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# Technical assistance to promote energy audits and energy efficiency investments in SMEs

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International Video-Workshop, May 22th, 2020

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(Germany)

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# Agenda

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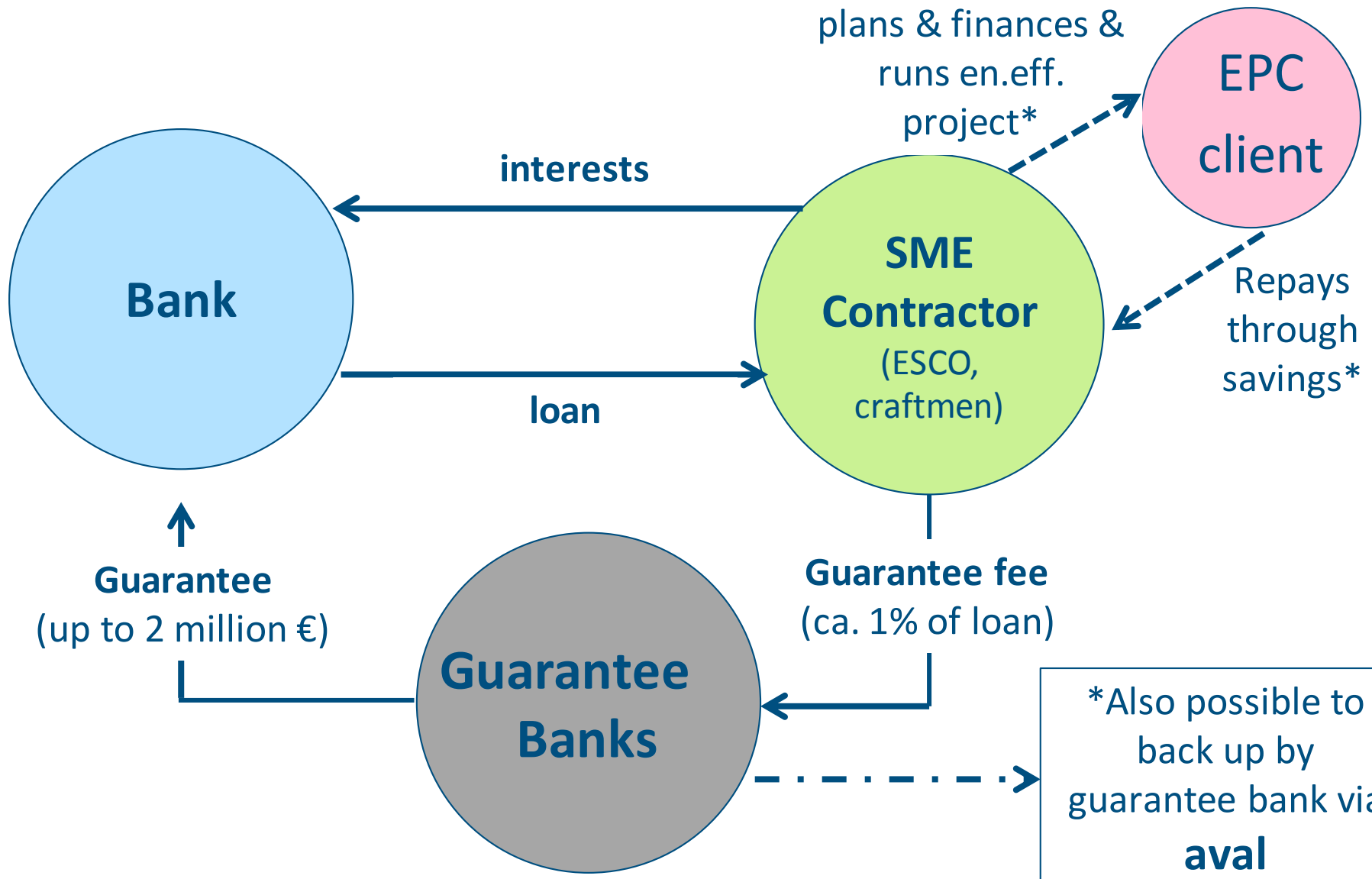
1. Experience with credit guarantees for energy performance contracting projects
2. Professional energy consulting support for SMEs
3. Investment support program for energy efficiency in SMEs and larger companies
4. Other initiatives

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# 1. Experience with EPC credit guarantees: Idea

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- Goal (2013): promote energy performance contracting (EPC) as profitable business model
- Supposed market failures: Banks hesitant to give loans to SME craftsmen and SME ESCOs to finance their EPC projects, lack of trust with EPC clients
- Solution: provide state-backed guarantees for EPC projects



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# 1. Experience with EPC credit guarantees: Outcome

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- Outcome: Less than a handful of guarantees were asked for. Program was terminated by end of 2017.
- Possible reasons:
  - tight market for craftsmen, enough “conventional” business, no need for new business models.
  - potential EPC-clients had better financing conditions
  - EPC complex/ unknown to potential clients
  - lack of good examples
  - legal market barriers for EPC

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# 1. Experience with EPC credit guarantees: Conclusion

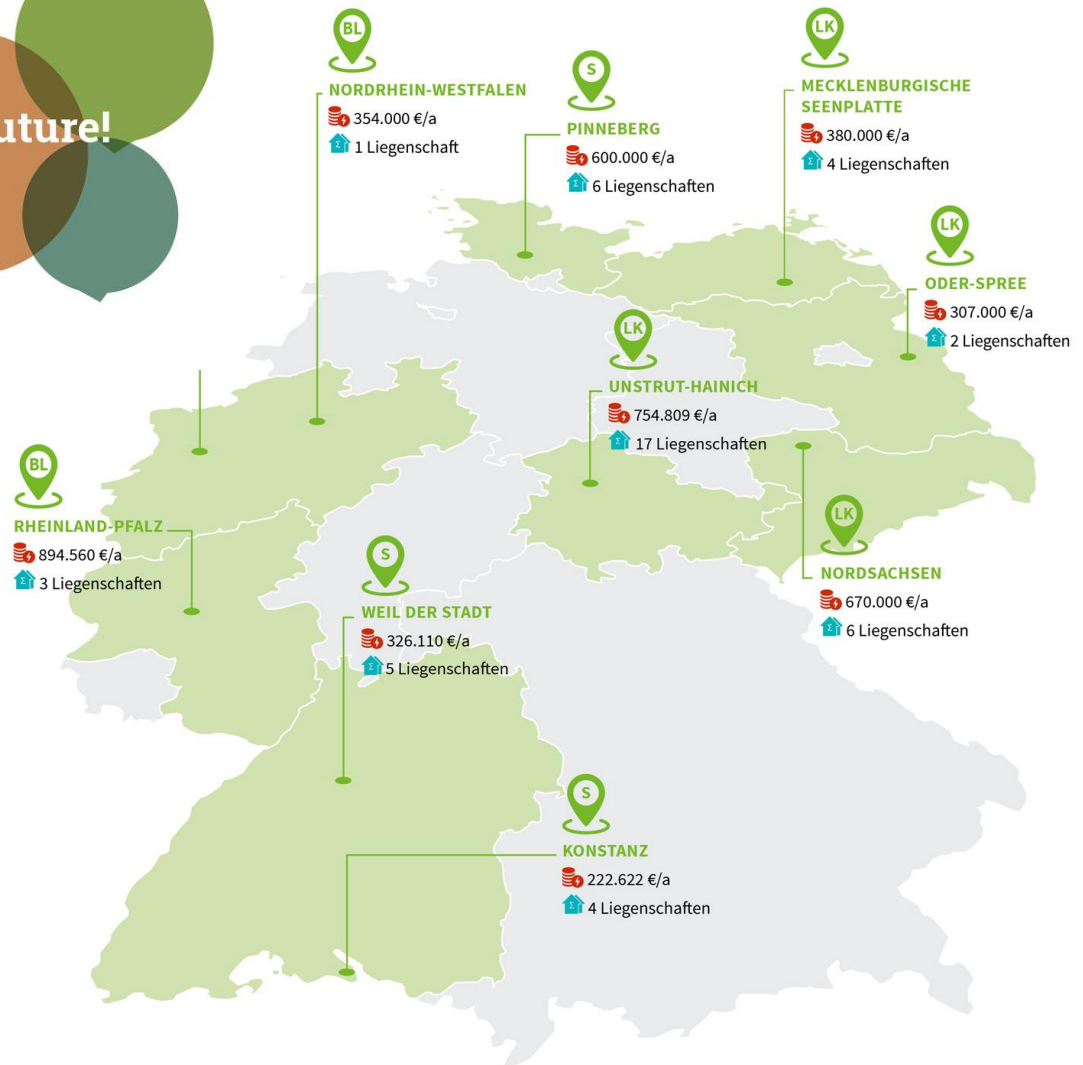
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- EPC no “sure-fire success”:
  - EPC is effective but complex: needs explanations
  - address other market barriers first
  - focus on demand side
- What we do now:
  - Create “good examples”: 10 model projects across German municipalities,
  - foundation of EPC expert centers in the 16 states
  - tackle legal and other barriers (in support programs, municipality financing rules, EU-state aid law...)

# Co<sub>2</sub>ntracting: build the future!

10 Model EPC  
model projects 2019-  
21:

<https://www.kompetenzzentrum-contracting.de/modellvorhaben/>  
(German only)




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# Why don't we see more investments in energy efficiency?

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Two important barriers:

Lack of information  
& time



- Compulsory energy audits (non-SMEs)
- **Energy consulting (SMEs)**
- Energy management systems
- Energy efficiency networks

Lack of financing &  
profitability



- **subsidized loans and grants for investments in energy efficiency & renewables**
- CO2-pricing (ETS and – starting in 2021 – for non-ETS sector on fossil fuels)



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## 2. Professional energy consulting support for SMEs

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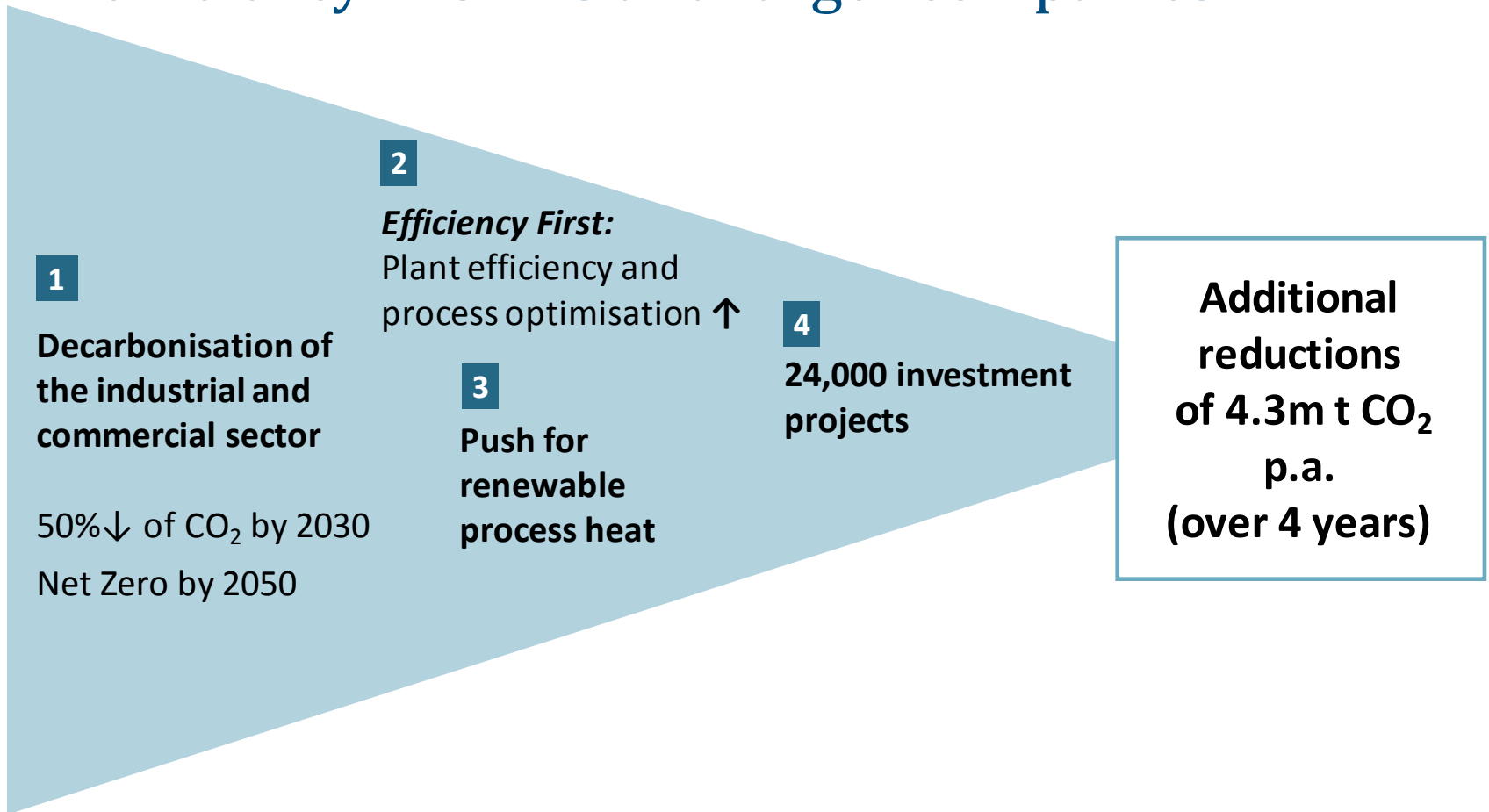
Grants of up to 80% (up to 6.000€) for

- energy audit (EN 16247)
- introduction of energy management systems (ISO 50001)
- suitability check for an EPC

### Procedure

- energy consultants have to be approved and listed
- lean procedure: consultant applies online for grant on behalf of SME, companies just pay 20% of the bill

### 3. Investment support program for energy efficiency in SMEs and larger companies



# 3. What support is available for companies?

	①	②	③	④
	<b>Efficient installations</b>	<b>Renewable process heat</b>	<b>Metering/ control / sensor technology</b>	<b>Combination of measures</b>
<b>What measures are support?</b>	Highly efficient plants and machinery (e.g. pumps, compressed- air)	Solar collectors biomass installations heat pumps	Technology and software for monitoring and controlling energy flows	Holistic optimisation of production processes (procedures, waste heat, insulation,...)
<b>Under what conditions?</b>	Technical requirements for the efficiency of plants and machinery. Investment: $\geq 2,000\text{€}$	Technical requirements for the efficiency of plants and machinery.	Energy and environmental management system (ISO 50001, EMAS; SMEs: German SpaEfV ordinance)	Technical requirements (as under 1 and 2) and energy audit carried out by a professional auditor
<b>How much?*</b>	30%, SMEs: 40% (max. $\text{€} 200,000$ )	45%, SMEs: 55% (max. $\text{€} 10$ million)	30%, SMEs: 40%	30%, $\leq 500\text{€}/\text{t CO}_2$ SMEs: 40%, $\leq 700\text{€}/\text{t CO}_2$ (max. $\text{€} 10$ million)**
<b>Who?</b>	Private-sector and municipal companies (both SME and non-SMEs), freelancers, contractors			

# Example 1: Aurubis & enercity Contracting Nord



# Example 1: Aurubis & enercity Contracting Nord

## Package of measures

Utilisation of the 1,400°C steam of the furnace for

- Process heat (within the plant)
- Retrofitting that allows residual heat to be fed into the Hamburg district heat network for use in hot water preparation and heating systems by more than 20,000 households

## Key figures of the project

- Costs: €32.8m
- Final energy savings: 160m kWh
- CO2 reductions p.a.: 20,000t
- Funding (30-40%)\*: ca. **€8m**
- *Additional environmental benefit:*  
Protection of the Elbe river ecosystem by reducing the amount of hot water fed into the river

\* On eligible cost

# Example 2: Production of waffles

## Package of measures

- Using integrated laser cleaning system
- Automating dough preparation
- Heat recovery from baking production line and compressors
- Using residual heat for electricity generation (ORC technology) and process heat

## Key figures of the project

- Overall costs: €1,340,000
- Eligible costs: €1,060,000
- Final energy reductions: 1,444 MWh
- Annual CO2 reduction: 395t
- Funding (30%): **€318,000**

# Example 3: Dairy plant

## Package of measures

- Heat recovery from whey pasteurisation, cleaning systems, steam boiler, compressed air system and compression refrigeration machine
- Insulation of tubes
- Flexible and needs-based pump control
- Optimisation of boiler pressure control

## Key figures of the project

- Eligible costs (without renewables): €612,200
- Final energy reductions: 2,400 MWh
- Annual CO2 reductions: 653 t
- Funding (30%): **€183,660**

# Other initiatives promoting energy efficiency:

- **Energy-efficiency networks** ([www.effizienznetzwerke.org](http://www.effizienznetzwerke.org))
  - Companies join together to pursue a common energy reduction target, receive advice from experts and learn from one another
- **Bringing research from universities to factories** (<https://eta-fabrik.de/forschung/projekt/eta-transfer/>)
  - Transfer of industrial research results in the area of energy efficiency
- **Energy Start-ups** ([www.dena.de/set-hub/](http://www.dena.de/set-hub/))
  - Support for innovative business models on the energy services market
- **Promoting flagship projects**
  - Communicating best practice examples on waste heat:  
<https://www.dena.de/themen-projekte/projekte/energiesysteme/leuchtturm-abwaerme/>
  - and CO<sub>2</sub>-avoidance: <https://www.co2-leuchttuerme-industrie.de/startseite/>



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# Thank you for your attention

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