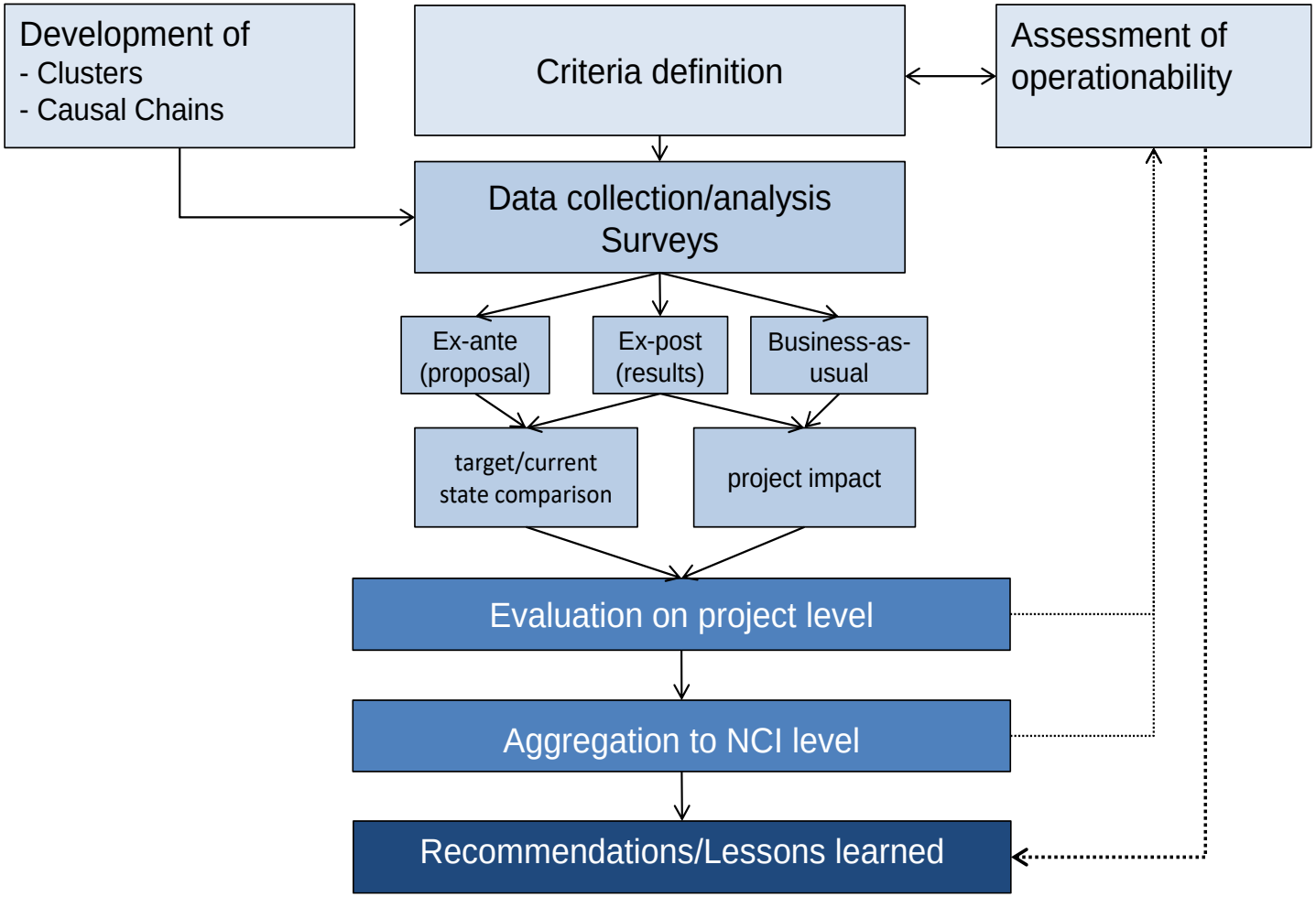
- Monitoring and evaluation are part of the NCI.
- Ex-post evaluation: GHG emissions mitigation, economic impact, multiplication and continuity
- Different evaluation phases:
  - First phase (completed in 2012): Evaluation of years **2008-2011**
  - Second phase (to be completed in 2019): a) **2012-2014**, b) 2015-2017
- Lessons learned, recommendations for further development and next steps of NCI

NCI Evaluation 2nd phase - ongoing



- Ex-post Evaluation **2012-2014** and **2015-2017**
- Formative evaluation for specific parts

Methodological approach



Evaluation Criteria

Criteria	Sub-criteria
GHG emission reduction	GHG-reduction, energy savings, funding efficiency
Model character	feasibility, transferability, visibility
Broad impact	target group coverage, regional coverage
Continuity	capacity building, continuation of personell and activities
Economic Effects	mitigation costs, employment effect, leverage effect

Operationalization of criteria

- For each criteria, we define
  - Subcriteria
  - Indicators
  - Main question to be addressed
  - Units
  - Data sources
  - Guiding comments

		Kriterium	Unterkriterium / Indikatorengruppe	Indikator
1		Kriterium Klimawirkung		
	1	Klimawirkung	THG-Minderung	a. THG-Emissionsminderungen in Folge ökonomischer Anreize
				b. THG-Emissionsminderungen in Folge informativer Interventionen
				c. Konzipierte THG-Emissionsminderungen
	2	Klimawirkung	Energieeinsparung (Wärme, Strom, Kraftstoff)	a. Minderung Endenergieverbrauch pro Sektor nach Brennstoff in Folge ökonomischer Anreize
				b. Minderung Endenergieverbrauch pro Sektor nach Brennstoff in Folge informativer Interventionen
				c. Konzipierte Minderung Endenergieverbrauch pro Sektor nach Brennstoff
	3	Klimawirkung	Fördermitteleffizienz	THG-Minderung im Wirkungszeitraum des Vorhabens je Euro (Förder-)Mitteleinsatz
	A	Klimawirkung	THG-Minderungspotential	THG-Minderungspotential auf Aggregierungsebenen für Zielgruppen und für Bereiche Mobilität, Wärme, Strom

- Information is collected within a tailor-made evaluation tool (excel-based), and an additional aggregation tool

Data for evaluation

- Project proposals
- Progress and final reports
- Project products (flyers, videos, articles)
- Interviews with contractors
- Project data bases
- Information from granting institutions
- Own data base
- Surveys (consumer surveys, business survey)

Cluster and causal chains

Type of intervention/ Cluster	characteristics/addressed GHG-mitigating behaviour at end-user	
Economic Incentives **Cluster: Financial support programmes**	address investment decisions only	
Informative Interventions	expand or change perception of options for action	
Cluster: **Broad campaigns**	**one-way information flow** fundamental orientation, simple recommendations and raise problem awareness	address investment decision and user routines
Cluster: **Specific advice services**	**mutual flow of information** provide individualized and situation-specific advice	
Cluster: Network/Best-Practice- Transfer	**“Peer-to peer “ Information + Feedback** Networks of „peers“ promotes Best Practice Transfer. Stimulates learning and competition.	
Cluster: **Knowledge transfer to change investment decisions**	**one-way information flow** Offers practical, situation or product-specific but not individualized information	Addresses ONLY investment decision; reduces information costs
Cluster: **Education**	**Activation and mobilisation of multiplicators** (teachers etc.) for climate action; Trainees and students are sensitized to climate action, their knowledge is expanded, climate-friendly behaviour is identified and, if possible, practiced or initiated..	

More on GHG impact of individual projects

- How to assess GHG reduction impact of individual activities?
- Consider impact chain (simplified bottom-up model)

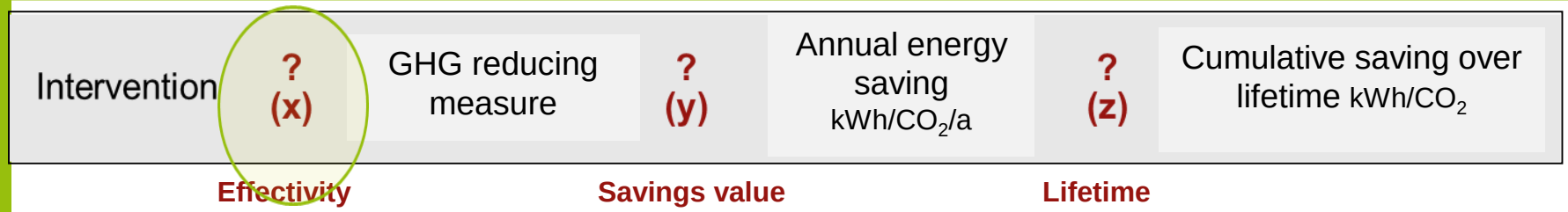
based on the recommended European Norm for "Energy efficiency and savings calculation –Top-down and Bottom-up methods"

x: How many people do we reach with our project and how many of those take action in terms of reducing GHG? = **Effectivity** of Intervention

y: How much do these GHG-reducing measures achieve per year? **Savings VALUE (**of e.g. an investment in building renovation, change in behaviour)

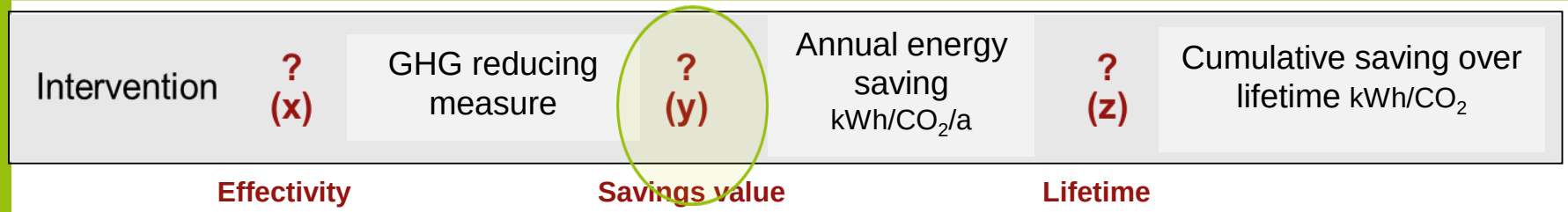
z: **Lifetime**: How long does the savings last? Lifetime of appliances, devices or change in behaviour.

X – Effectivity



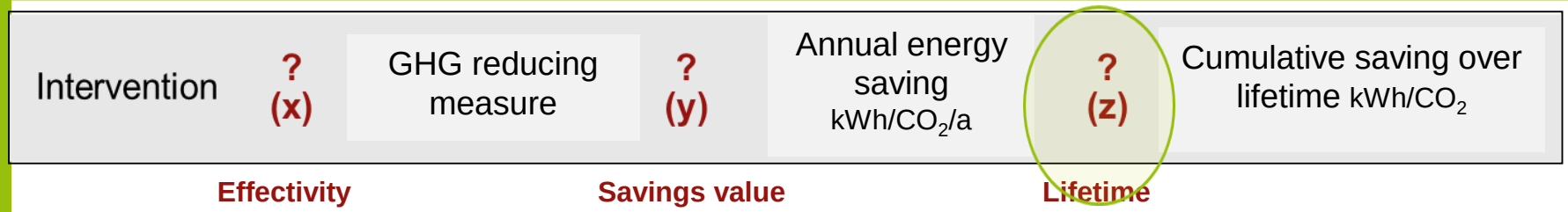
- Differentiate type of intervention:
  - Investment subsidies
  - Information based measures
    - Intensity and kind of information provision ranges from broad campaign to one-to-one interactive advice
    - effectivity might range from 2% to 15%
- How to arrive at effectivity rates?
  - Via Surveys, literature, information from existing evaluations
  - Expert guess

Y – Energy Savings Value



- Examples:
  - Investment activity: energy use of new versus alternative technology
  - Organizational change: use of energy management system
  - Change in user routines: different heating patterns, efficient driving, modal shift
- How to arrive at savings values?
  - Technology data base
  - Literature, standard assumptions
  - Meters, surveys

Z – Lifetime

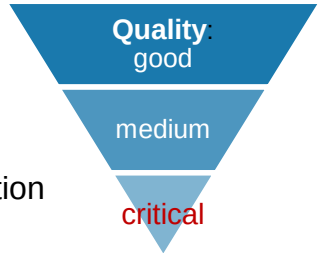


- Investment activity: Technical lifetime or depreciation period
- Behavioural change: literature, surveys – max 2 years

Assessment of GHG mitigation

- Characterization based on availability, quality and validity of data.

  - (Quasi) full data collection
  - Partial data collection and und extrapolation
  - Rough estimate based on literature information and qualified assumptions “



- Impact differs with respect to data integrity and meaning
  - Investment based intervention ⇔ realized GHG mitigation
  - Information based intervention ⇔ induced GHG mitigation
  - Concepts ⇔ conceptualized GHG mitigation

Effects: Gross or Net?

Gross effect

- consideration of standard investment (reference development)

- consideration of dynamic emissions factors

- consideration of windfall effects

-/+ consideration of (direct) anticipatory effect

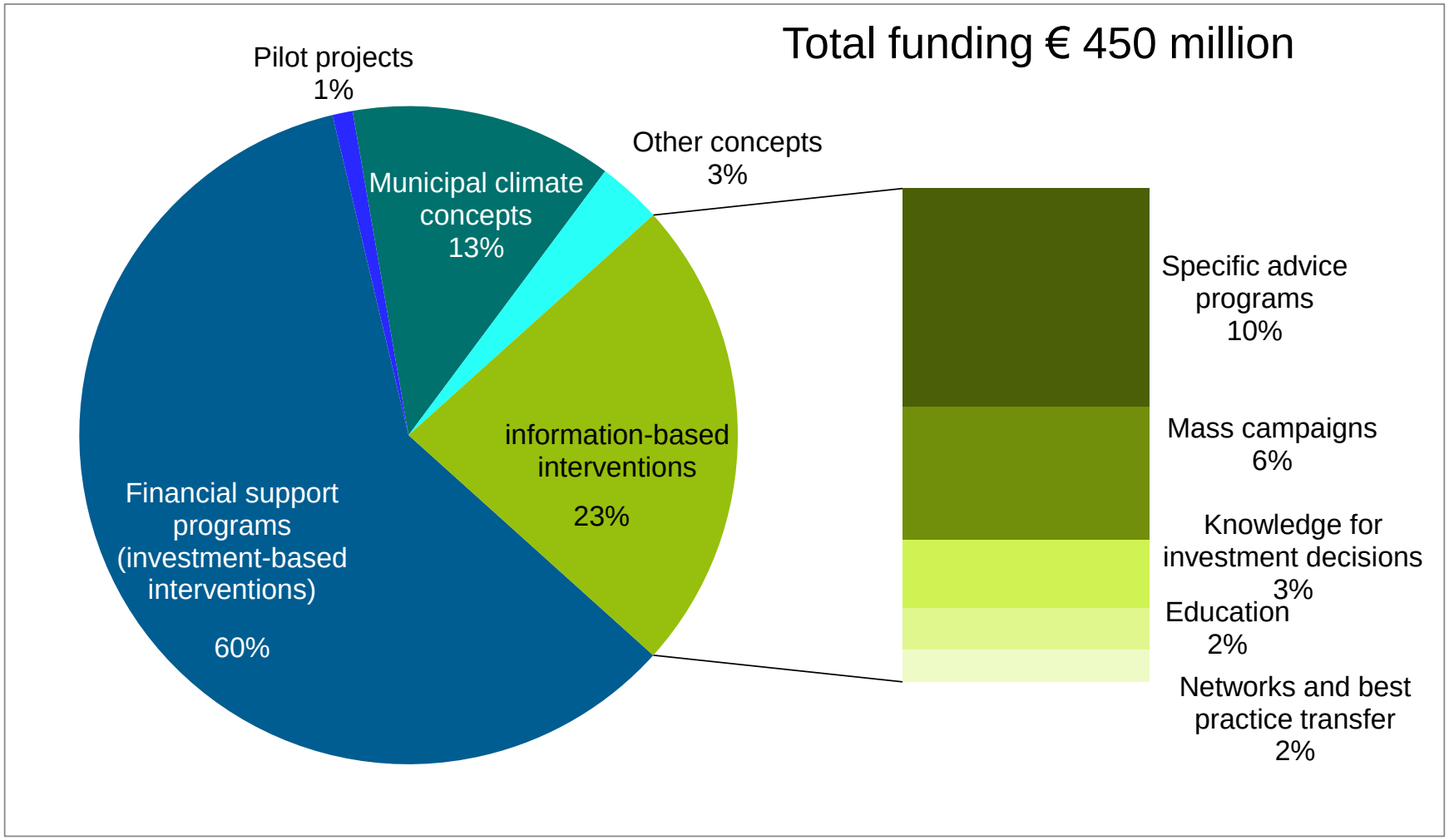
Net effect

Evaluation Challenges

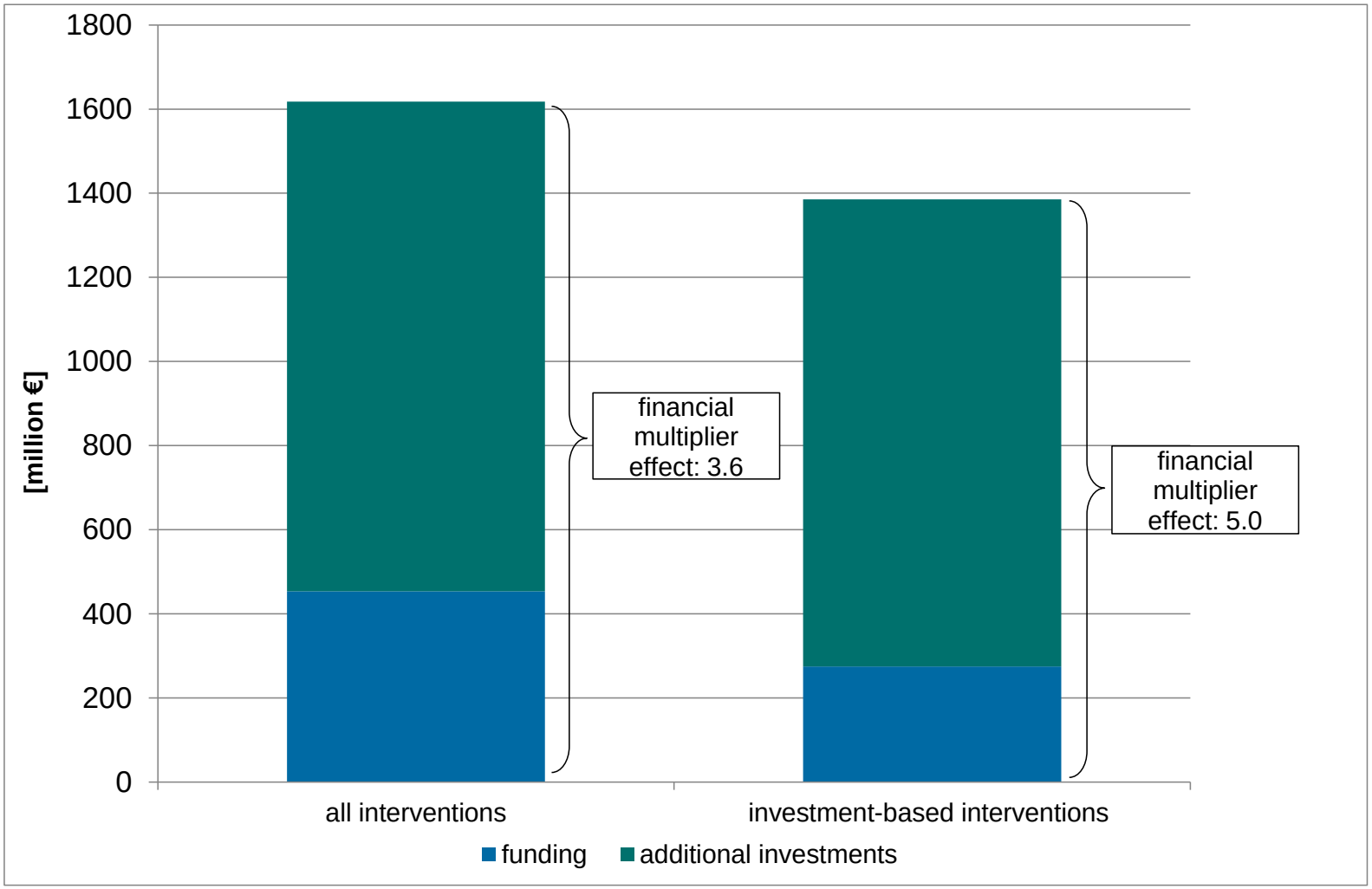
- Data, data, data….
- Confidentiality of information
- Impact chain unclear (e.g. educational programmes)
- No immediate impact (time lag, requires activity beyond the project, probability of impact unknown)
- Impact not realized – just on paper, e.g. concepts
- Business-as-usual or reference development unkown/debated
- Projections for basic data needed (e.g. energy prices, interest rate, emissions factors)

RESULTS

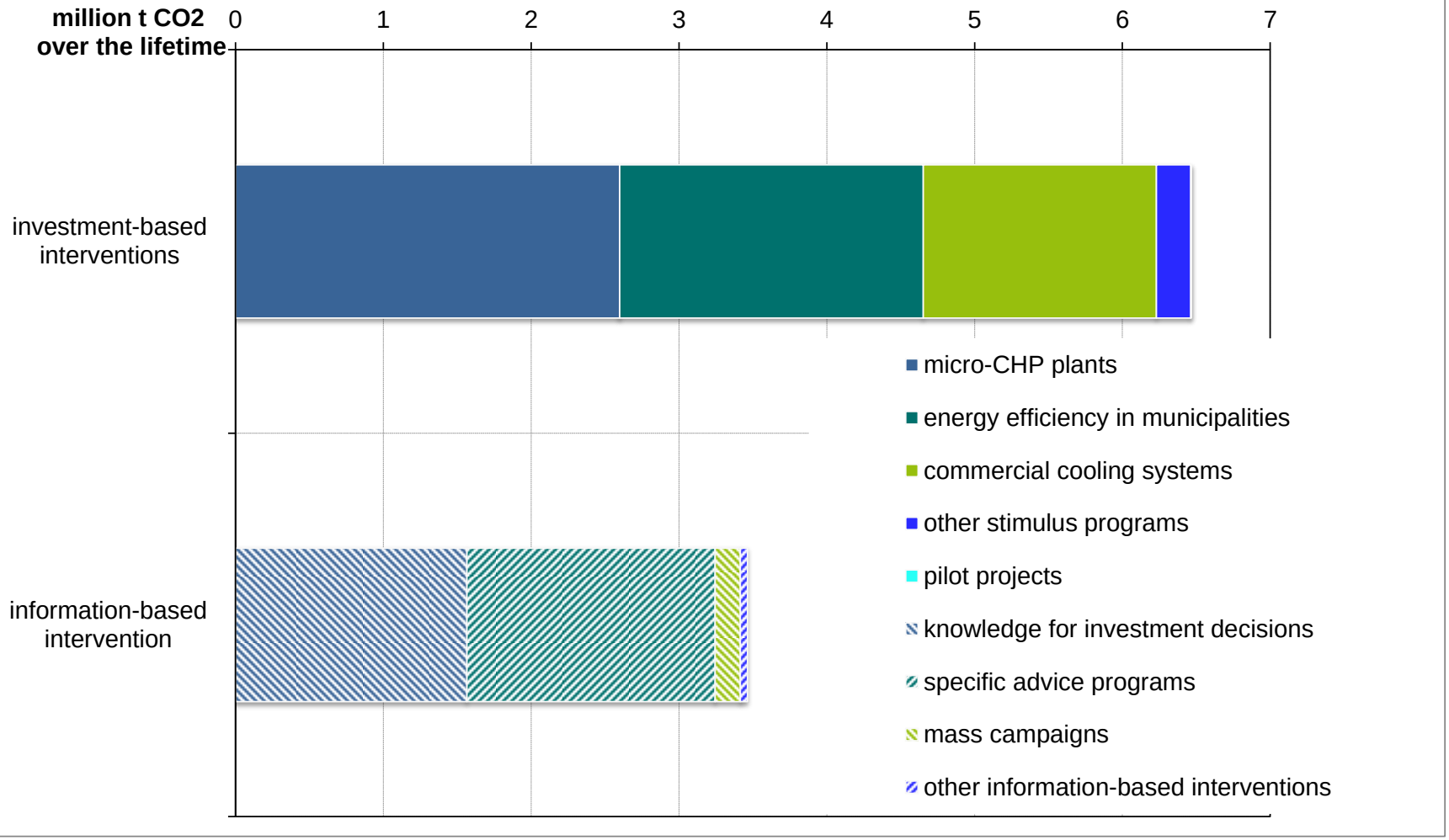
NCI Funding – 2008-2014



Economic leverage effect

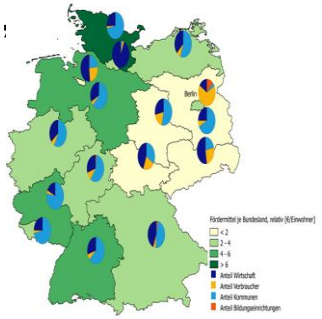


GHG reduction over lifetime

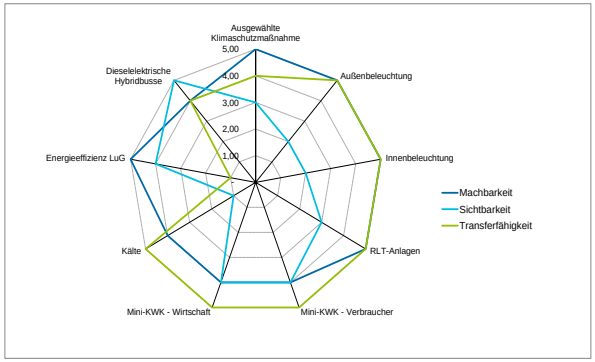


Further positive effects

- NCI projects raised awareness and sensitized on climate action
- High visibility - activities reached a large number of actors, were spread to varying extents all over Germany and were well-tailored to address individual target groups and to serve as models.



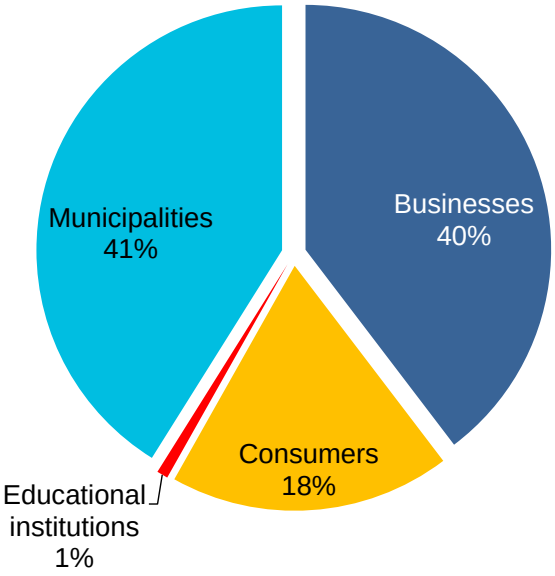
- Networks between businesses and municipalities were established to share best-practice, generate new ideas and thus increase the effectiveness of climate mitigation efforts.



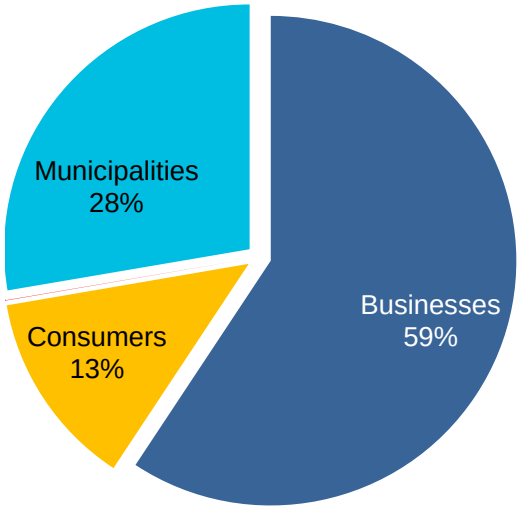
- Employment effects: More than 10 000 persons were directly involved with the NCI (full time equivalents), another 30 000 indirectly involved further up the value chain.

Effects by target group

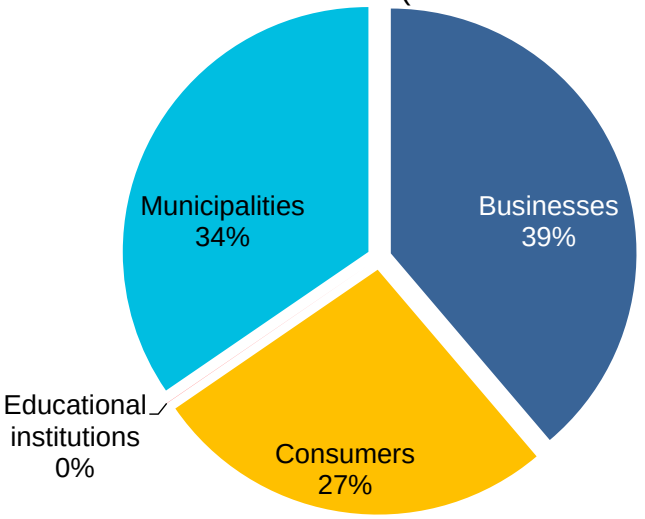
Funding (€ 453 million)

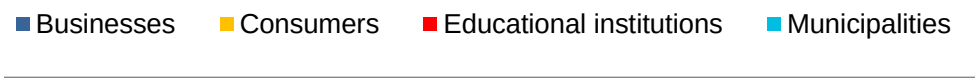


Additional
Investments (€ 1.16 billion)



GHG reduction over the lifetime
(9.9 million t GHG





Conclusions

- Distinct difference in impact between information-based and investment-based instruments and within these groups
- Some reach large number of peole but have limited impact on changing behaviour, some affect behaviour but have limited impact on total GHG emissions
- Measures targeted very different savings potentials
- GHG savings may be realized instantly, some in medium or long term or only on paper
- Lessons learned:
  - Use existing communication channels and add climate-related information
  - Information and motivation in one-off behaviour can deliver more climate benefits than measures in changing daily-routines
  - Different target groups are receptive to different interventions

Conclusions

- NCI is successful
  - very flexible, innovative and effective
  - can be adjusted to meet demands and provide room for exploration
  - can tackle target groups and their respective barriers
  - NCI structured to reach many stakeholders/attractive partner for cooperation - local authorities, federal states, industry companies, NGOs, consumers/consumer groups
  - NCI supplements existing policies and measures
    - specific to target groups
    - specific to mitigation potentials
- It needs to provide exit-strategies to discontinue funding but continue projects or mitigation
- Consistent monitoring is essential