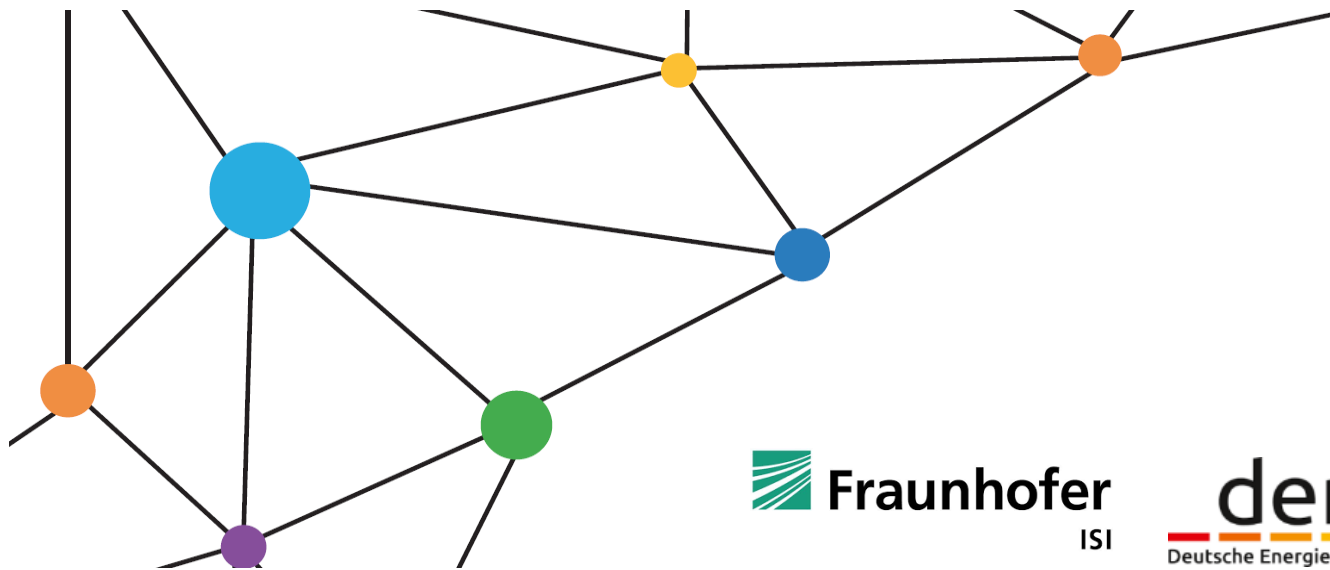

Energy Efficiency Networks: Lessons learned from Germany

Antoine Durand, Steffen Joest, Akamitl Quezada, Eberhard Jochem, Edith Chassein and Annette Roser



eccee Industrial Efficiency Conference, Berlin, 11–13 June, 2018
Panel 1 - Policies and programmes / Energy efficiency networks

History of the Energy Efficiency Networks



- 1987: first energy efficiency network in Switzerland
- 2002: first energy efficiency network in Germany
- 2008-2014 : Learning Energy-Efficiency-Networks (LEEN) 30 pilot project
- 2012-2016 : pilot project "Mari:e" energy efficiency networks for SMEs
- 2014-2018 : "LEEN 100 Plus" project as an extension of the "30 energy efficiency networks" pilot project
- Since Dec. 2014 Energy-Efficiency-Networks Initiative with a target of 500 new EENs until end of 2020

EEN Initiative(IEEN): Targets and criteria

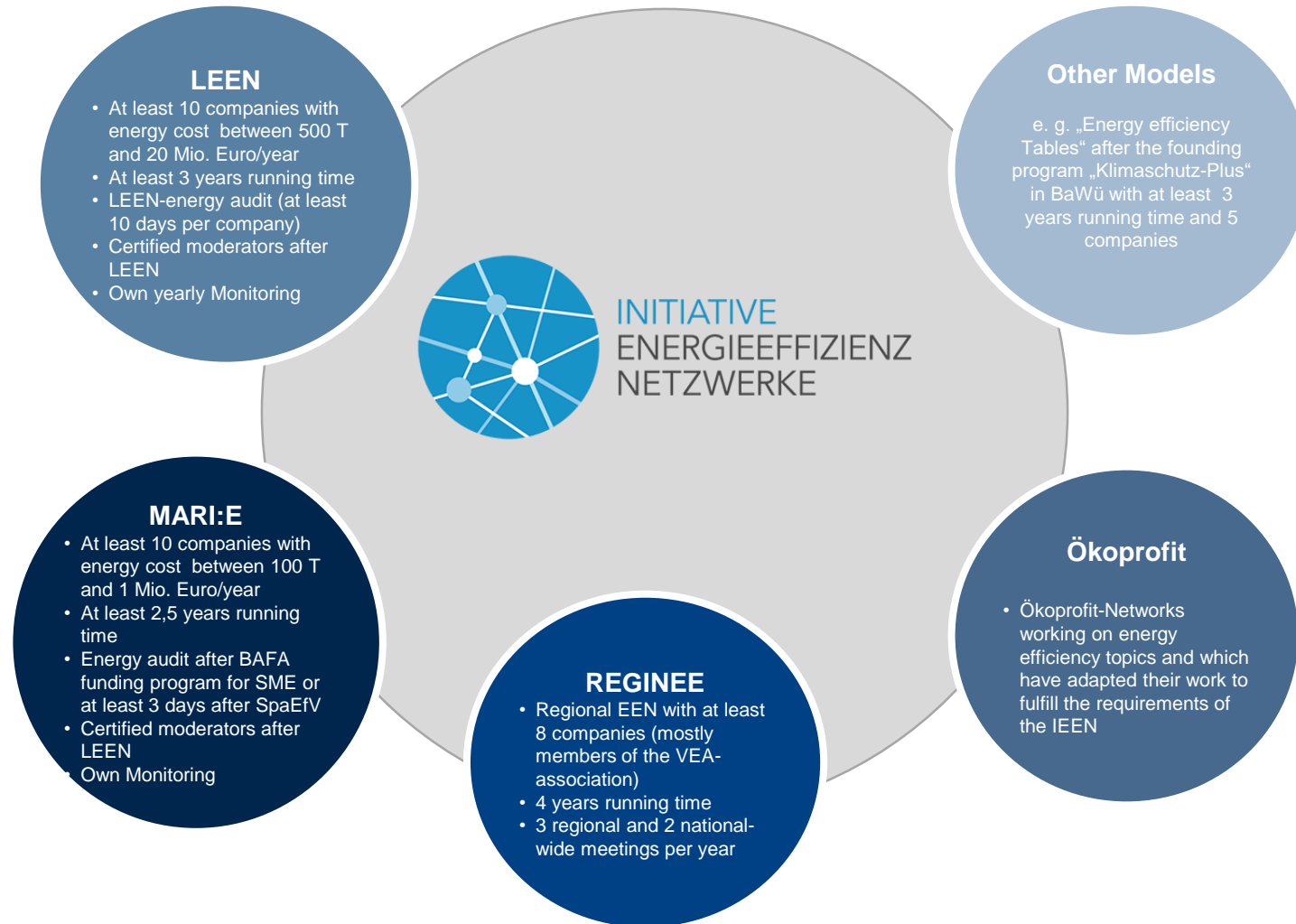
- **Voluntary agreement** between German government (BMWi) and the 22 economic associations/ organizations to support the foundation of **500 new EENs in Germany by end of 2020**
- Expected impact: overall primary energy saving and a greenhouse gas reduction of up to 75 PJ respectively 5 million tons CO₂-equivalent (German-government assessment)
 - ➔ One of the major measure in the German National Action Plan on Energy Efficiency in terms of potential energy and emissions savings (BMWi, 2014).
- Criteria for the IEEN:
 - have been founded after December 3rd, 2014,
 - agree to at least 2 years running time,
 - have at least 5 participating companies or company sites in Germany,
 - be supported by qualified moderators and internal or external energy consultants,
 - define a common energy saving target (at the latest one year after foundation), and
 - participate in the monitoring process of the IEEN.
- dena (German Energy Agency) : head office of the IEEN



INITIATIVE
ENERGIEEFFIZIENZ
NETZWERKE

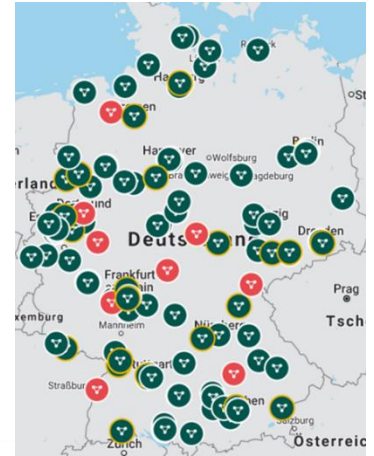
dena
Deutsche Energie-Agentur

EEN Initiative: Different EEN formats, one initiative



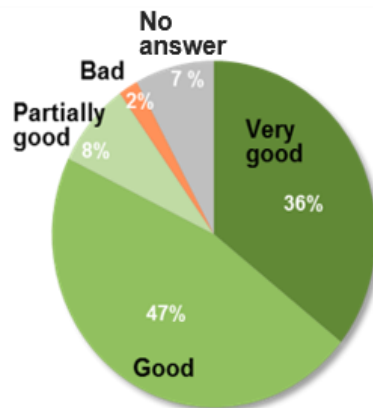
EEN Initiative: Current results

- 176 EEN created (June 12th 2018), involving over 1.600 companies
- Monitoring: see next presentation
- ➔ so far, the performance of the EEN of the IEEN are on track
(75 PJ and 5 MtCO₂ are likely possible with 450 EEN)
- ➔ the dynamic of creation of new EEN can be improved
- Survey (head office IEEN 2016):

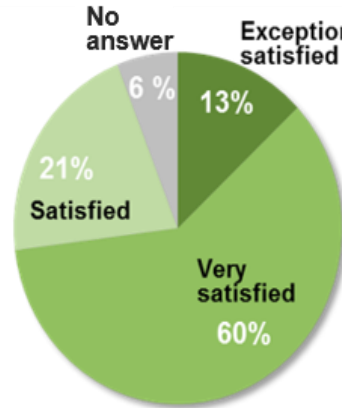


IEEN 2018

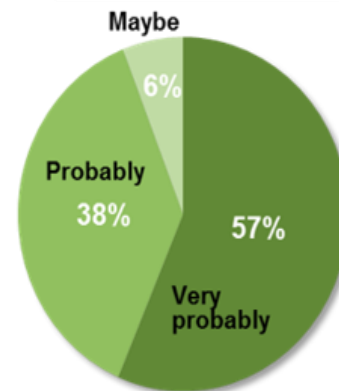
COST-BENEFIT FOR COMPANIES



COMPANIES' SATISFACTION



RECOMMENDATION TO OTHER COMPANIES

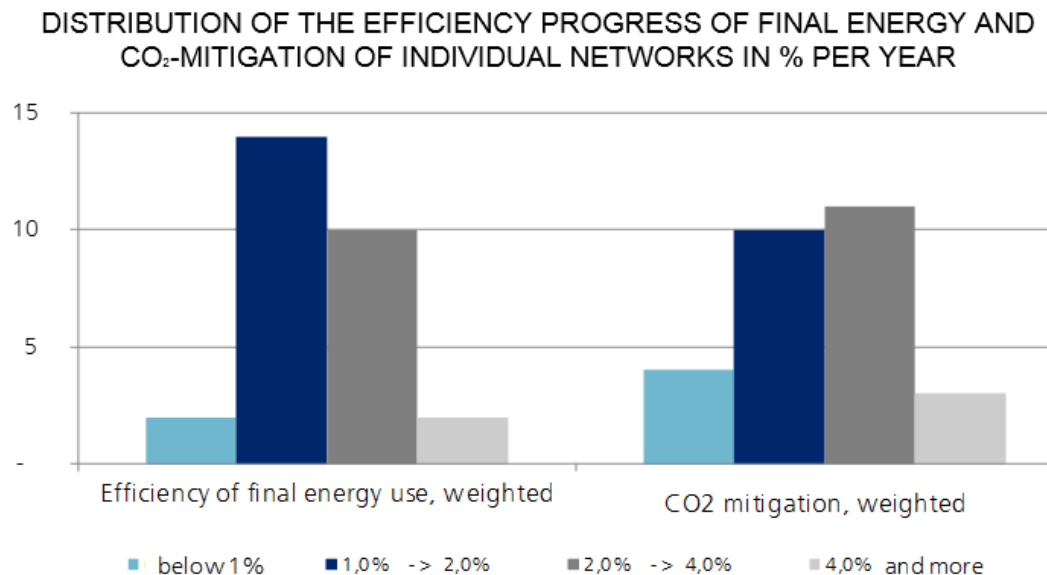


- ➔ all indicators of the survey show a very high satisfaction of participating companies

Long-term impacts of the early EENs

Experience of the Learning Energy Efficiency Networks (LEEN):

330 companies of 28 Learning EENs (source: Fraunhofer ISI and IREES 2015):



- energy savings on average to 2.3 % per year
- CO2 emission reduction 2.4 % per year; however substantial variation
- best results: 45 % efficiency improvement after 10 years in two large sites

Long-term impacts of the early EENs

- Changed **decision routines** in the participating companies and **reduced transaction cost**
- **Innovative ideas** of participating companies and reactions of their technology producers
- **Diffusion of efficiency-related knowhow** of participating sites within larger companies and groups

How do the following statements apply to your company?	yes	no	I can not say	no information
Some of the implemented efficiency measures would not have been implemented without participation in network	45 %	40 %	10 %	5 %
Suggestions from the energy efficiency network were implemented in measures	77 %	15 %	5 %	3 %
A common target of the network is an important incentive to implement EE measures	55 %	32 %	6 %	7 %

Source: Chassein et al. 2018 (survey: N=87)

Findings and lessons learned in Germany

- Once the companies get involved in an EEN, they are fully satisfied with the EEN concept
- Good performance of the EEN in terms of energy savings
- ➔ such the concept should spread across the country on its own !

- Theoretically yes... but:
 - many companies hesitate to sign a two, three or four year lasting contract for EEN-services (e. g. network-moderation) that they do not know yet
 - the business is very cumbersome and cost-intensive for the initiator and/or network operator to convince companies to join an EEN
 - on average 3 to 5 working days are required to persuade a company to join a network

Possible ways to improve the acquisition phase

- **Promotion of the concept** of EENs (partly unknown) as Energy Efficiency Implementing Networks through a larger, branch cross cutting, and an intensive information campaign.
- **Better understanding and promotion** of the intended short-term and the indirect long-term **impacts** to reach and convince the decision makers in the companies.
- **Trustful personality or institution to convince** the companies to join an EEN. *E.g.: Patrons, institutional multipliers, utilities, industrial associations and chambers of commerce as well as energy agencies.*
- Better **synergy of EMS following ISO 50001/50003 and EEN activities** to improve the attractiveness for companies. *Already around 9,000 companies in Germany have a certified EMS.*
- **Innovative concept** : some network operators propose to first agree on a trial period shorter than the running time required for EENs.

Conclusions

- EENs simultaneously address several barriers
- EENs deliver good performance in terms of savings
- The long-term effects - whether energy cost savings, CO₂ emission reductions or innovative ideas in processes and own products and services - are high
- ➔ EEN is an effective instrument for the economy and one of the best performing instruments in Germany to foster EEN
- ➔ The operation phase of an EEN is working very well

- The bottleneck of the instrument is still the acquisition phase
- Ideas are there, but need to be implemented or better evaluated
- ➔ the potential of replication of the EEN concept in further countries is high

Thank you for your attention!

Antoine Durand

Fraunhofer Institute for Systems and Innovation
Research ISI

Breslauer Str. 48

76139 Karlsruhe, Germany

antoine.durand@isi.fraunhofer.de



Steffen Joest and

Akamitl Quezada

German Energy Agency (dena)

Chausseestraße 128 a

10115 Berlin

Germany

joest@dena.de

quezada@dena.de



Eberhard Jochem,

Edith Chassein and

Annette Roser

Institut für Ressourceneffizienz IREES

Schönfeldstraße 8

76131 Karlsruhe

Germany

e.jochem@irees.de

e.chassein@irees.de

a.rosen@irees.de

