

Financing of Energy-Efficiency Measures: Program Design / International Examples

**Workshop on Energy Efficiency in Buildings
European Commission, Joint Research Centre**

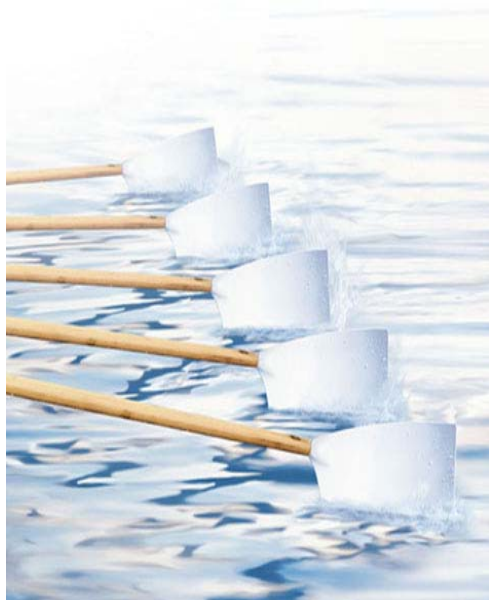
Moscow, 2nd of September 2010

Arne Gooss

Die Zukunftsförderer



- **Promotional Bank** of the Federal Republic of Germany (founded in 1948).
- **Shareholders:** Federal Republic of Germany (80%), German federal states (20%).
- Around **60 offices** and representations worldwide.
- Projects in **110 countries**.
- Balance sheet total at end-2009: **EUR 400 billion**.
- Commitments in 2009: **EUR 75 billion**.
- Number of employees: **4,200**.
- Rating: **AAA/Aaa/AAA**.



A bank with a wide array of functions



Domestic promotional business				
Promotion of SMEs, entrepreneurs, environmental and climate protection business start-ups	Promotion of housing, education, infrastructure and social development	Financing of municipal infrastructure projects and promotion in Europe	International project and export finance	Promotion of developing and transition countries
				

Our Reputation

A strong environmental and climate protection bank



- **KfW** is one of the **leading environmental and climate protection banks** world-wide.
- In 2009, **EUR 19,8 billion** outstanding for environmental and climate protection
- Climate protection is a priority. Commitments in 2009 amounted to:
EUR 17 billion for renewable energies and energy efficiency

**Broad experience as No. 1 Environmental Bank
in Germany**

1. KfW's EE Programs in Germany

1.1 Program for EE in SMEs

1.2 Program for EE in Residential Buildings

2. KfW's EE Approach in SEE

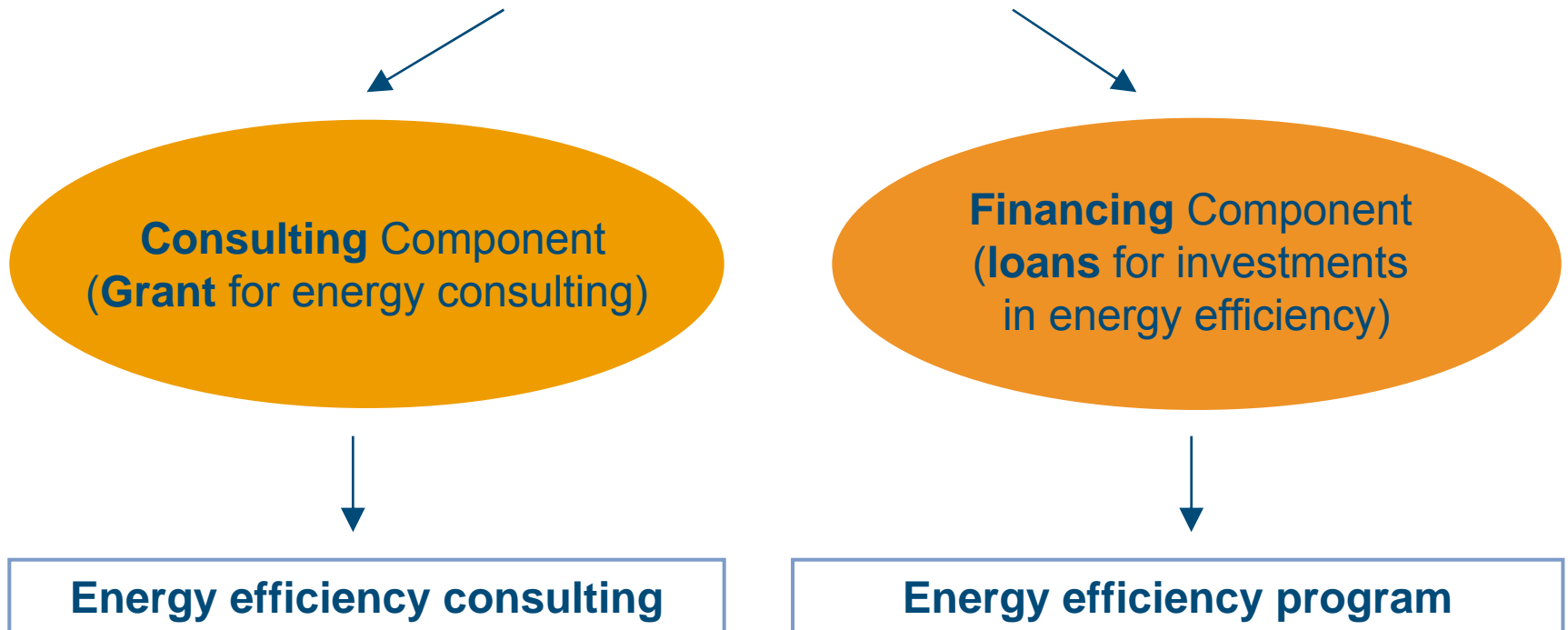
3. KfW's "Supply-Side" EE Approach in SEE



Objectives

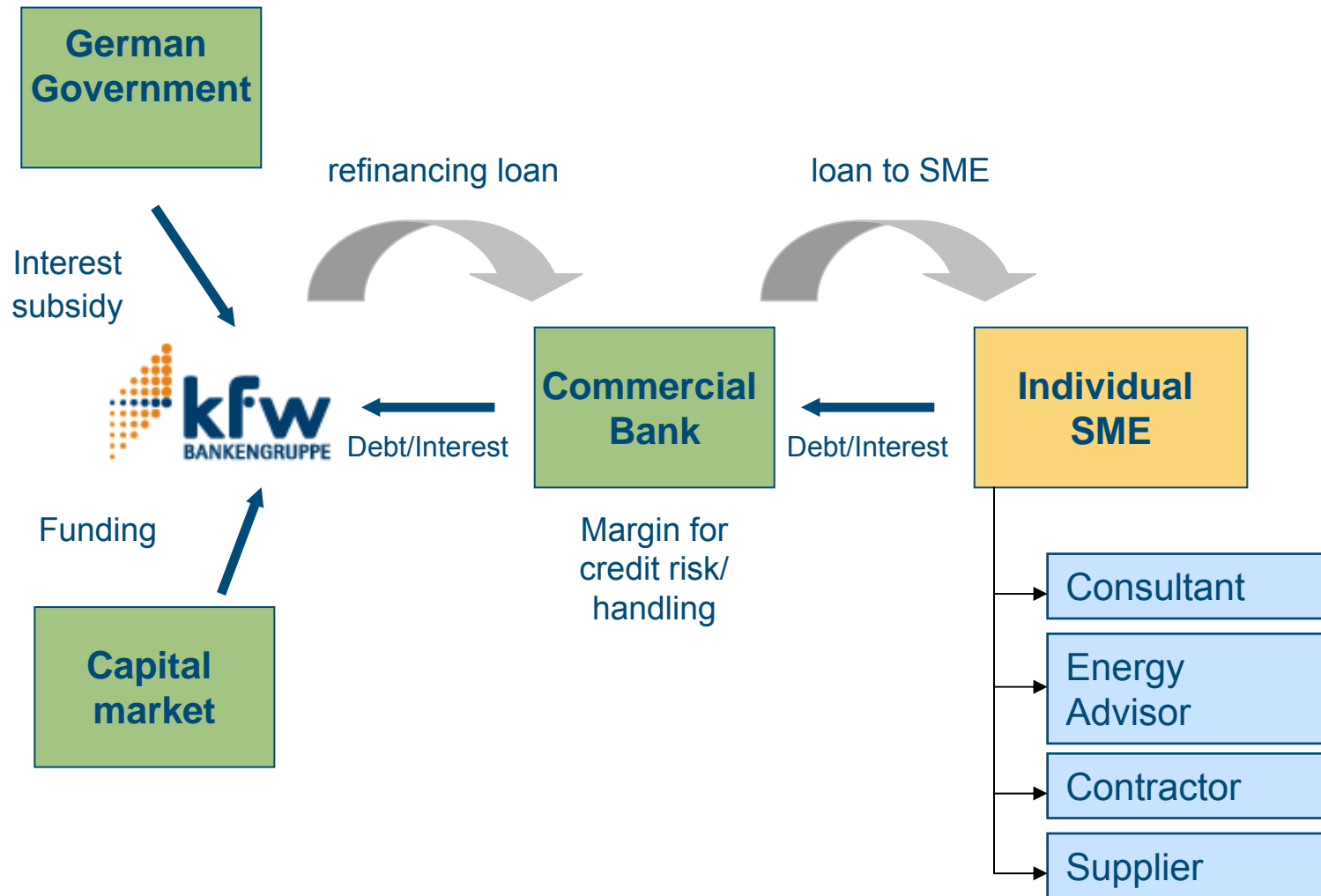
- reduce energy costs
- increase competitiveness
- speed up market penetration of innovative efficiency technologies
- reduce dependence on energy imports
- contribute to climate protection

“Special Fund for Energy Efficiency in SMEs“
Joint Initiative of the Federal Economic Ministry (BMWi) and KfW
(Launched February 2008)



Energy Efficiency in German SMEs

KfW's on-lending system



Promotional Measures

- facility and energy technology incl. heating, air conditioning, lighting, ventilation, hot water
- new buildings and upgrade of buildings according to Energy Conservation Directive (EnEV)
- machines (electrical drive mechanisms, pressurised air, pumps)
- process cooling/process heat
- heat recovery/waste heat utilisation
- measuring, regulating and control equipment
- information and communication technology

Key Results

- End-2009 more than **833 sub-loans** amounting to **EUR 400 million**



1. KfW's EE Programs in Germany

1.1 Program for EE in SMEs

1.2 Program for EE in Residential Buildings

2. KfW's EE Approach in SEE

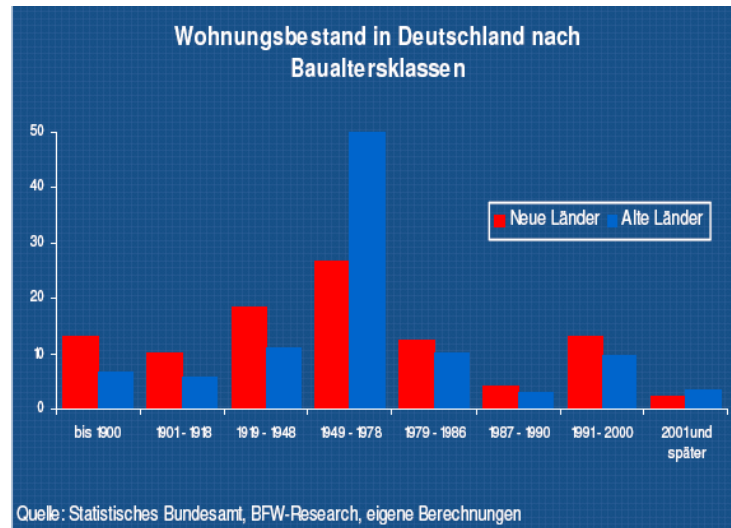
3. KfW's "Supply-Side" EE Approach in SEE

Building structure

Residential buildings (units) in millions

Total

17 (40)



constructed before 1979:

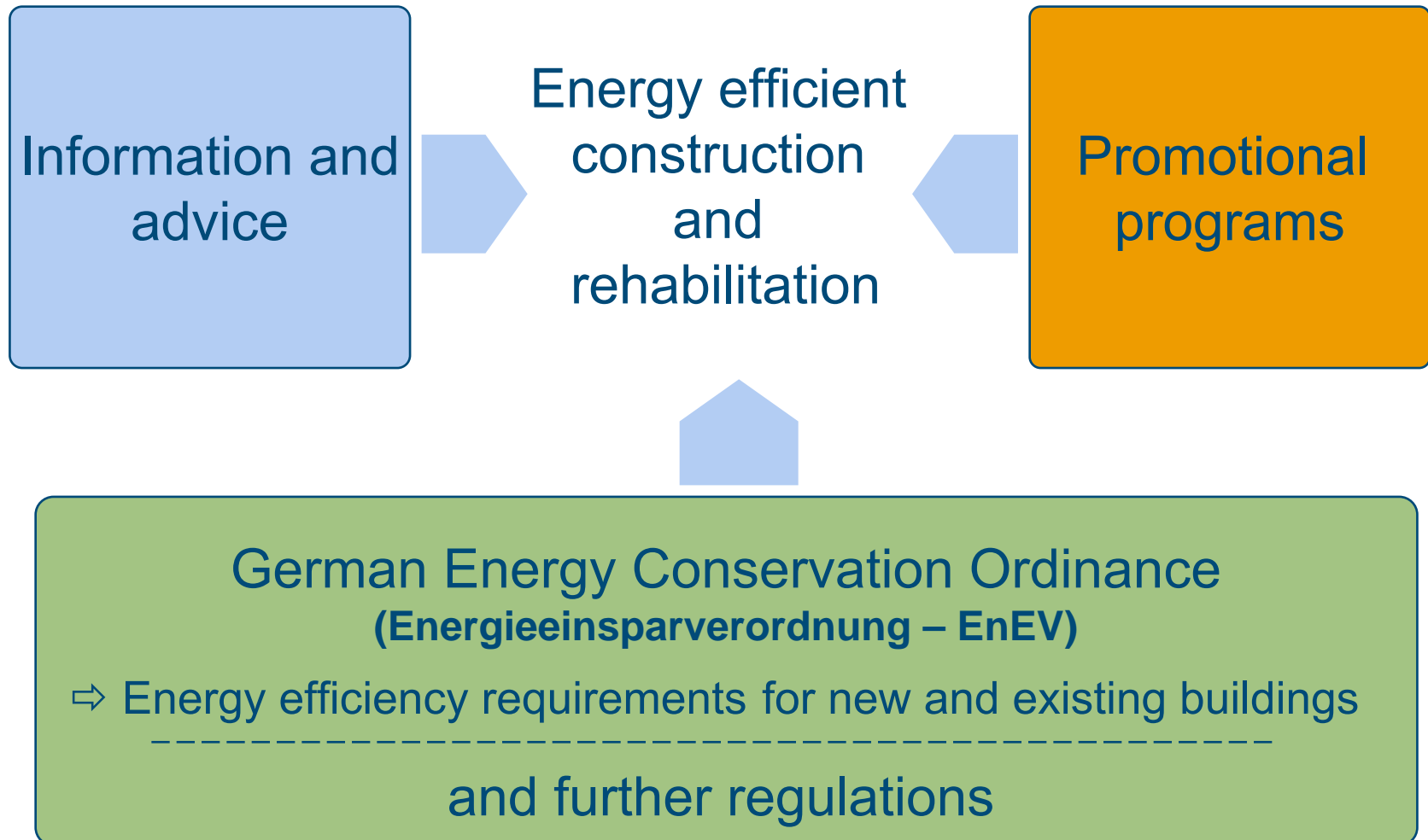
13 (29)

already rehabilitated (energy-eff.):

4.3 (9.7)

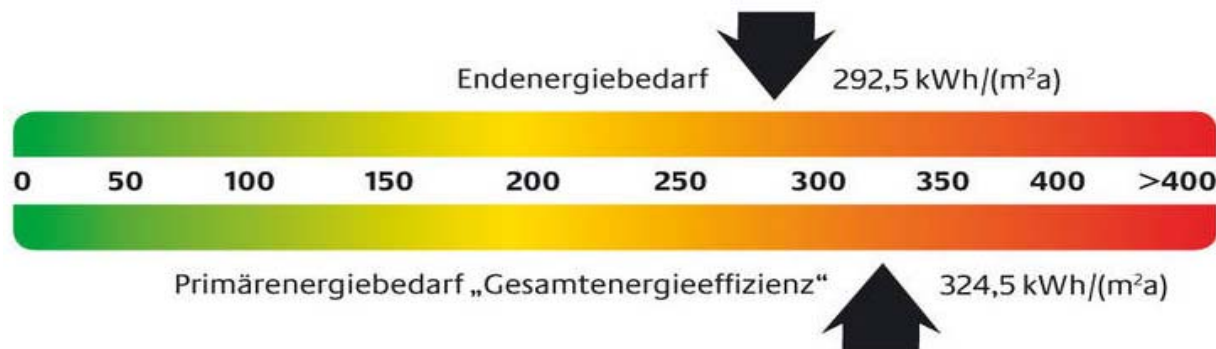
Still requiring rehabilitation:

8.7 (19.3)



The main Objectives are ...

- to **improve market transparency.**
- to mark energy efficiency as a **sign of quality** for flats and buildings.
- to **reduce energy demand in the building sector.**



New building

Energy-Efficient Construction

- promotional loans
- max. 50,000 EUR per housing unit
- KfW-Efficiency House standard

Building stock

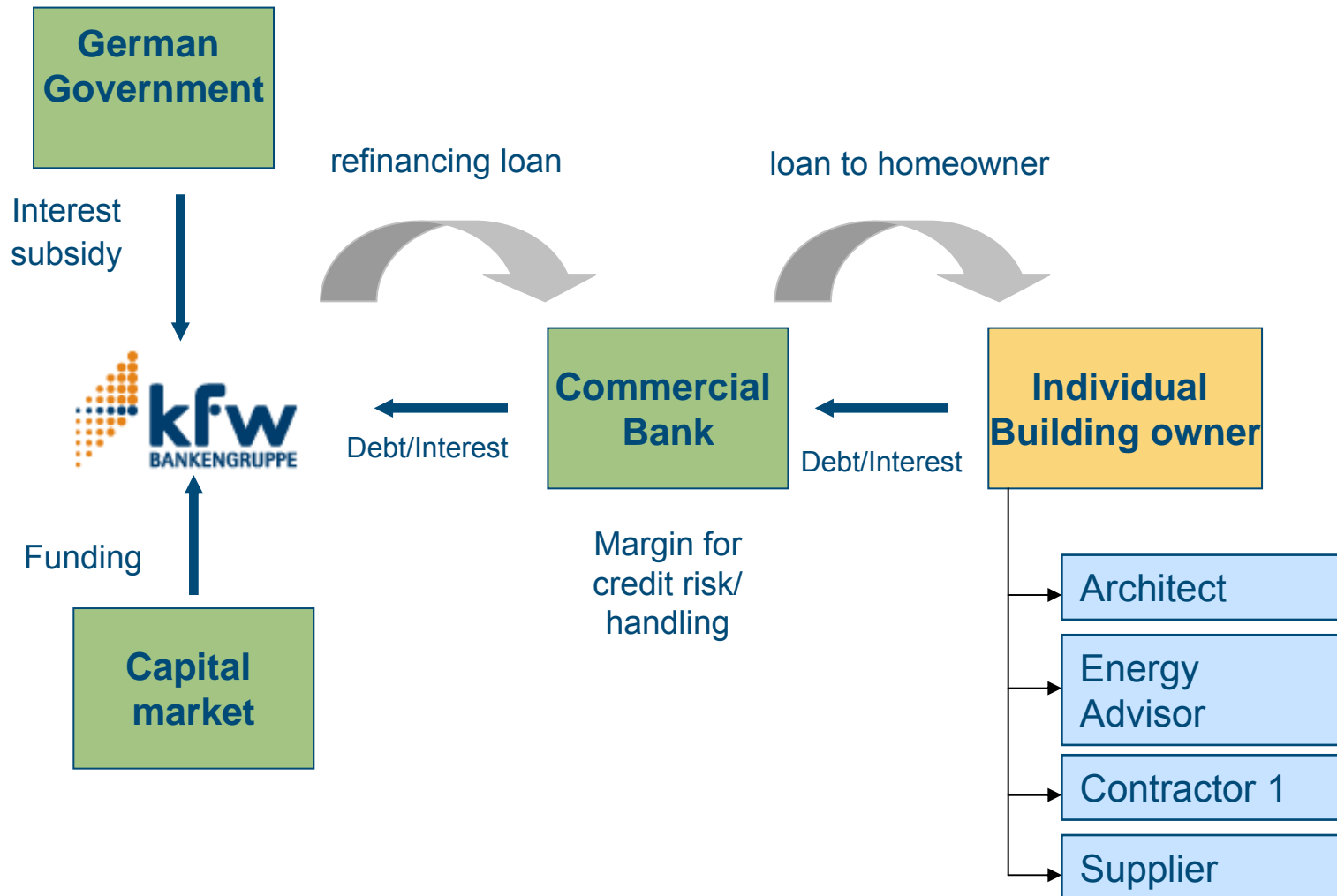
Energy-Efficient Rehabilitation

- promotional loans
- max. 75,000 EUR per housing unit
- KfW-Efficiency House standard or single measures

Higher energy efficiency means better conditions.

Energy Efficiency in the German Housing Sector

KfW's on-lending system



Energy Efficiency in the German Housing Sector

Promotional Program Effects

Year	Loan commitments (EUR)	Supported investments (EUR)	Supported housing units	Employment effects
2006	7 billion	over 11.8 billion	over 327,000	217,000
2007	5 billion	over 10.7 billion	over 204,000	177,000
2008	5.6 billion	over 11 billion	over 230,000	183,000
2009	8.9 billion	over 18.3 billion	over 617,000	292,000

since 2006 a **reduction in CO₂ emissions** by approx. **3.9 million t p.a.**

Energy Efficiency in the German Housing Sector

Promotional Campaigns



1. KfW's EE Programs in Germany

1.1 Program for EE in SMEs

1.2 Program for EE in Residential Buildings

2. KfW's EE Approach in SEE

3. KfW's "Supply-Side" EE Approach in SEE

Energy Efficiency in Southeast Europe

The Challenges to Effective & Efficient Implementation

Germany



- **Inadequate information** on available **energy saving potential**
- **Insufficient knowledge of energy technology** (no in-house energy experts)
- Not sufficiently motivated because **energy costs** account for a **minor portion of overall costs**
- **Lack of financial resources**

Southeastern Europe



- **Low awareness** of energy efficiency
- **High energy intensity** due to inefficient production processes and old or incomplete buildings
- **High GHG-Emissions** due to out-dated equipment
- **Energy shortages** due to economic growth
- Low, but gradually **increasing energy tariffs**



Our goals are to improve on KfW's proven experience and achieve:

- 20% energy savings and reduction of greenhouse gasses
- Implementation of a widespread, standardized and established EE loan product
- Awareness raising of EE within partner banks and borrowers
- An increase in competitiveness for sub-borrowers
- A quicker market penetration of innovative efficiency technologies
- A reduction in dependence on energy imports

EE Approach One: SME & Housing



Sub-loan Volumes

- Up to EUR 1 million
- Average sub-loan volume:
 - SME EUR 100,000 – 200,000
 - Housing EUR 15,000



EE Approach Two: Industry



Sub-loan Volumes

- Between EUR 1 and 5 million



EE Instruments

- Credit lines to partner banks
- Technical Assistance

KfW Energy Program for Southeast Europe

Approach - Technical Assistance



Housing



- Improve lighting
- Building envelope improvements
- Heating system modernisation
- Meters for measuring

SME & Industry



- Building envelope and heating system improvements
- Replacement of production machinery
- New Lighting
- Compressed air systems

Results (May 2008 – Jan 2010)

- **15 financial partner** institutions in **8 countries**
- Loans distributed so far: **194 Mio. EUR**
- Distributed loans to end borrowers of **EUR 39.4 million / # 2,376**

- Annual energy savings of **30.0 million kWh** and **9,834 tons** in CO2 emissions

- Average loan sizes: EUR 115,000 (KMU), EUR 2,200 (Housing)

- **CO2 reduction** (average per investment): 30%
- **Energy savings** (average per investment): 25%

KfW Energy Program for Southeast Europe

Example Marketing



Renovation loan for using energy saving technology



ProCredit Bank

ПроКредит Банк

www.procredit.com.ua

ПроРемонт



кредит на ремонт з використанням технологій енергозбереження

- ✓ To obtain ProRemont Eco loan
- ✓ To change windows, radiators, to warm walls
- ✓ To save energy, money => ..to improve ecology

- ✓ Беремо кредит ПроРемонтЕко
 - ✓ Замінюємо вікна, радіатори, утеплюємо стіни
 - ✓ Зберігаємо світло, тепло, гроші
- ⇒ **Покращуємо екологію**

☎ 440 44 10 пр. Металургів, 22а

Ліцензія НБУ №195 від 13.10.2003 р.



ПроРемонт Еко

кредит на ремонт з використанням технологій енергозбереження

- ✓ Сума кредиту до 100 000 грн.
- ✓ 25 000 грн. – видаємо без застави
- ✓ Термін кредитування – до 36 міс.



Restaurant in Belgrade, Serbia

Volume:

- Total investment ca. EUR 50,000
- Loan from Cacanska Banka: EUR 30,000

Investment:

- 5 solar panel for warm water heating; enough to heat/feed 500 l water boiler
- Geothermal under floor heating and cooling for restaurant area

Impact:

- Reduction of electricity bill during July and August approx. EUR 600-700 per month (reduction of 40 %)
- Savings in energy consumption: 233,000 kWh/a
- Savings in CO2 emissions: 84 T.P.A.
- Payback period: 4 years
- Owner will introduce solar panels also for private use
- New client for Partner Bank



Chicken Farmer in Mladenovac, Serbia

Volume:

- Total investment c.a. EUR 17,500

Investment:

- Biomass Oven fueled by farmer's existing grain production

Impact:

- Complete avoidance of diesel fuel bill (EUR 1500/Month) via conversion
- Savings in energy consumption: 584,000 kWh/a
- Savings in CO2 emissions: 402 T.P.A.
- Payback period: 1 year





SPECIAL INVESTMENT FACILITY:

The Green for Growth Fund Southeast Europe



Objectives:

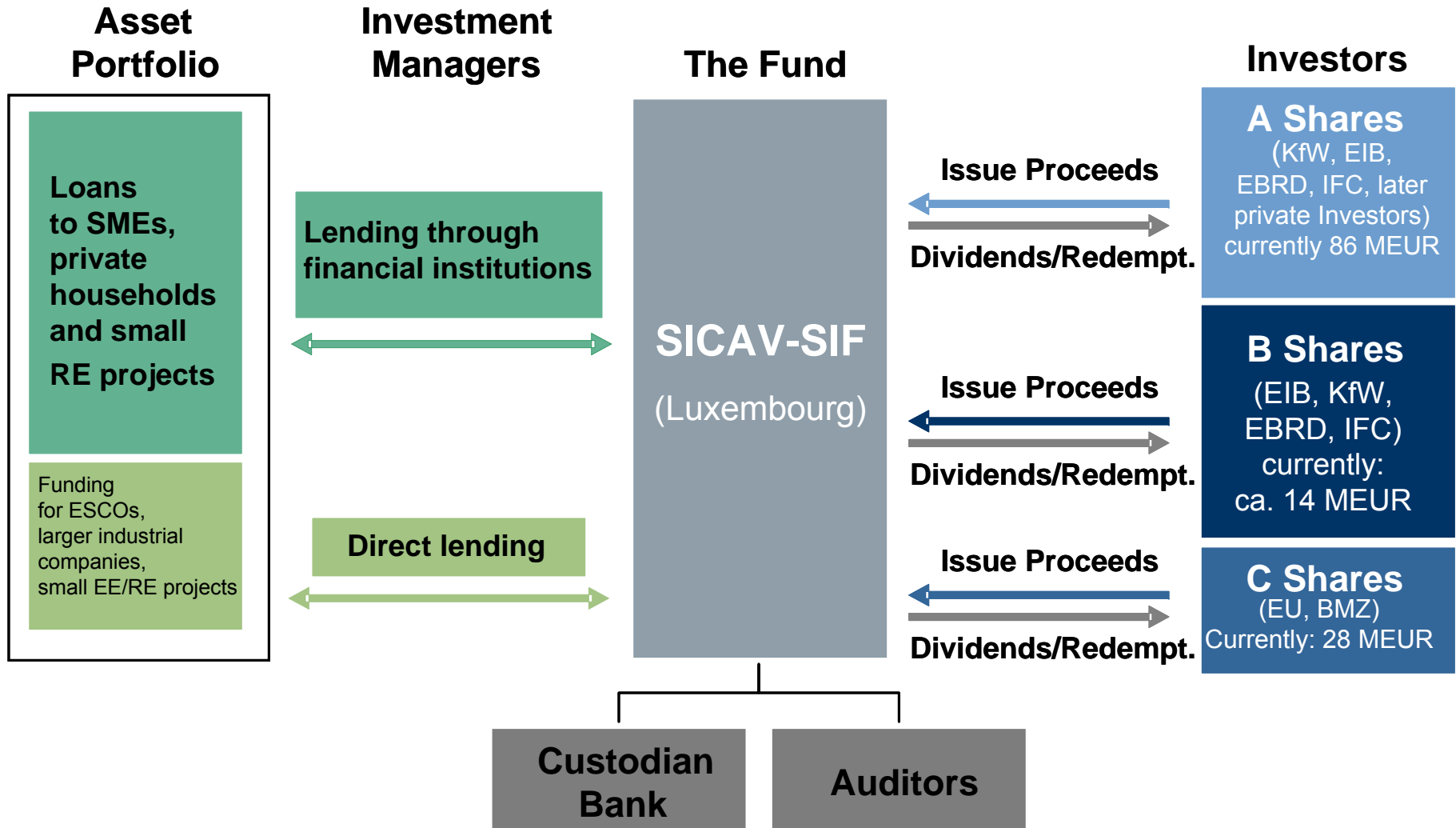
- Provide additional development financing for EE and small RE projects to broaden the financial base for these kind of investments in the Southeast European Region;
- **Address specific needs of underserved market segments**
- Increase awareness of EE / small RE investments
- **Contribute to broadening and deepening the financial sector**
- Harmonize and coordinate donor initiatives
- **Attract additional private capital for investments**

Target Partner Institutions:

- Financial Institutions committed to finance EE demand side investments of SMEs and private households
- **ESCOs, industrial companies**
- Others

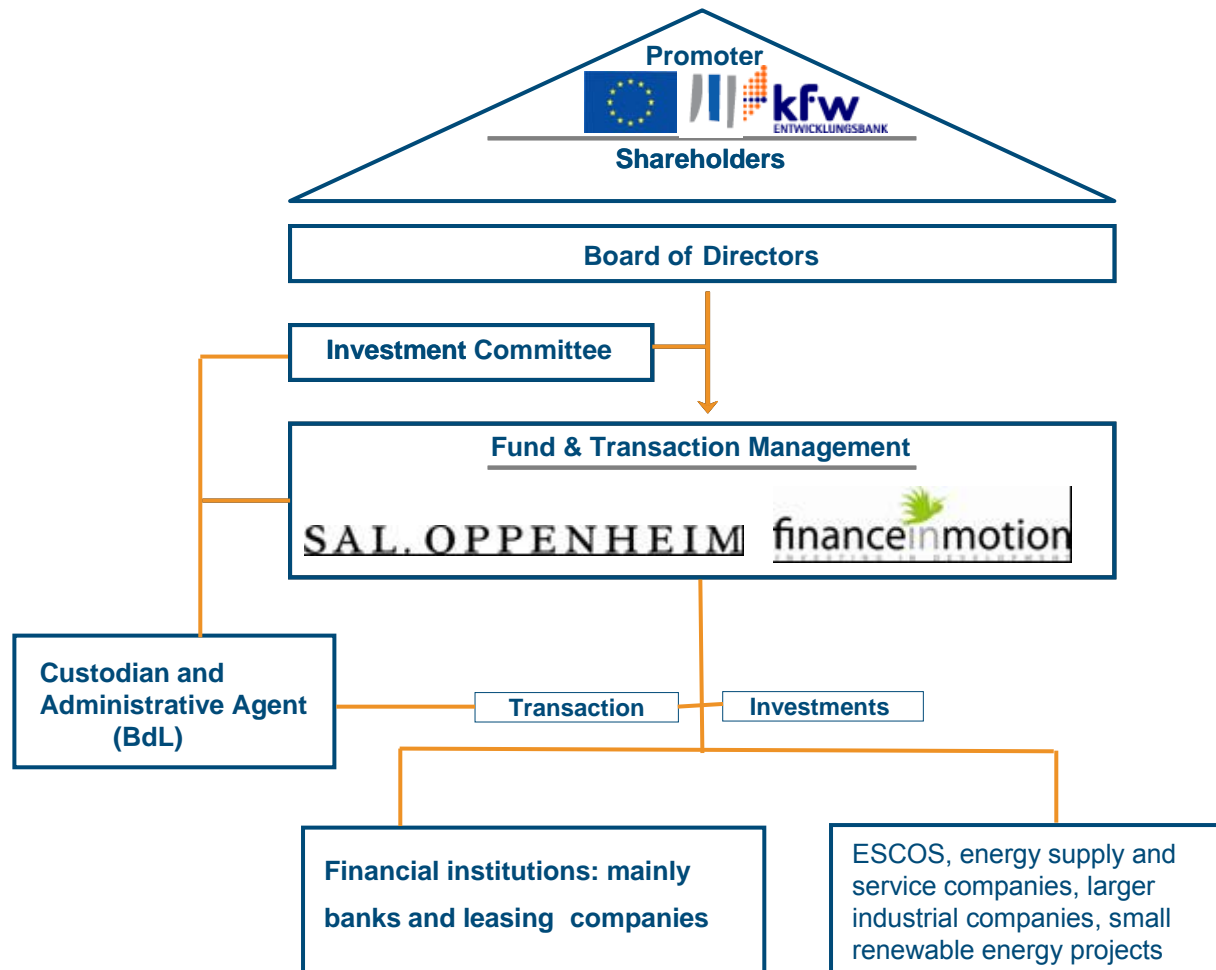
KfW Energy Program for Southeast Europe

Fund Structure



KfW Energy Program for Southeast Europe

Fund Organisation





1. Fund will operate on a sustainable basis.
2. **Eligibility criteria and verification of energy savings must not create prohibitive costs for banks or end-borrowers.**
3. The fund should achieve 20% energy savings and/or 20% CO2 savings across its EE portfolio and promote the use of renewable energy sources.
4. **The investment criteria will take into account national standards and auditing procedures, while ensuring consistency with European Legislation on Energy Efficiency and Renewables.**

Differentiated approach by product / customer class.

Flexibility to adapt to the market environment.

1. KfW's EE Programs in Germany

1.1 Program for EE in SMEs

1.2 Program for EE in Residential Buildings

2. KfW's EE Approach in SEE

3. KfW's "Supply-Side" EE Approach in SEE

“Supply-Side” EE Projects

Infrastructure Project Financing



More than 1 bln. EUR commitments in Eastern Europe/Central Asia for Regional and Urban Infrastructure-related Energy-Efficiency Projects:

- Regional power transmission and distribution (electricity and gas)
- Hydropower (small and medium)
- Renewable Energy (Wind, Biomass)
- District Heating (CPG)
- Waste-to-Energy (Biomass/Biogas)
- Transportation

KfW is very interested to:

- **share knowledge** with interested partners and
- **further develop** relevant Projects and Programs in Eastern Europe and especially in Russia

focussing the area of **Energy Efficiency**.

Thank you for your attention!

Arne Gooss

Principal Project Manager
Energy and Transport
East Europe, Caucasus, Central Asia
KfW Development Bank

KfW Bankengruppe

Palmengartenstraße 5–9
60325 Frankfurt am Main

Fon 069 7431-4069

Fax 069 7431-2547

Arne.Gooss@kfw.de