



100% Climate Protection

Energy Efficiency Networks in Frankfurt am Main

Florian Unger | Head of Energy Efficiency | 13th June 2016

Frankfurt – challenges and focuses

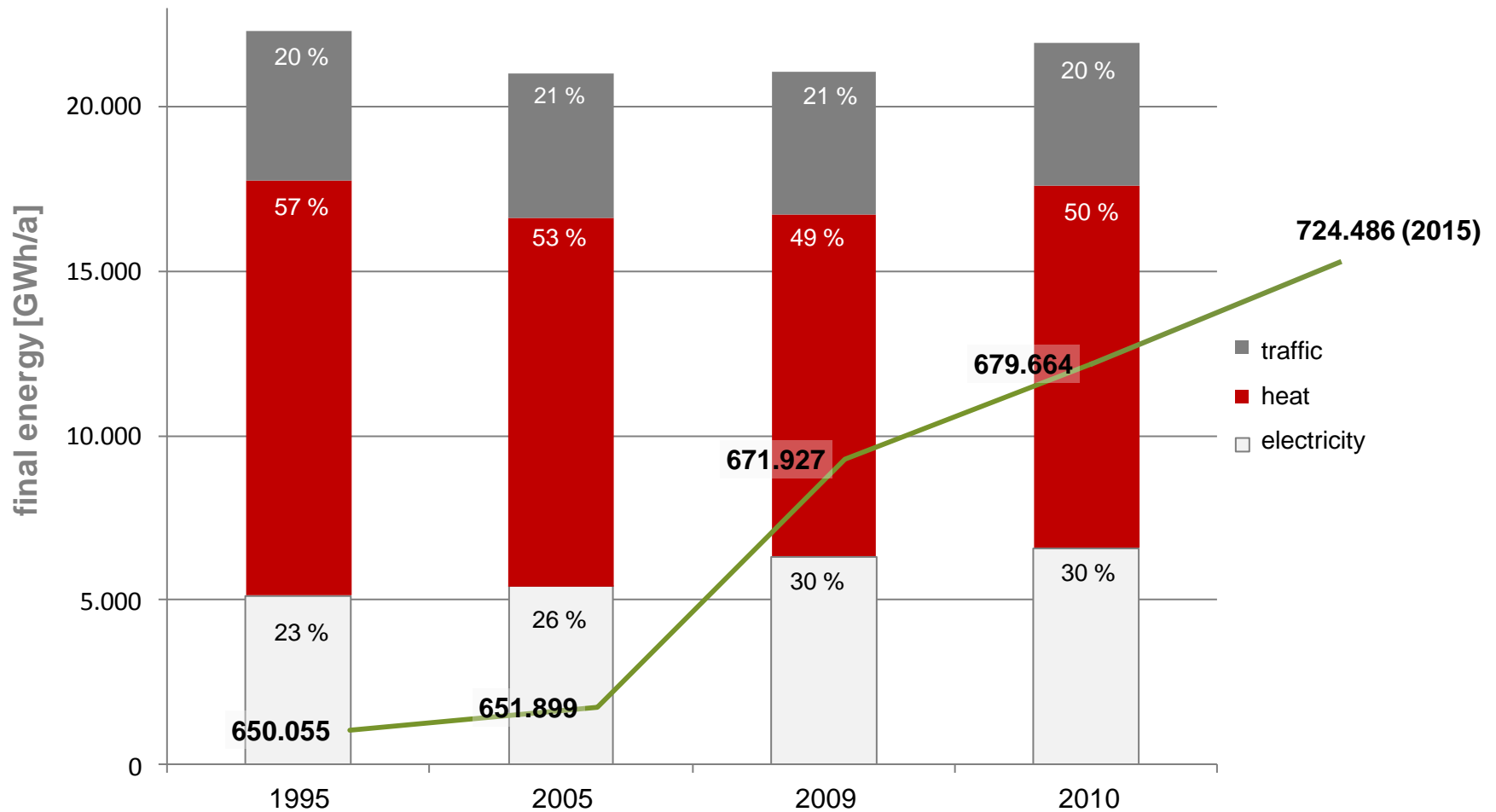
Target: 100% Renewable Energy till 2050



Current status*

final energy consumption	22.650 GWh
electricity consumption	6.580 GWh (29%)
renewable energy share	2010: 420 GWh (6%)

*based on CO2 inventory 2010



Source: City of Frankfurt am Main, Energierferat, 2014; ifeu, 2011.

Development perspective

- ❖ Renewable energy potential in the area of waste, water and bio mass nearly exhausted
- ❖ Little open space in the city available
- ❖ Largest potential is therefore: energy saving



-50% reduction of final energy consumption by 2050

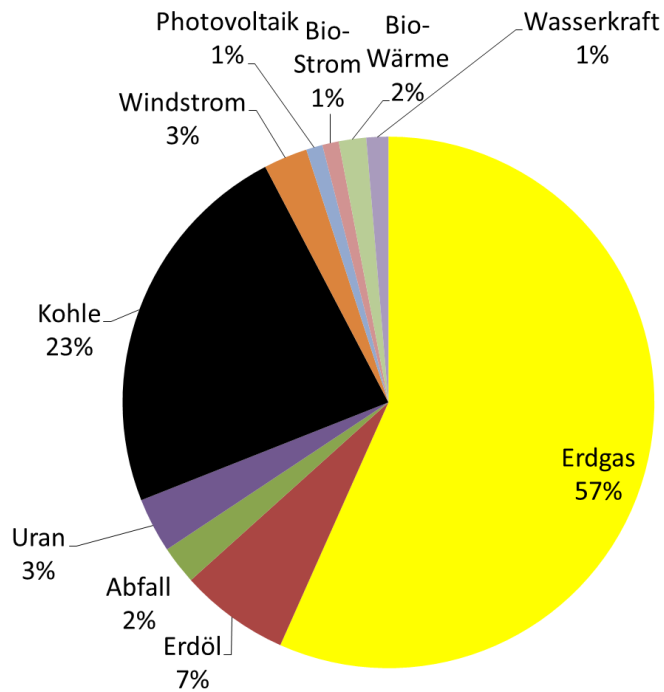


50% of the energy supply based on renewable energy shall will be provided within the city territory

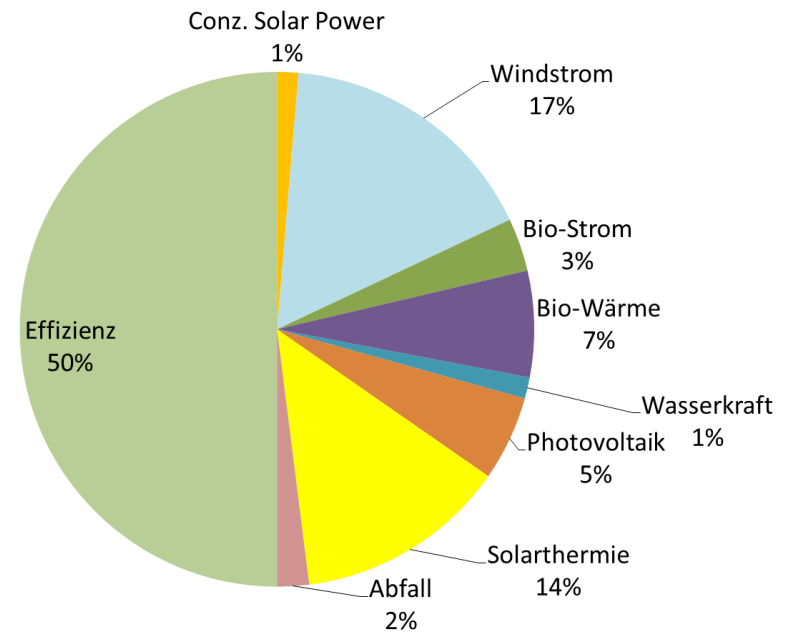


50% of the energy demand shall be supplied
by renewable energy sources of the Rhein-Main region





2011



2050



**Scope of
influence?**



ENABLE

(„empower and enable“)

- Transfer of knowledge and expertise
- Creation of options of action
- Infrastructural frame

ENCOURAGE

(„create incentives“)

- taxation
- Creation of financial incentives
- Creation of social incentives

BEHAVIOUR

ENGAGE

(„engage and mobilize“)

- Mobilize through campaigns
- Support of collective engagement
- Vitalisation of norms

EXEMPLIFY

(„to set a good example“)

- Local action as role model
- Lighttower projects
- Modells

Define Energy Efficiency Networks (EEN)

The idea behind energy efficiency networks is to trigger self commitment among the network members. And beyond that to engage the members in a intensive knowledge exchange. In the best case energy savings exceed the costs of setting up and operating the network.



Advantages

Long term reduction of costs
Ensure transparency
To show one's colour
Expand know-how within the company
Leverage synergies (ISO 50001, etc.)



Work together with like-minded people
Clarify energy flows and costs
Underline your involvement
Benefit from experience within other companies
Build on existing certifications



LEEN network approach

Phase 0

3 to 9 months

Information event

LEEN-concept

- Organisation
- Process
- Costs
- Benefit

Letter of Intent / contract

Official start of the network

Phase 1

5 to 10 months

Identification of economical energy efficiency measures

- Initial survey
- On site inspection
- Initial report

Target agreement

- energy reduction
- CO₂ reduction

Phase 2

2 to 4 years

Regular meetings

(3 to 4 meetings per year)

Content:

- On site inspection
- Technical lecture
- Presentation of implemented measures
- General exchange of experiences

Completion:

- Publication of results
- Decision to continue the network

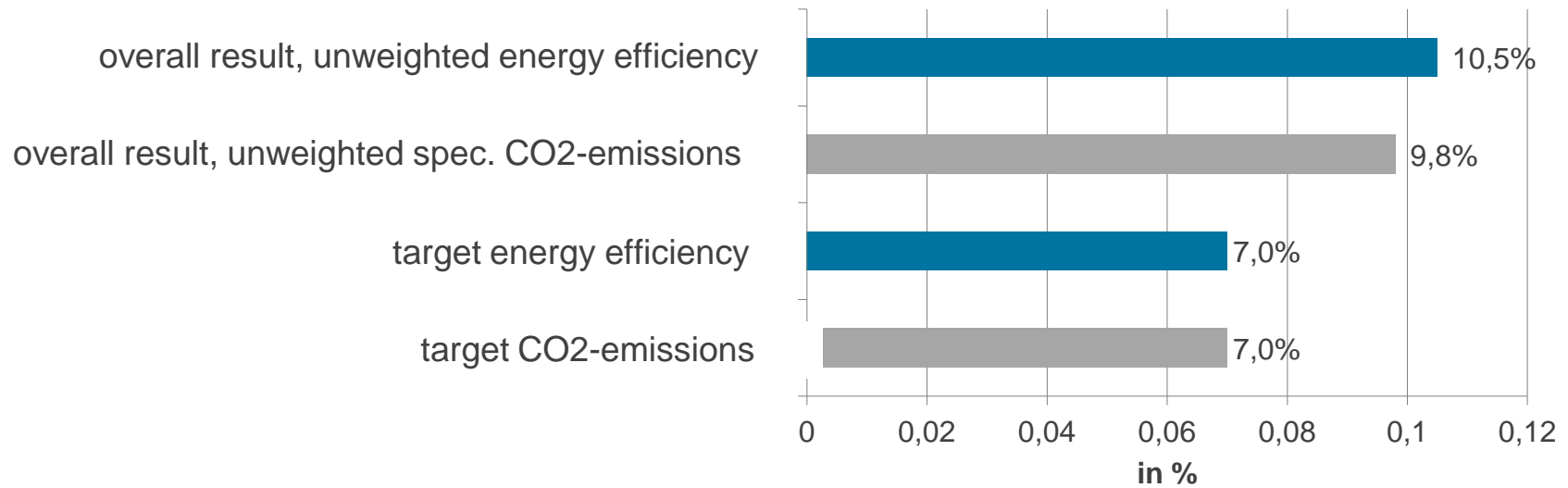
30Pilot 
Netzwerke

Duration: 03/2010 bis 06/2013

Target agreement: 7% energy savings
7% CO₂-reduction

10 companies





ÖKOPROFIT[®] network approach

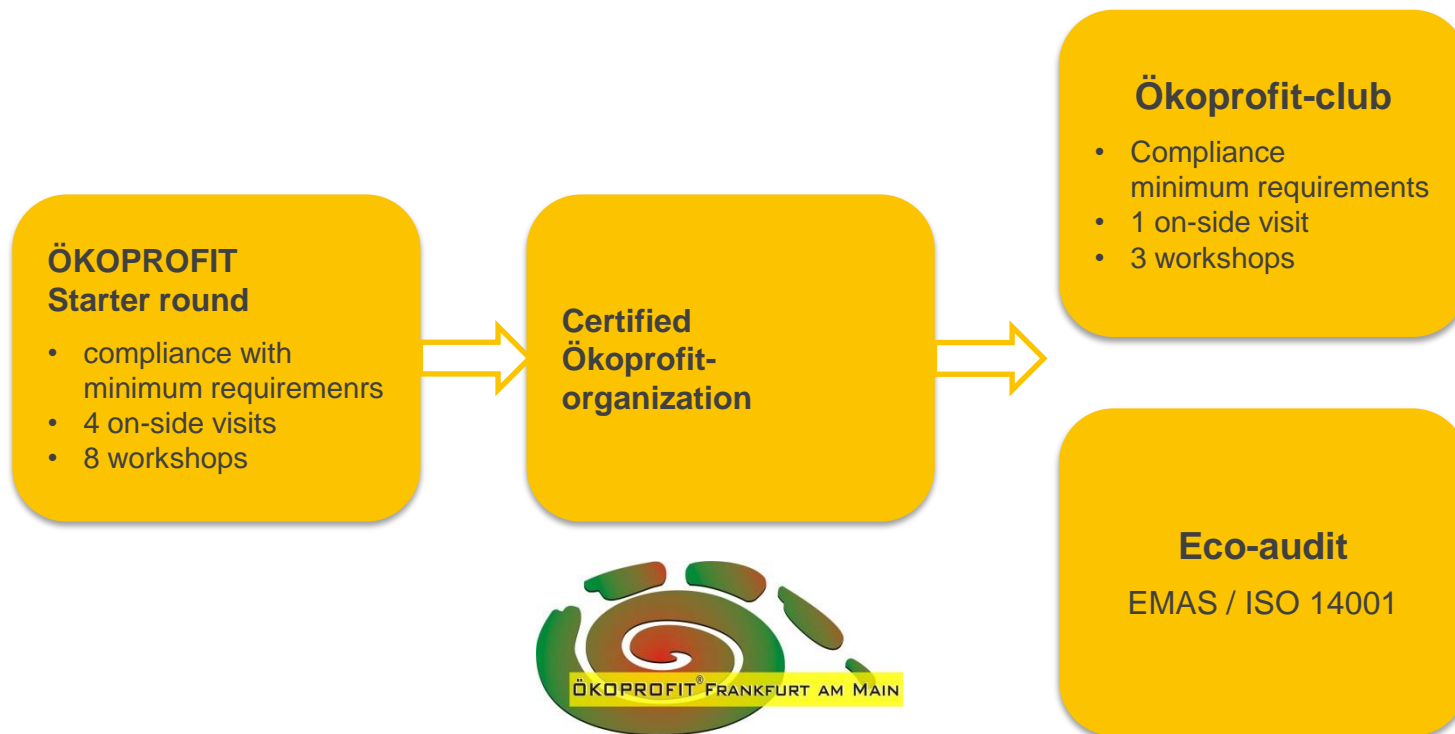
- ✓ a moderated environmental programme over a period of 12 months (starter programme);
- ✓ a continuous support to lower costs of operation in the areas of environment and energy;
- ✓ introduction of environmental management system approach;
- ✓ since 2007, 63 enterprises and institutions participated in the programme;
- ✓ 21 organizations participate in the Ökoprofit club to deepen their environmental commitment



Project cycle: a systematical approach

workshops (group-based)	on-side visits (individual)	12-month project cycle
<ul style="list-style-type: none"> • Environmental policy and environmental team • Waste prevention / waste management • Energy audit, emissions • Toxic substances / water • Legal requirements • Environmental management / controlling / mobility • Environmental purchasing / social engagement • Security of employment / preparation certification 	<ul style="list-style-type: none"> • Evaluation of situation • Tour of the company • Law and organisation • Environmental programme • Energy audit (analyse) • Final preparation 	
Certified ÖKOPROFIT® organisation		

Ökoprofit process



KLIMASCHUTZ FRANKFURT AM MAIN Bilanz nach 8 Jahren ÖKOPROFIT



* = Beinhaltet die Einsparungen aller Verbrauchsbereiche der Ökoprofit-Betriebe (Einsteiger + Klub)

** = Berechnungen nach Angaben der Bundesforschungsanstalt Forst/Holzwirtschaft

Source: Stadt Frankfurt am Main, Energierreferat, Projekt Ökoprofit 2007-2015 / 63 Unternehmen

Reduction of overheads

company size	average in 2015
up to 100 employees	7.188 Euro/a
101 till 250 employees	45.456 Euro/a
above 250 employees	135.245 Euro/a

Networking and exchange of experience



Ökoprofit participant 2014

Requirements for EEN

Requirements	LEEN	Ökoprofit - Standard - Club
Increase energy efficiency	energy efficiency	resources/energy efficiency
Numer of participants	min. 8	min. 8
Initiation by network organiser	✓	✓
All industries and company sizes may participate	✓	✓
Regular meetings	3-4	8
Moderated exchange	✓	✓
Potential analysis / data collection	✓	✓
Duration	3-4 yr.	1 yr. +
Agreement of target	✓	(✓)

Summary

- ❖ The results have to be evaluated within the scope of actions of the participants
- ❖ A unspecified evaluation does not appear to be target oriented
- ❖ Long term strategies to reduce energy consumption are necessary
- ❖ Public authorities as initiators

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Slide	Source
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