

Financial and Economic Aspects of Energy Saving within the Framework of CSRC Approach



IFC in Baltic Countries – Consultant's
view on energy efficiency program

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Management Consulting*

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The experienced partner in the energy sector

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Commercializing Energy Efficiency Finance program in Baltic Countries

A. Our firm and its mission:

The experienced partner in the energy sector

We are the leading consulting company for the European energy sector

Team

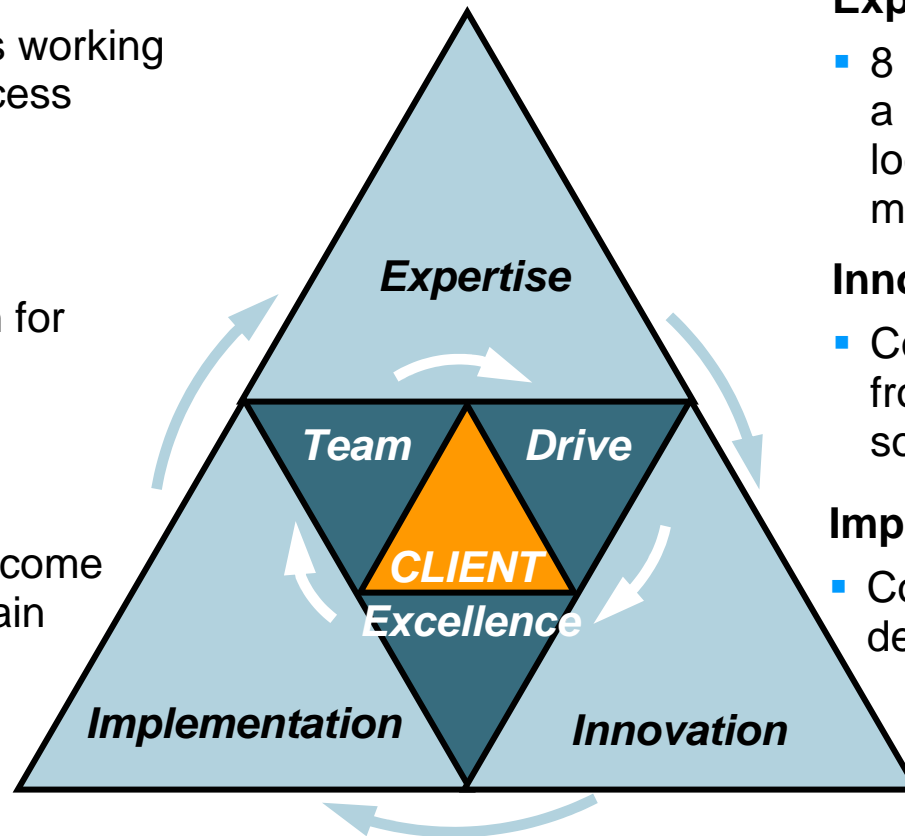
- 100 energy experts working for our clients' success

Drive

- We have a passion for improvement

Excellence

- Most of our clients come back again and again



Expertise

- 8 offices in Europe providing a thorough knowledge of local and global energy markets

Innovation

- Competitive advantages from innovative business solutions

Implementation

- Complete commitment to delivering tangible results

We provide a cross-European network



- 8 offices in Europe:
 - Hamburg - Milan - Villach
 - Helsinki - Oxford - Zurich
 - Madrid - Vienna
- About 100 energy market experts

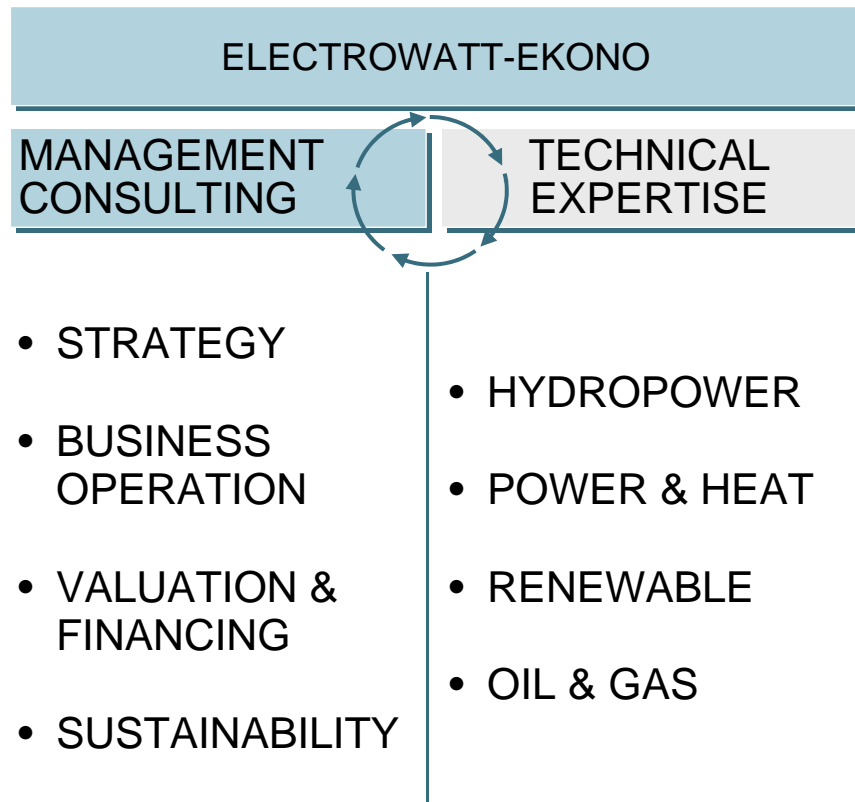


- In the last two years Electrowatt-Ekono has reinforced its European presence with ILEX Energy Consulting (based in Oxford) and Verbundplan (based in Vienna)

“... ELECTROWATT-EKONO is the leading Management Consultant in the European energy sector...”

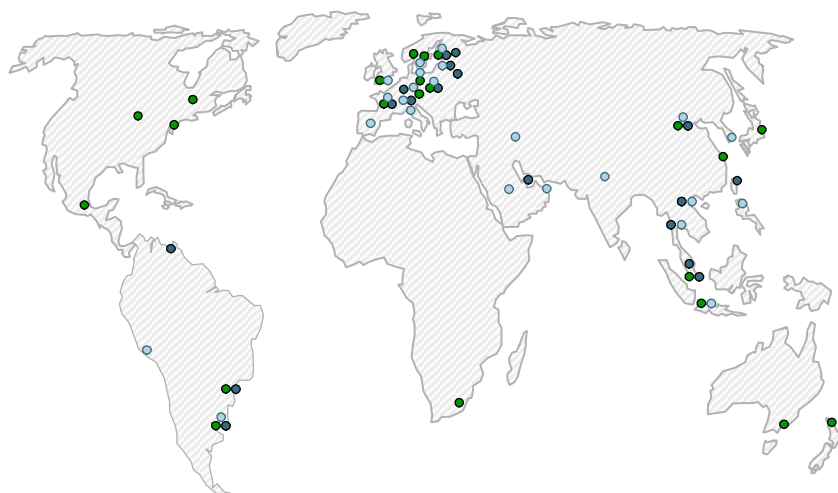
(Il Sole 24 Ore)

We are the management consulting division of Electrowatt-Ekono ...



- Electrowatt-Ekono combines energy market expertise with technical and engineering expertise in:
 - Hydropower
 - Power & Heat
 - Renewable
 - Oil & Gas
- The management consulting division is focused on four areas:
 - Strategy
 - Business Operation
 - Valuation & Financing
 - Sustainability
- Our focus on the energy sector and integration with our technical experts affords Electrowatt-Ekono Management Consulting a unique insight on the energy market

...and part of Jaakko Pöyry, a worldwide leading group in Energy, Forest and Infrastructure & Environment



Jaakko Pöyry Group is a consulting and engineering company with three divisions:

- ENERGY (ELECTROWATT-EKONO)
European leader in energy engineering and consulting
- FOREST INDUSTRY
Worldwide market leader
- INFRASTRUCTURE & ENVIRONMENT
Leading position worldwide

JAAKKO PÖYRY 2004 RESULTS	FOREST INDUSTRY	ENERGY Electrowatt-Ekono	INFRASTRUCTURE & ENVIRONMENT	Group total
Revenues [M€]	186	146	142	474
Employees	2'077	1'485	1'715	5'277
Offices	18	22	12	52

B. International Finance Corporation

International Finance Corporation

Mission

- "IFC's mission is to promote sustainable private sector investment in developing countries, helping to reduce poverty, and improve people's lives



International Finance Corporation

Role as a Partner in Clean-Tech Energy

- Specializing in project based investments in developing countries
- Environment and social development expertise
- Investing capital in renewable energy and energy efficiency projects, clean-tech energy companies, carbon related businesses and products

International Finance Corporation

Activities in Clean-Tech ventures

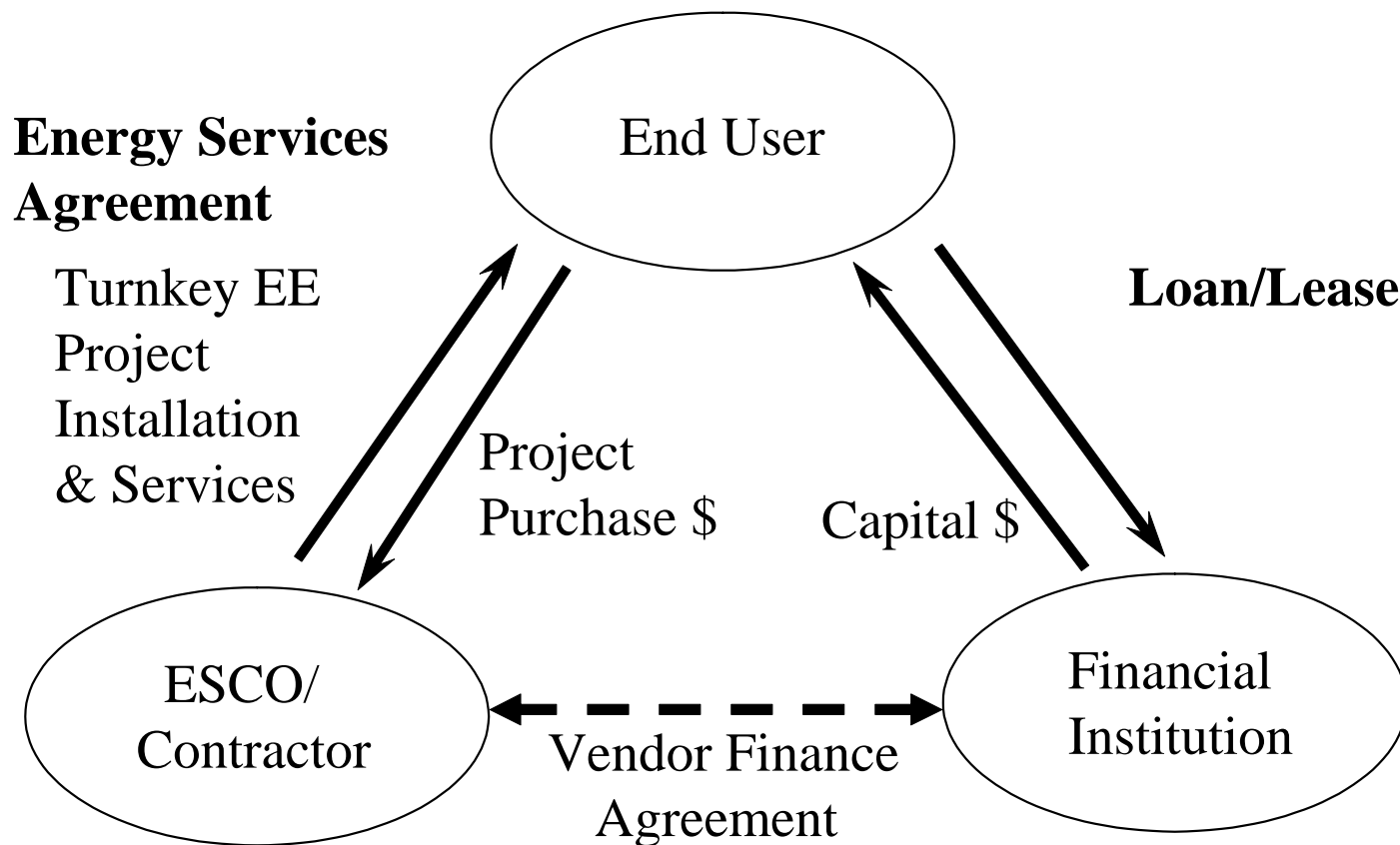
■ Type of activities

- Greenfield projects or expansion of existing facilities
- Privatization / expansion
- Concession / local or foreign sponsors / joint ventures
- Public private partnerships

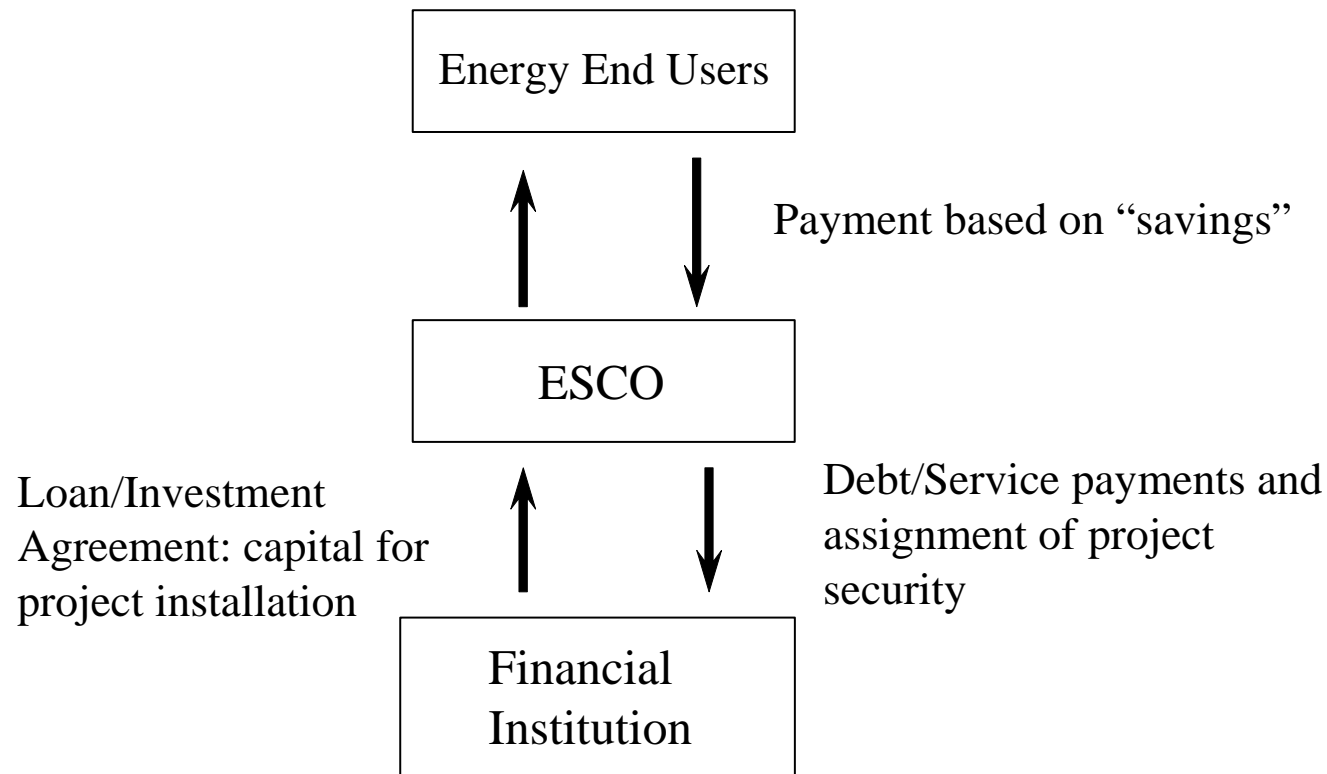
■ Types of financing models

- Project finance
- Holding company investments
- Carbon finance
- Blended technical assistance, loans, equity and risk sharing offerings to projects
 - Renewable generation
 - Energy efficiency

*Alternative finance models:
End user as borrower – Vendor finance program*

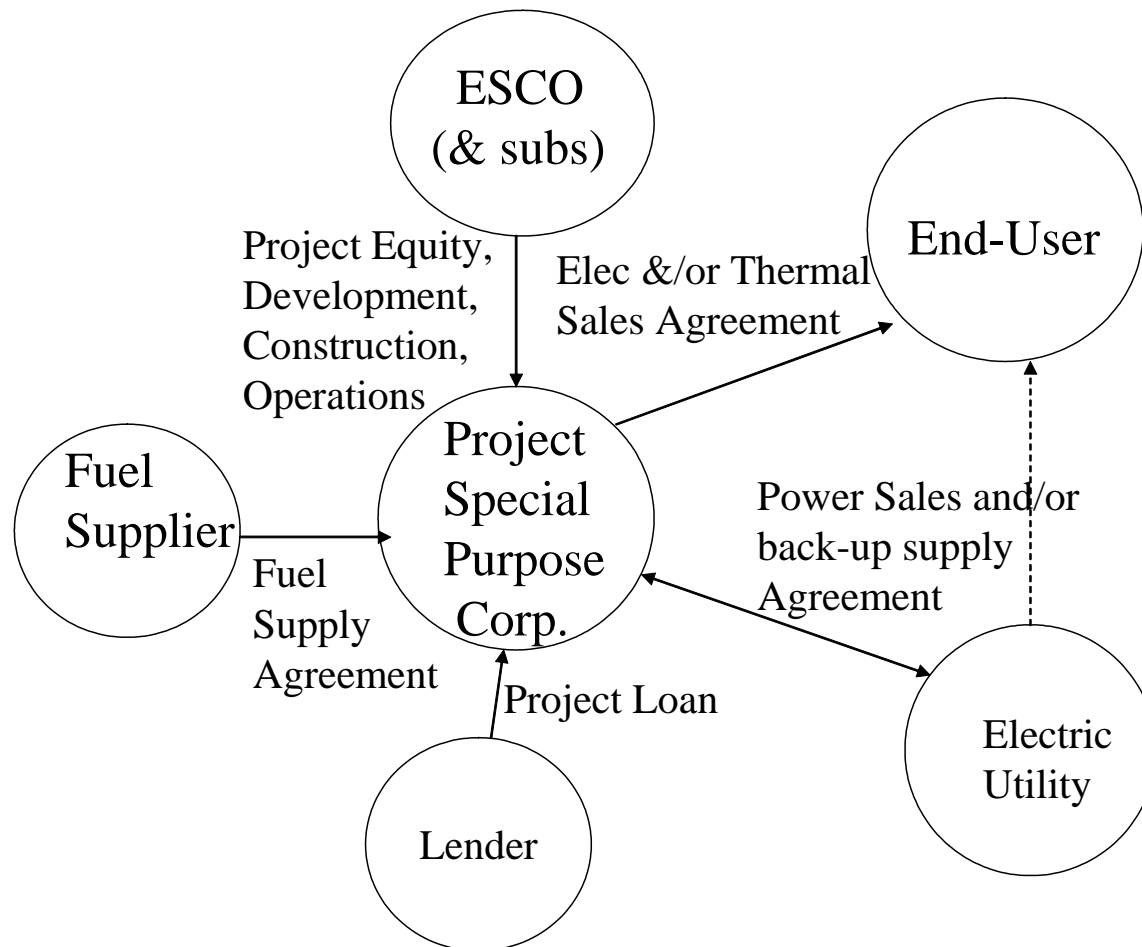


Alternative finance models: ESCO as borrower –Performance Contract Structure

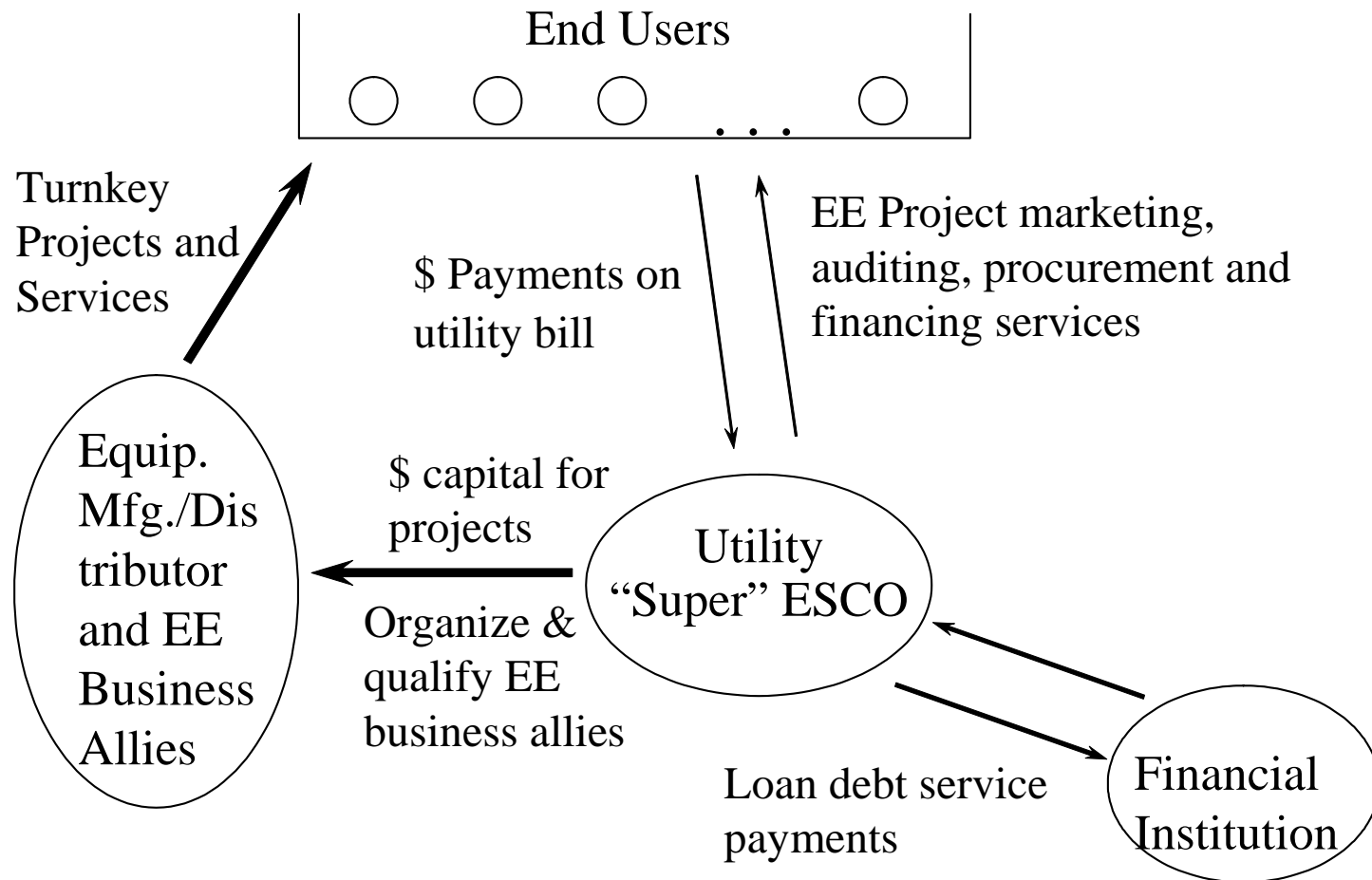


Alternative finance models:

Typical Cogeneration Project Structure



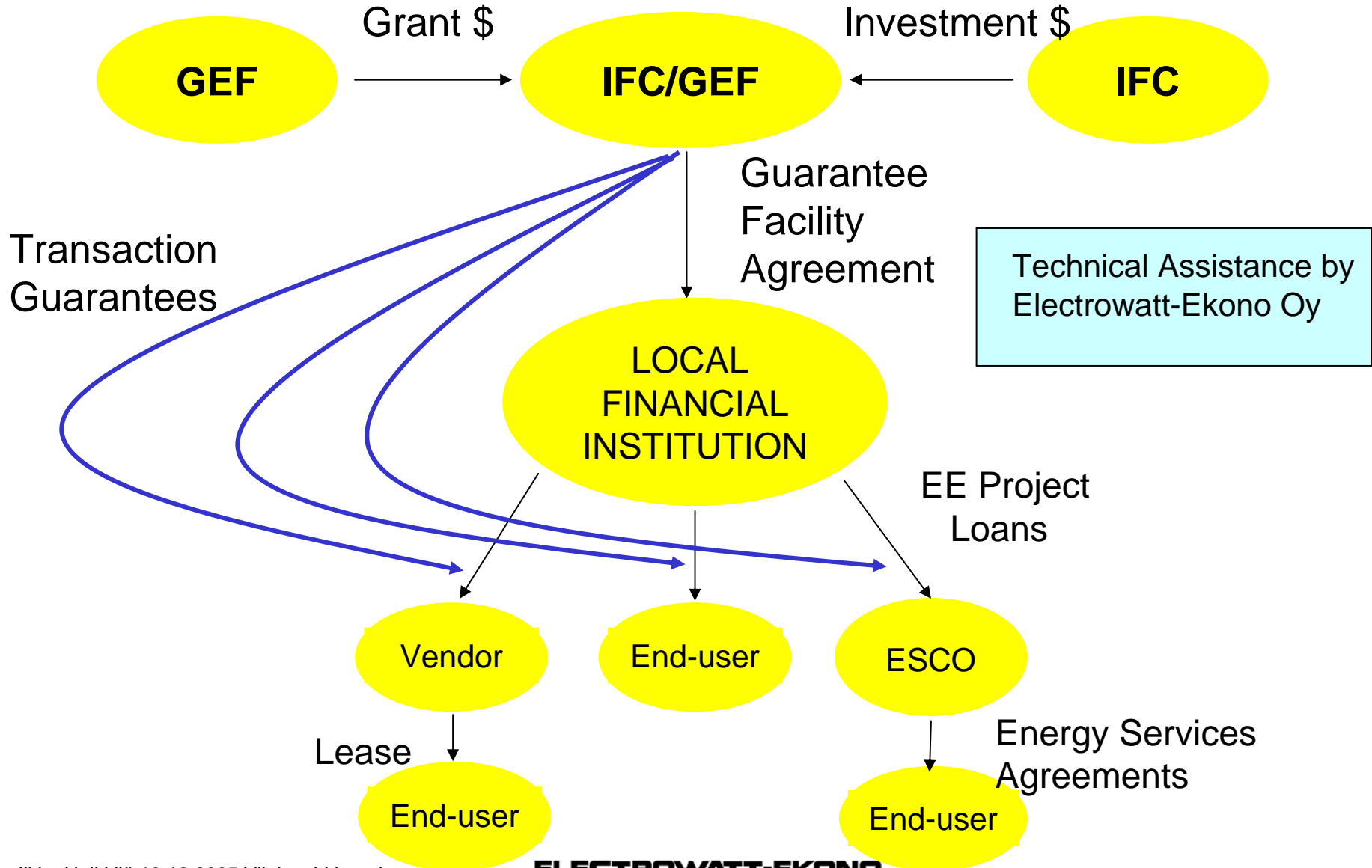
Alternative finance models: "Super ESCO" Program



C. CEEF

Commercializing Energy Efficiency Finance (CEEF) in Baltic Countries

IFC Commercializing Energy Efficiency (EE) Finance Programme in Baltic countries



Technical Assistance for Commercializing Energy Efficiency Finance Program in Baltic countries

- Technical Assistance of Electrowatt-Ekono's contract was financed by IFC through Finnish Trust Fund
- Electrowatt-Ekono won a tender arranged in January 2003
- Initial contract start March 1, 2003 and completion February 28, 2004
- IFC increased the budget and extended the contract validity until December 31, 2004

Project implementation

- Electrowatt-Ekono provided according to TOR the TA for four tasks:
 - Energy Audit Program
 - Training and Market Promotion for EE/SME Businesses
 - Project Transaction and Finance Structuring Support to EE/ESCO Businesses
 - Working with FIs
- Practical work arranged by Task Order (TO) system
- TO very much demand (and not TOR) driven, based on actually identified projects
- TOs prepared by the IFC in co-operation with Electrowatt-Ekono
- Work was divided between Electrowatt-Ekono and local consultants, according to the contract up to 25% of the contract sum may be spent of local consultants
- Work of the local consultants was managed by Electrowatt-Ekono

Training session in Riga for IFC CEEF Team

In April 2003 with the topics:

- Energy Efficiency project transaction management
- Energy efficiency technology (in buildings)
- Features of Modern (District) Heating System
- Features and Energy Saving Potential in Old & Ineffective Heating Systems
- Principles of Cogeneration of Heat and Power Production (CHP)
- Case studies about heating systems and reconstruction projects
- Energy Efficiency Improvements in Industry
- TA Menu: Presentation and Discussion

Training session in Riga for IFC CEEF Team



Technical assistance for establishing co-generation gas engine at a commercial greenhouse in Latvia

- May, June and July 2003
- Review and commenting of design documents of the co-generation (heat 1.7 MW / power 1.7 MW) gas engine project
- Assisting IFC's team in decision making process regarding financing of the project implantation
- Calculation of energy savings, energy cost savings and reduction of CO2 emissions savings resulting from implementation of the co-generation station project
- The task resulted in the investment / financing decision

Technical assistance for establishing co-generation gas engine at a commercial greenhouse in Latvia



Assessment of Energy Efficiency Investment Plan of a Latvian Paper Mill

- September, October, 2003
- The Paper Mill is implementing a new company strategy and as part of this strategy, an Energy Efficiency Investment Plan has been developed in co-operation with the engineers of the Mill, local consultants and equipment suppliers
- Electrowatt-Ekono Oy carried out an assessment of Energy Efficiency Investment Plan in order to evaluate the rationality of the proposed investments.
- The results of the assessment were presented in a report supplied to IFC and the Paper Mill
- The task resulted in the investment / financing decision

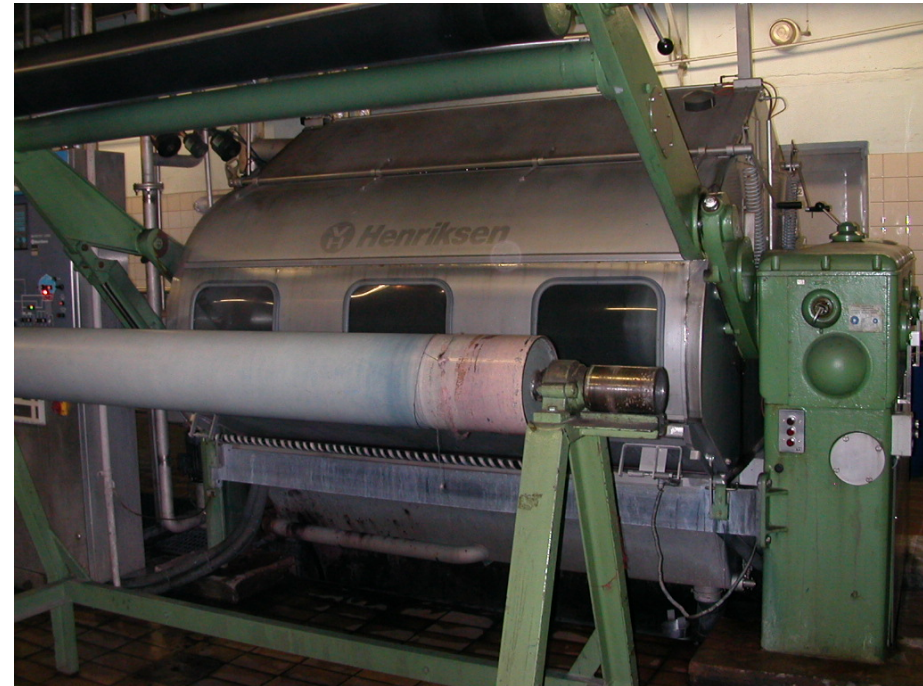
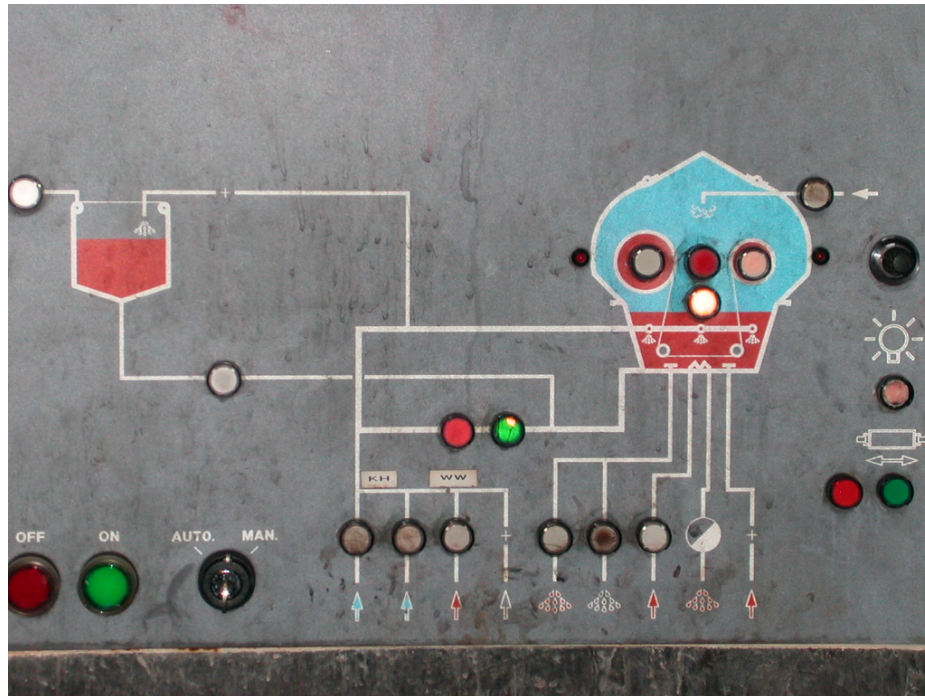
Assessment of Energy Efficiency Investment Plan of a Latvian Paper Mill



Preliminary Assessment of alternative Energy Efficiency project proposals in a Lithuanian textile factory

- December 2003, January 2004
- Preliminary analysis on Financial Performance and Status of the textile company
- Review of energy service alternatives for a Lithuanian textile factory
- Recommendations for the future actions regarding energy service of the factory
- Preparation of the report
- The task resulted in the investment / financing decision

Preliminary Assessment of alternative Energy Efficiency project proposals in a Lithuanian textile factory



Preliminary assessment on the institutional, financial and technical status of a Lithuanian District Heating company (based on one day site visit)

- December 2003
- Clarification the institutional situation of the company
- Review the proposed investments
- Collection of technical and financial data on the company.
- Preparation of the findings and recommendations on succeeding actions for IFC CEEF team

Preliminary assessment on the institutional, financial and technical status of a Lithuanian District Heating company (based on one day site visit)



Assessment of landfill biogas fuelled co-generation project in Estonia

- October – November 2003
- A biogas company has since 1995 carried out environmentally friendly biogas production in an Estonian landfill with one CHP unit
- As the project has been financially feasible, the company is planning to install an additional production unit
- Electrowatt-Ekono carried out the assessment of the feasibility study, prepared by a local consulting company
- Assessment included technical and financial feasibility, estimation of the environmental impacts and project contractual issues

Technical review of reconstruction project for heat substations and internal installations in a town in Latvia

- October-November 2004
- The reconstruction project was designed by the municipal housing company with local consultants
- Electrowatt-Ekono conducted a technical review of the project with the objective to estimate the energy savings in residential buildings and validated the economic justification of the project
- Assessment included determination of the volume of energy savings and environmental benefits
- Risk analysis and recommendations for the next steps for the project were presented

Technical review of reconstruction project for heat substations and internal installations in a town in Latvia



Assessment of landfill biogas fuelled co-generation project in Lithuania

- December 2004
- IFC identified a Landfill Biogas project in Lithuania
- CHP engine 1101kWe / 1450 kWh with an option to extension 2 x 1101kWe / 1450 kWh
- Electrowatt-Ekono carried out the assessment of the feasibility study, prepared by a local consulting company
- Assessment included technical and economical feasibility, estimation of the environmental impacts and project contractual issues
- Risk analysis and recommendations for the next steps for the project were presented
- The energy company utilising biogas for CHP production is on the edge of the commercialisation

The Preliminary Assessment of the DH system renovation project proposal of a Latvian town

- December 2004
- Preliminary assessment of available documentation and project plans, questions and issues raised
- Walkthrough energy audit
- Preparation of Preliminary Assessment Report commenting on:
 - rationality of the proposed investments
 - assessment of the proposed technologies/equipment,
 - estimation of energy savings and emission reductions in the projects,
 - assessment of project implementation cost vs. reductions in energy costs
 - technical & economical feasibility analysis
 - recommendations for next steps in preparing the investment proposals

The Preliminary Assessment of the DH system renovation project proposal of a Latvian town2/2



Energy Efficiency(EE)/ESCO companies in Baltic Countries

- Summer 2003
- Objective to search potential projects for financing and market the IFC CEEF program in three countries
- Electrowatt-Ekono carried out identification of EE/ESCO companies in Latvia, Lithuania and Estonia
- Visits to selected companies by EE and IFC staff
- Interviews with visited companies based on the results of questionnaires
- Result of the task: general overview of EE financing potential, interest of the companies and barriers. Established contacts between IFC and EE companies

Estonian housing pilot/energy audits

- November 2003 – May 2004
- The IFC is issuing a partial loan guarantee for 30 Estonian housing associations in blockhouses for energy saving renovations
- Electrowatt-Ekono carried out the following activities:
 - Support in preparation and arranging of the international tender for energy efficiency companies for undertaking of the renovation program
 - Preparation of energy audit materials and training of local consultants on the performing of energy audits
 - Managing, co-ordination and quality checking of 30 energy audits, carried out by the local Estonian sub-consultants

Benefits of the project

IFC

- Screen relevant projects and assistance in forming a project pipeline
- Assistance in project preparation
- Increase Investment
- Management of risks
- Strengthen Small/Medium Enterprises (SME)
- Improve Business Enabling Environment
- Transfer of know-how from TA consultant

Beneficiaries e.g. local financial institutions (FI), ESCOs and SME

- Preparation of project pipeline
- Capacity Building Tool
 - Technical assistance to FIs, ESCOs, and SMEs
- To get acquainted with sources of financing
- Assistance in project preparation
- Increase Investments
- Transfer of know-how
- Risk Management Tool
 - IFC/GEF provide partial guarantees for EE loans

Benefits of the project

Finland

- An introduction of Finnish municipal / industrial energy systems into market in Baltic countries -> marketing for Finnish Energy products
- With project -more market for Finnish products
- Improved possibilities to create business relations with stakeholders in Baltic energy markets, especially in the industrial sector
- Possibility to disseminate gained know-how on Baltic energy / financing markets to Finnish companies
- Improved energy efficiency resulting in reduction of emissions to atmosphere in the neighbouring areas
- Successful programme to promote Energy Efficiency on a small scale market area (Baltic countries) => Similar concept has potential on the larger market area (Russia and China)



Competence. Service. Solutions.