FICHTNER EIHP SEEC

Conference on
Financing Eco-innovation in South Eastern Europe
Mechanisms, opportunities and challenges

Western Balkans Sustainable Energy Direct Financing Facility

Taylor-made Financing for Small Renewable Energy and Industrial Energy Efficiency Projects

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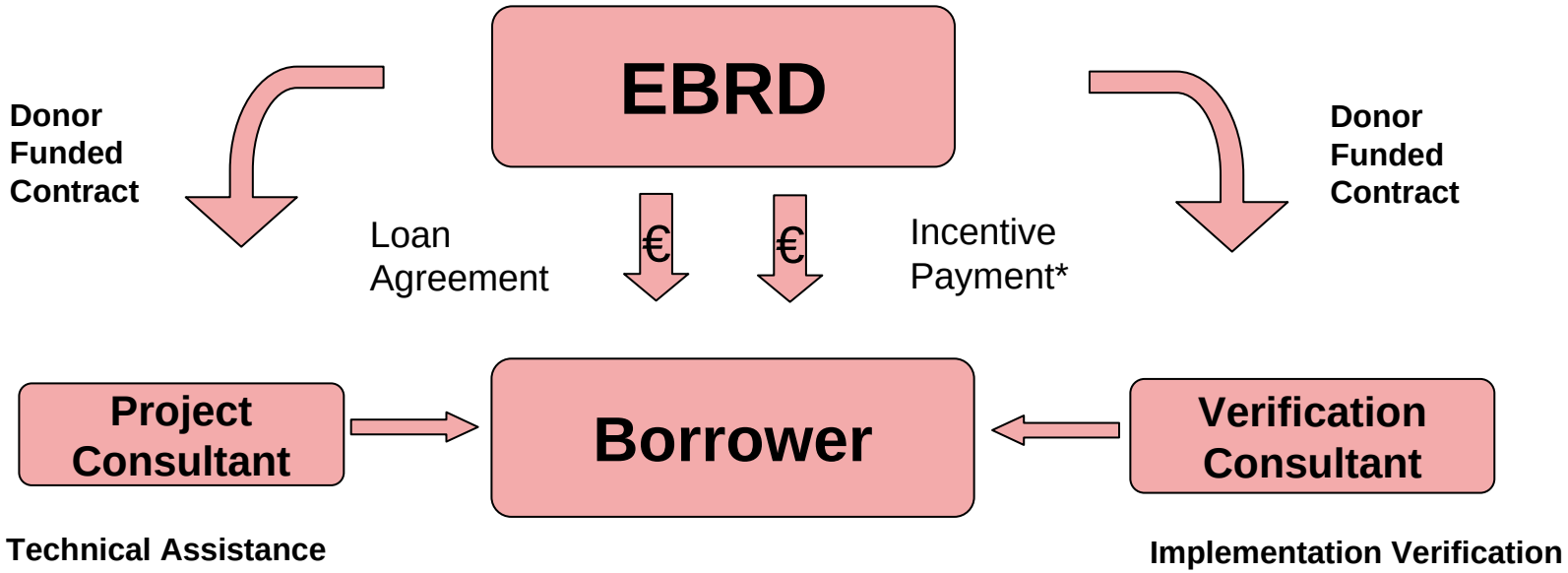
Agenda

- Introduction to the WeBSEDFF
- Operational Arrangements
- CO_2-based Incentive Payments
- A case study
- Contact us

What is WeBSEDFF?

- A direct financing facility operated by the EBRD
- For (small) renewable energy and (industrial) energy efficiency projects
- In the Western Balkans (Albania, Bosnia and Herzegovina, Croatia, FYR Macedonia, Montenegro and Serbia, including Kosovo, under UNSCR 1244)
- Endowed with up to EUR 50 million of loan funds + up to EUR 13 million in TC and incentive payment funds
- Expected number of projects: 15-25

Structure of the WeBSEDFF



** Incentive payments paid upon completion of investments to Borrowers*

Project Consultant Consortium and the Main Partners

- **FICHTNER**
  - Germany's biggest independent engineering and consultancy enterprise
  - Established in 1922
  - Project experience in 150 countries
- South East Europe Consultants
  - Services/Consulting/Development
  - TPPs, CHPs, DHs, HPP, power transmision systems, environment, cost-benefit studies, renewable energy, recycling
- Energy Institute Hrvoje Požar
  - Non-profit public scientific institution
  - Organization covers different aspects of modern and sustainable energy systems
- KOMPANI
  - marketing research and strategy planning, full service advertising, media service, public relations, event organization, ...

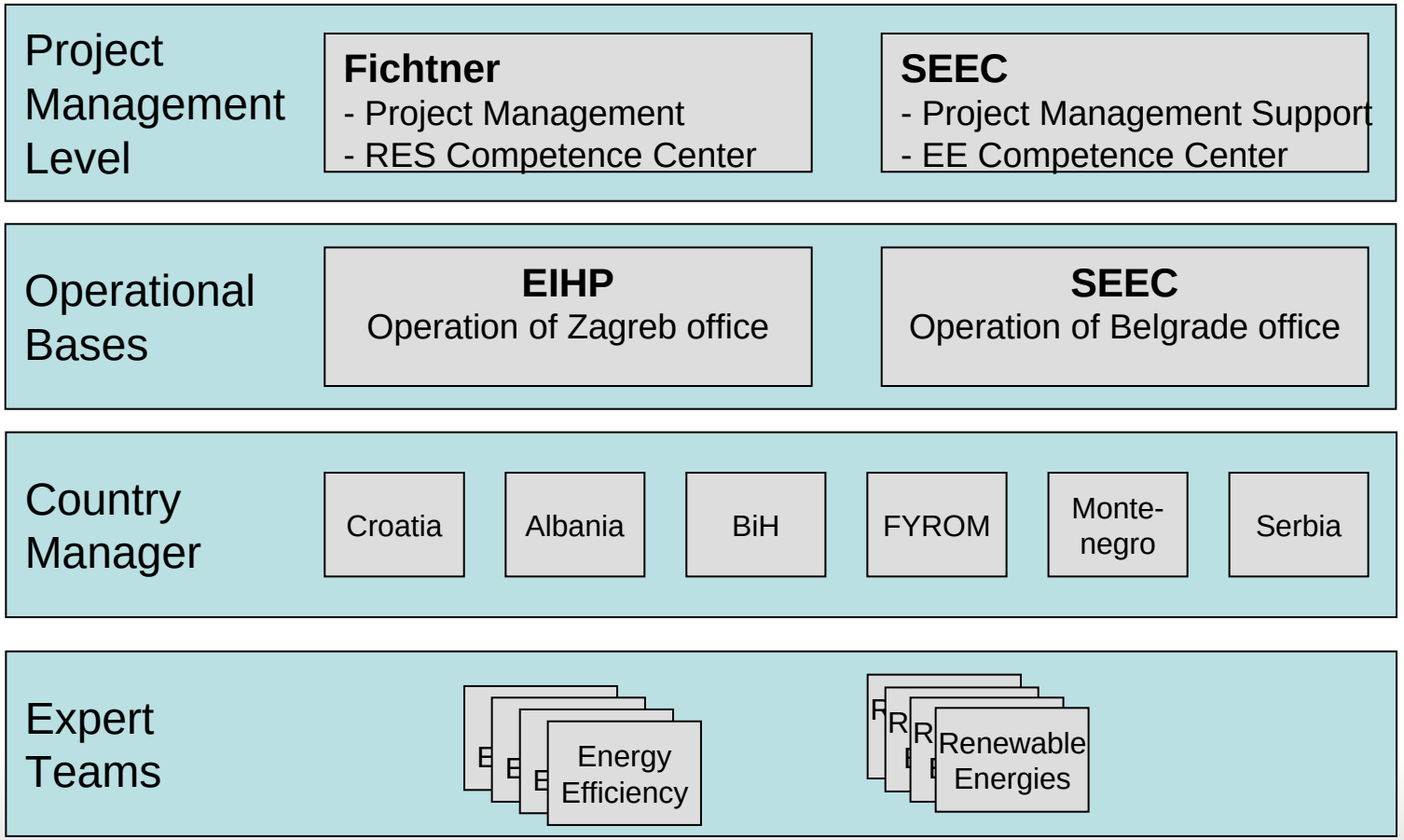
Financing instruments under WeBSEDFF

- Senior (secured) loans and project financing arrangements
- From EUR 1 million to EUR 6 million EBRD financing
- Average (expected) maturity of 6-8 years for energy efficiency and 10-12 years for renewable energy projects, with appropriate grace periods and flexible repayment schedules
- Supported by TC funds for project identification and preparation as well as by incentive payments based on the estimated CO_2 emission reductions generated by each eligible project

Positioning of the WeBSEDFF

- WeBSEDFF is part of a broader Sustainable Energy Initiative of the EBRD for the Western Balkans, including also:
  - The WeBSECLF – a credit line facility of up to EUR 60 million for financing industrial energy efficiency and small renewable energy projects through Participating Banks (in BiH, FYR Macedonia, Montenegro and Serbia) with individual loans between EUR 100 thousand and EUR 2 million, TC assistance and incentive payments
  - An institutional capacity building component of up to EUR 2 million to address deficiencies in the regulatory framework and other obstacles to the development of the market for sustainable energy projects (to be launched in 2010)

Work Approach – Organisational Structure



Work Approach – Logistics Two Operational Bases

Belgrade office (SEEC):

- Serbia
- Montenegro
- F.Y.R. of Macedonia

- Zagreb office (EIHP):
  - Croatia
  - Bosnia and Herzegovina
  - Albania

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Eligibility criteria (1)

- Eligible types of projects:*
  - Renewable Energy (only greenfield projects up to 10 MW) – run-of-river hydro power plants, wind farms, solar systems, biomass systems generating heat and electricity, etc.
  - Industrial Energy Efficiency – on site co- or tri-generation; rehabilitation of boilers, compressed air systems and steam distribution systems; installation of chillers; installations for heat recovery from processes; various other EE improvement measures or combinations of them;

** Detailed information on the eligibility criteria can be provided upon request*

Eligibility Criteria (2)

- In order to qualify for financing and incentive payments under WeBSEDFF the projects should meet certain eligibility criteria: *
  - Technical criteria - defined in terms of:
    - At least 20 percent of energy savings for industrial energy efficiency projects;
    - A minimum efficiency (utilization) rate for renewable energy projects;
  - Financial criteria – sound financial / economic structure and sufficient equity capital contributed to the project by the Sponsor;
  - Other criteria – for projects requiring concessions, licenses and permits, those should be obtained in compliance with the relevant EBRD requirements (transparent and competitive process, among others)

** Detailed information on the eligibility criteria can be provided upon request*

Operational Arrangements (1)

- Project consultants will be hired using TC funds to screen potential projects. Their role will be to:
  - Verify the compliance of the project with the technical and other eligibility criteria
  - Help project sponsors to define the scope of their projects (including by performing an Energy Audit) and assist them in applying for financing
  - Estimate the potential CO_2 emission reductions by each project on the basis of which the incentive payments can be calculated
  - Provide guidance to the project sponsors about the best practices in the field and help them to implement their projects;

Operational Arrangements (2)

- Approval Process and Other Features:
  - A two-stage approval procedure carried out in London
  - Expected duration from initial discussions to final approval: 4 – 9 months
  - Legal costs: to be covered by the EBRD (subject to certain constraints)
  - Interest rates: market based, depending on the type and risk profile of the project, the Sponsor and other considerations

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Incentive Payments: basic idea

- In order to encourage local entrepreneurs to develop Sustainable Energy projects in a less than perfect market environment, WeBSEDFF will offer incentive payments to eligible projects
- The mechanism for provision of incentive payments under WeBSEDFF is based on the CO_2 emissions that each project will avoid
- It emulates a CDM carbon credits transaction, but without generating actual carbon credits for the project sponsor or a third party

Incentive Payments: Operational Arrangements

- The incentive payments will be paid upon technical completion of each eligible project:
  - Verification Consultant will be hired using TC funds to establish the technical completion and operational viability of each project;
  - The incentive payments will be paid towards a reduction of the outstanding loan principal –the entrepreneurs will not receive a lump sum, but will benefit through reduced interest and principal payments over the life of the loan;
  - Incentive payment cap levels of 15-20% of the loan principal will be introduced to prevent excessive subsidies for highly efficient projects or for projects with low leverage;

Mechanism Design: formula

- The general formula for calculation of the amount of the incentive payments for both RE and EE projects is as follows:

  IP = CO_2 emissions avoided per year x Price per ton of CO_2 x Annuity factor

Where:

CO_2 emissions avoided per year – a project specific variable

Price per ton of CO_2 – a shadow price stipulated by the EBRD

Annuity factor – a variable depending on a discount rate and the number of years over which CO_2 emissions reductions will be remunerated

Mechanism Design: formula (2)

- For RE projects the quantity of CO_2 emissions avoided per year can be calculated as follows:

$$CO_2 \text{ emissions avoided per year} = \text{MW of installed capacity} \times H_s \times C$$

Where:

MW of installed capacity – a project specific variable

H_s – a utilization rate parameter (annual effective hours of operation per year) that will be specified according to project type;

C – a coefficient that converts MWh of electricity generated into CO_2 emissions avoided (depending on the country specific electricity generation mix). Typical values can be in the range 0.5-1.1

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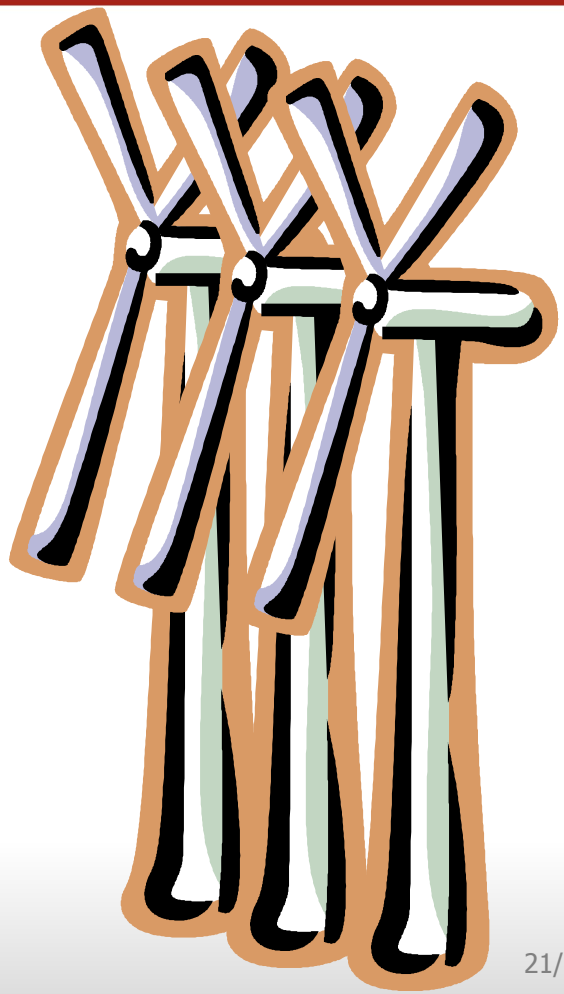
A hypothetical wind farm in BiH (1)

- Basic parameters:
  - 4.5 MW of installed capacity (3 turbines x 1.5 MW)
  - 27% utilization rate (average annual hours of operation 2,365)
  - Estimated total project cost – EUR 6.75 million
  - Estimated loan amount – EUR 4.4 million (Loan/Value ratio – 65%)
  - Term of the loan – 12 year, with 2 years grace period



A hypothetical wind farm in BiH (2)

- Incentive Payments :
  - Expected annual generation of electricity – 10,643 MWh
  - Expected annual CO_2 emission reductions – 7450 tons
  - Estimated total amount of incentive payments – EUR 673 thousand (10% of total project cost, 15.3% of loan principal), calculated at:
    - EUR 9 per ton of CO_2
    - 5% discount rate
    - a remuneration period of 15 years

Contact us

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