

Western Balkans Regional Energy Efficiency Programme (REEP)

Energy Efficiency Coordination Group
Vienna, 19 November 2019



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the European Union

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Impact



[Start](#)

Topics for discussion

- **Overview** of Regional Energy Efficiency Programme (REEP) in the Western Balkans
- **Progress Update on Programme Windows**
 - Window 1: Policy Dialogue & ESCO Support
 - Window 2: Intermediated Financing
 - WeBSEFF II & WBGEFF (EBRD)
 - SME & Public Sector (KfW)
 - Window 3: Direct Financing (WeBSEDF II)
 - Window 4: Direct Lending to Public Sector
- **Donor Visibility**

REEP Overview

€49.3m
EU grants

€89m
other grants

€357 m project financing

Objective: Sustainable Market for energy efficiency in the Western Balkans

2 Intermediated Financing



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- Credit lines to local banks for project finance
- For SME & public sector projects (small scale RE & EE)



- Credit lines to local banks for project finance
- For residential sector projects

4 Direct Lending to Public Sector

- Project finance to States, cities, municipal companies
- For public building EE

3 Direct Financing



- Project finance to private sector (incl. ESCOs)
- For medium scale RE and EE

1a ESCO Support

- Legislative support
- Technical project preparation

1b Policy Dialogue

- EED, EPBD legislation and strategic documents
- Policy implementation support

REEP & REEP+
REEPIUS
WINDOWS



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Window 1
(a)ESCO Support

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ESCO Development Overview

OBJECTIVE

- Increase public sector low-carbon investments by using private sector expertise and finance in ESCO projects
- Promote an enabling legislative environment for ESCO business models
- Provide technical support for project/tender preparation.

ACTIVITIES AND RESULTS

- **Legislative support of EE projects**, including
 - ✓ **Primary and secondary legislation,**
 - ✓ **Procurement, laws, taxation, budgeting.**
- **Providing model ESCO contract templates and legal gap analysis** for ESCO project in public sector to the legislatures of all Western Balkan countries,
- **Standardising public procurement and contracting documents and processes** to lower transaction costs,
- **Energy Efficiency Project Preparation Support.**

OUTCOMES

- Total potential capex of 109 m in public sector low-carbon investments arising from REEP policy and technical support.
- Preparation of 55 projects: 47 street lighting projects, 4 building and 4 district heating projects supported by REEP.
- Additional projects were prepared with technical support outside REEP but using the REEP contract and procurement documentation.



Project preparation

- ☀️ Tendered, contracted or implemented
- 📍 Feasibility studies done
- 📍 Tenders under preparation

ESCO policy work

Legal analysis and ESC, EnPC contract templates prepared for all Western Balkan countries.

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ESCO Projects Preparation: Summary

TECHNICAL ASSISTANCE FUNDS

	Allocated	Remaining
ESCO policy	1,033,400	12,562
REEP ESCO project preparation	3,641,880	282,602
REEP Plus ESCO project preparation	1,000,000	431,170
Total	5,675,280	726,334

ACTIVITIES

- On-going ESCO preparation support in BiH, SRB, MK, MNT;
- On-going preparation of Vitez/Teslic district heating project;
- On-going feasibility study for Split Street Lighting project;

NEXT STEPS

- Take stock and undertake a detailed review of projects prepared over the past years
- Based on the study of the information above plan next steps accordingly

Window 1
(b) Policy Dialogue

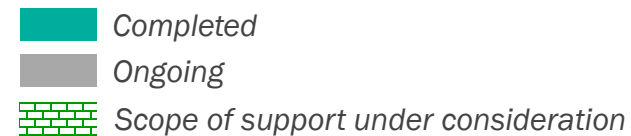
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Policy Themes and Assignments



	ALB	BA-RS	BA-F	NMK	KOS	SRB	MNE	Regional	CRO*
EE primary legisl. EED, EPBD	■ ■			■	■				
EPBD regulations	■	■ ■	■ ■	■ 	■	■			■
EPBD software			■		■				■
EPC registry			■						■
Training energy auditors			■						
Building renovation strategy, nZEB plan					■				
NEEAP / NECP	■						■		
EE in procurement						■	■		
EED Art.7 legisl./ notif./ recomm.					■	■	■ ■	■	■
EE in transmission							■		
Eco-design & labelling							■		



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Policy Deliverables

37+ policy outputs delivered, **32 adopted/ accepted** by the relevant authorities;
8 policy assignments currently ongoing

Croatia (2013-2016)

1. EPBD: Inspections
2. EPBD: Software
3. EPBD: EPC registry
4. EED 7: Art.7 implementation

Bosnia and Herzegovina

5. RS/ EPBD: Inspections
6. Fed/ EPBD: NCM
7. Fed/ EPBD: EPC registry
8. Fed/ EPBD: Software
 - RS/ EPBD: 3 regulations
 - Fed/ EPBD: Software, training

Montenegro

9. EED 6: Procurement
10. EED 7: Art.7 implementation
11. EED 15: EE in transmission
12. Eco-design regulations (x7)
 - EED: NEEAP

News since last EEGC:

- ✓ ALB EE Law: draft in public consultation process,
- ✓ NMK EE Law: adopted by government, now in National Assembly
- ✓ Bosnia-RS: Law on Construction amended, enabling adoption of REEP deliverables,
- ✓ Bosnia-Fed: First training of experts delivered

Albania

13. EPBD: Primary law
14. EED: NEEAP
 - EPBD: 3 regulations
 - EED: Primary law

Serbia

15. EPBD: Inspections
16. EPBD: Alternatives to inspection
17. EED 6: Procurement
18. EED 7: Art.7 implementation
 - EPBD: 3 regulations

Kosovo

19. EPBD: Primary Law
20. EPBD: NCM
21. EPBD: EPC
22. EPBD: MEPS
23. EPBD: Inspections
24. EPBD: Software
 - EED: BRS
 - EED: Art 7 implementation

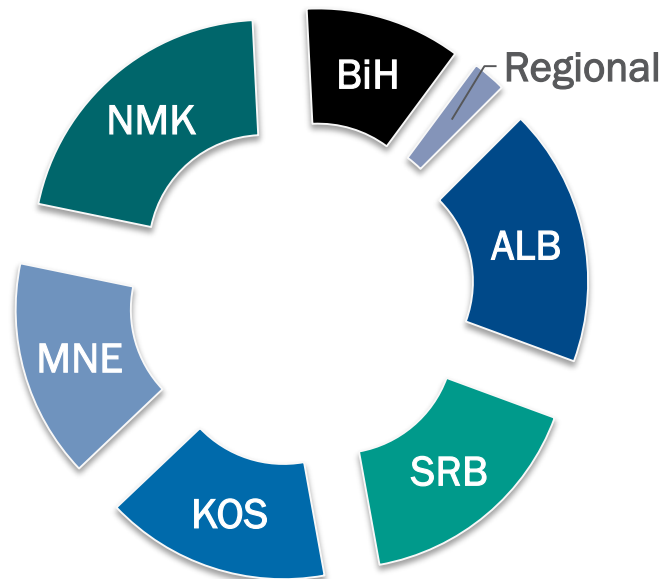
North Macedonia

25. EPBD: MEPS
26. EPBD: NCM
27. EPBD: EPC
28. EPBD: Inspections
29. EPBD: Software
30. EED/EPBD: Primary law



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Policy Assignments Budget allocation (as of Nov' 2019)



Window 2
Intermediated Finance

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KfW SME Portfolio

Loan Agreements signed until December 2018

REEP Plus SME sector	
Countries	Bosnia & Herzegovina and Serbia
Number of PFIs	4 PFIs (1 BiH and 3 Serbia)
Part of EU grants committed	EUR 5 mln (100 %)
Total Financing provided to PFIs	EUR 50 mln
Total signed sub-loan amount to date	EUR 10.670.631
Total no. of sub-projects to date	393
Average size of sub-projects	EUR 27.151
Total GHG emissions savings	5.228 t / year
Total equivalent primary energy savings (MWh/y): - (which includes Renewable energy capacity added (MW):	17.929 MWh / year

REEP Plus

KfW SME Sector Case Studies

End-borrower: PIP doo, web: <https://www.pip-ns.com/>

Location: Novi Sad

Financial intermediary: Erste Bank Serbia

Type of EE measures: EE in manufacturing: production of tortillas

Project description: Replacement of the tortilla production line

Investment amount [EUR]: 2,829,856

Loan amount [EUR]: 1,000,000

IMPACT:

Primary energy savings on annual basis: [kWh/a]:
30.4% (696,376 kWh)

CO2 equivalent savings on annual basis: [kg/a]:
27.5 % (162,360 kg)



REEP Plus

KfW SME Sector Case Studies

End-borrower: Senija Ferhatbegović

Location: Talijani, Simin Han Tuzla (Eko Park Majeвица)

Financial intermediary: Partner MKF

Type of EE measures: Insulation of exterior walls and roof

Project description: Installation of Styrofoam insulation and façade on the walls of the bungalow for rent

Investment amount [EUR]: 2.568 EUR

Loan amount [EUR]: 2.556 EUR

IMPACT:

Primary energy savings on annual basis: [kWh/a]:
24.552.00 (60.00%)

CO2 equivalent savings on annual basis: [kg/a]:
7.901.00 (60.00%)



WeBSEFF II Small Scale RE & EE Facility: Results

Key figures	Results to Oct 2019
Countries	Bosnia & Herzegovina, Croatia, North Macedonia, Serbia
Private Financial Institutions (PFI)s	9 (2 BiH, 3 Croatia, 2 Serbia, 2 North Macedonia)
Financing available to PFIs	EUR 117 mln (no change since last SC)
Signed sub-loan amount	EUR 84.02 mln (additional EUR 2.92m since last SC)
No. of sub-projects	327 (additional 12 projects since last SC)
Current pipeline value	EUR 12.32 mln / 24 Sub-projects
CO ₂ savings	122,629 t/year
Primary energy savings	560,908 MWh/year
<i>Which includes renewable energy capacity added:</i>	57 (MW)

As of **31 October 2019**:

- Overall portfolio: **44%** energy efficiency investments, **36%** renewable energy, **19.7%** investments in buildings (by volume)
- Top three industries benefitting from WebSEFF are C-Manufacturing, D-Electricity, gas steam and air conditioning and H-Transport and storage (by volume)
- **Over 200 businesses benefitting** across the four countries, Public investments finance primarily building insulation (63%), heating modernisation (23%) and lighting modernisation (11%) – (by volume)
- Approximate population benefitting from public investments: **over 400,000**
- **Public projects in Serbia**: 10 for EUR 3.12m, street light modernisation/building insulation
- **5 ESCO projects** financed in total, all in Croatia. In Serbia: first two ESCO project are under preparation (in the pipeline), both for street lighting modernisation

WeBSEFF II Case Study

Metal cutting machine replacement at Jedinstvo, Serbia

CLIENT

Jedinstvo-Metalogradnja AD is a private company established in 1947 predominantly dealing with construction of commercial structures: production facilities, warehouses, energy bridge systems, various roof, facade and ceiling works, performing sheet metal and locksmithery works, reconstruction of flat roofs.

PROJECT

- Replacing 20 years old plasma metal cutting machine with more technologically advanced laser metal cutting machine.
- **Energy consumption halved**
- Additional benefits include improved processes and less material input requirement (oxygen, acetylene)

FINANCIAL STRUCTURE

Total project cost/loan	€182,200/ € 145,600
Incentive amount	€7,280 (5%)



EXPECTED IMPACT

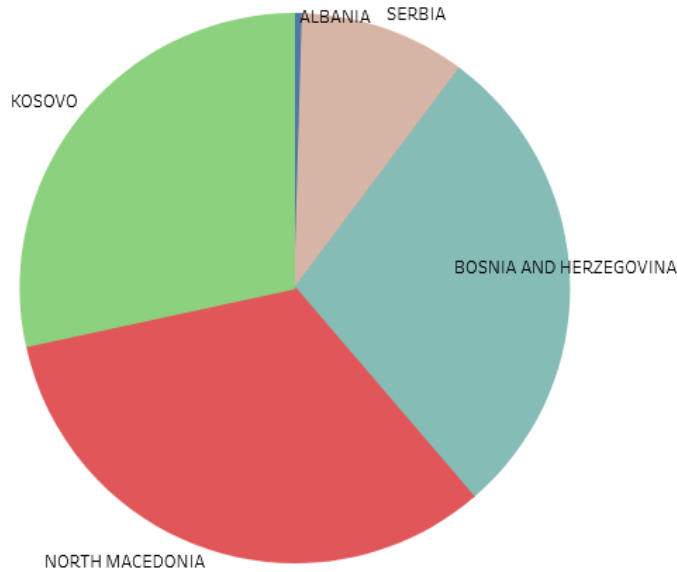
- Energy saving ratio 50.1%
- Annual savings: €24,902
- Payback period: 7.3 years
- Primary energy savings (MWh/a): 151
- CO2 avoided emissions (t CO2/a): 50

WBGEFF Residential Facility: Results

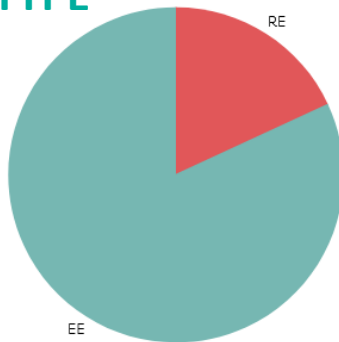
Key figures	Target by 2023	Results to Oct 2019	% of Target Achieved	Change since June 2019	
Credit Lines Signed	-	15*	-	+2	-
Financing Provided to PFIs (EUR mln)	85	58.5	69%	+ 5	+ 21%
Signed sub-loan amount (EUR mln)	85	14.2	16%	+ 5.2	+ 58%
No. of sub-projects	29,000	2,725	9%	+ 1,075	+ 65%
Tech Selector - # of entries	1,000	23,567	2357%	-	-
PFI loan officers trained	225	>1,000	>444%	-	-
CO ₂ savings (t/year)	21,250	4,400	20%	+ 1,499	+ 52%
Energy savings (MWh/year)	68,000	12,441	18%	+ 4,236	+ 52%

* 4 BiH, 4 North Macedonia, 2 Serbia, 3 Kosovo, 2 Albania

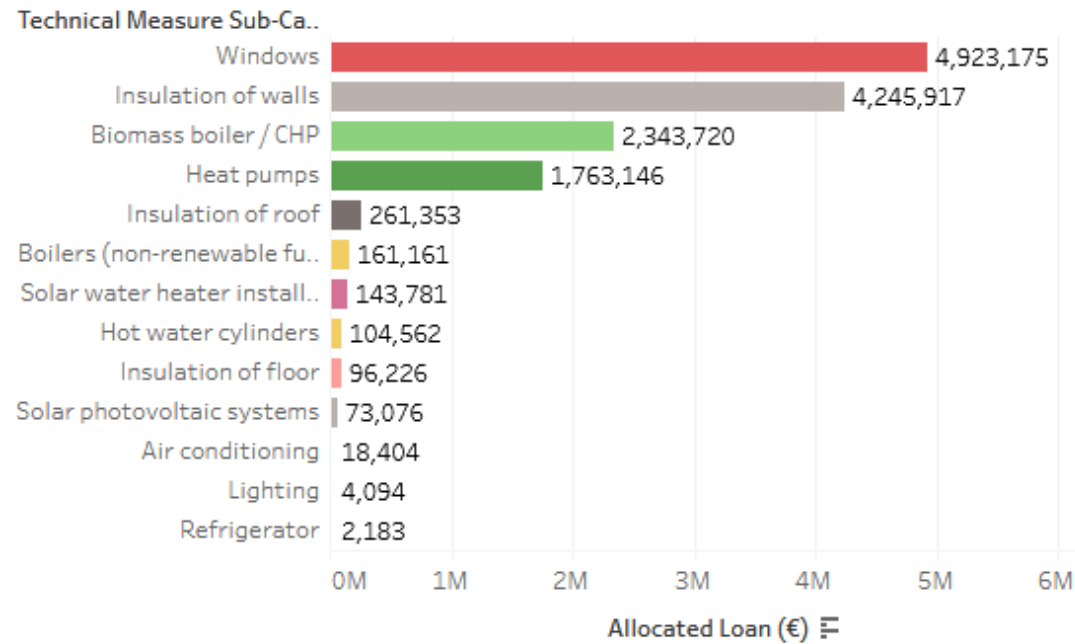
EUR BY COUNTRY



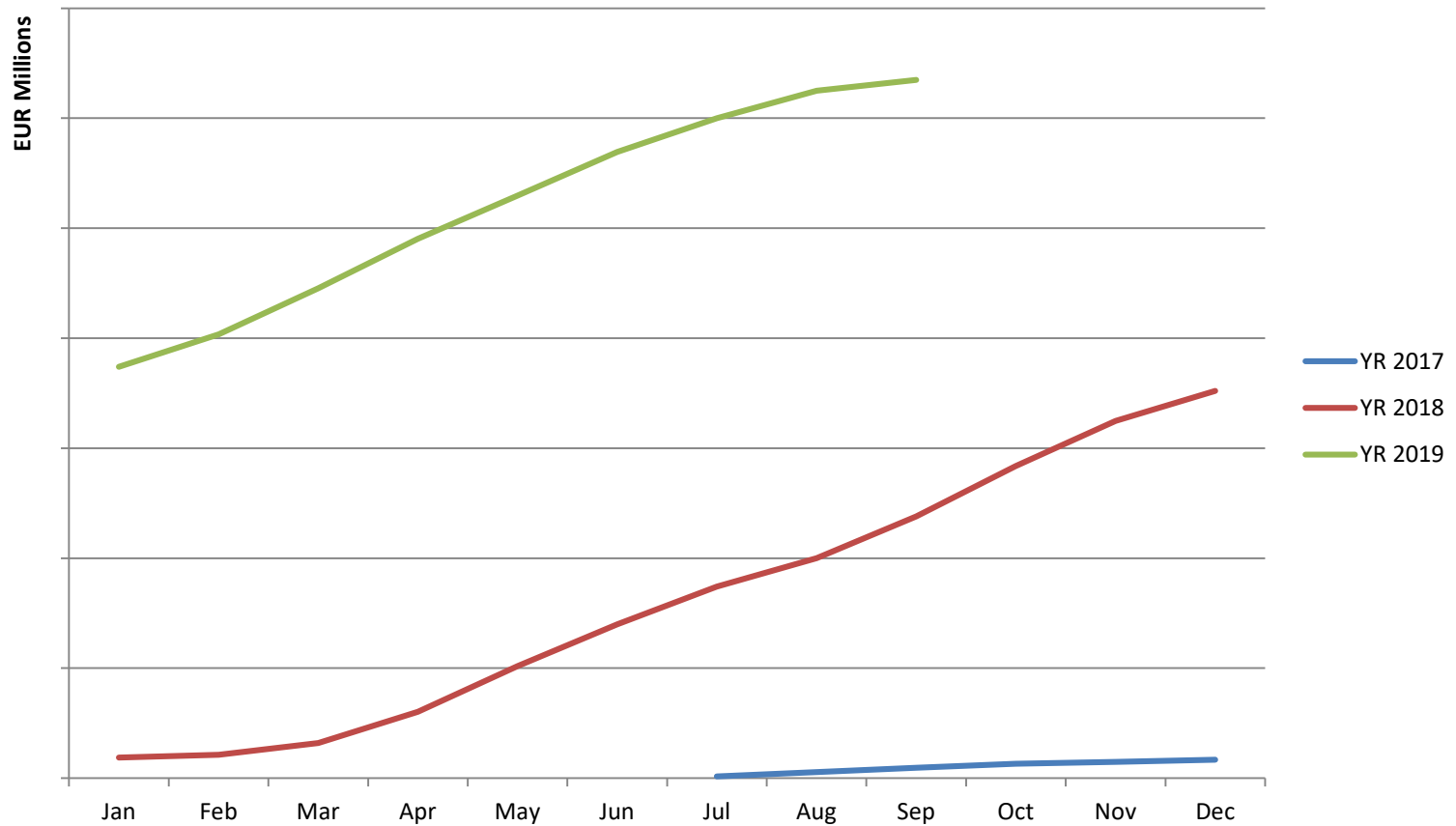
EUR BY TYPE



EUR BY TECHNOLOGY



Cumulative Sub-Loans Signed



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WBGEFF Case Study: Multi-Apartment Project (Sarajevo, BiH)

CLIENTS

1950's build multi-apartment residential building in the centre of Sarajevo, consisting of seven apartments owned by the occupiers.

PROJECT

The project consists of two measures:

- Thermal insulation of outer walls
> U-value of 1.4 decreased to 0.3 W/m²k
- Replacement of old metal/wood common hallway single pane glazing with PVC triple pane argon filled glazing
> U-value of 3.0 decreased to 1.0 W/m²k

EXPECTED IMPACT

	Calculated consumption				
	Unit	Before	After	Savings	Savings (%)
Energy consumption per building - heating	kWh/year	67,921	37,391	30,530	45%
Fuel consumption per building - heating	kWh/year	97,030	53,415	43,615	45%
Energy costs per building - heating	€/year	5,822	-	-	-
Specific energy consumption - heating	kWh/m ² year	142	78	64	45%
CO ₂ emissions	kg/year	83,871	75,104	8,767	10%

FINANCIAL STRUCTURE


Total project cost €32,750
Incentive amount €11,000 (35%)




REEP Plus WBGEFF Case Study Videos

ISTOG, KOSOVO


Supported by:



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Federal Ministry
Republic of Austria
Finance



Western Balkans
Investment Framework
WBIF

Во соработка со:



Energy Community



SAMAC, BOSNIA AND HERZEGOVINA

SKOPJE, NORTH MACEDONIA



WBGEFF Residential Facility – Implementation Highlights

- GEFF Roundtable in Montenegro – 3.09.2019
- First building-level sub-project ongoing in BiH – Refurbishment to be completed in November 2019
- Took part in Kosovo Sustainable Development Week (Prishtina, 16–22.09)
- Participated as panelist at "Energy Efficiency for Us - Public Financing of Energy Efficiency in Private Buildings" (Belgrade, 12.09)
- Presented at Green festival (Prishtina, 30–31.10)



Window 3
Direct Financing to Private Sector

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Direct Financing to Private Sector

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- **7 projects** financed to date (4 SHPP, 1 biomass, 2 biogas), for a total of €32.0m
- **All projects** are operational, delivering renewable energy broadly in line with original estimates

RESULTS

- **21.2MW** installed, equivalent to the annual electricity needed by the street lighting systems of cities the size of Sarajevo, Tuzla and Mostar combined
- CO₂ emissions saved: **325,974 tonnes/year**

REEP PLUS

- EBRD financing for **up to 12 projects**, without grant co-financing
- The REEP Plus funding is used for covering due diligence and other finance preparation costs (on a cost sharing basis)

RESULTS

- First project identified: 32 MW wind farm in Kosovo (EUR 19m EBRD financing; REEP Plus funding EUR 50k for technical due diligence)

FUTURE ACTIVITIES

- Identification of other potential projects for financing and development of a pipeline will take place over the next 12-24 months

EBRD direct lending example: developing 3 biogas power plants in Vojvodina, Serbia

Client

A group of Slovak investors developing **3** (anaerobic digestion) **biogas plants of 0.65MW** installed capacity each. The biomass that will be used consists of sorghum, agricultural residues and manure, among others.

Financing

2015: tranche 1 (first two biogas plants) €3.1 million
2016: tranche 2 (third biogas plant) €1.4 million



Project & Technical Assistance

- Total project cost of €7.8 million.
- Implementation: turn-key EPC contract and O&M arrangements with a specialised Slovak contractor
- Loan on a project finance basis with a 12-year tenor
- Incentive payments: under the UNDP biomass project support programme

Results:

- Energy generation of 14,835 MWh/year
- CO₂ equivalent emission reductions of 10,399 tonnes of CO₂ /year
- Load factor of 90+%

EBRD direct lending example: developing 2 biogas power plants in Vojvodina, Serbia

Client

A group of Slovak investors developing 2 (anaerobic digestion) **biogas plants of 0.80 MW** installed capacity each. The biomass that will be used consists of sorghum, molasses and agricultural residues, among others.

Financing

2018: single tranche €3.8 million

Project & Technical Assistance

- Total project cost of €6.4 million.
- Implementation: turn-key EPC contract and O&M arrangements with a specialised Slovak contractor
- Loan on a project finance basis with a 12-year tenor
- Incentive payments: under the EU funded REEP programme for the Western Balkans



Results:

- Energy generation of 11,930 MWh/year
- CO₂ equivalent emission reductions of 8,400 tonnes of CO₂ /year

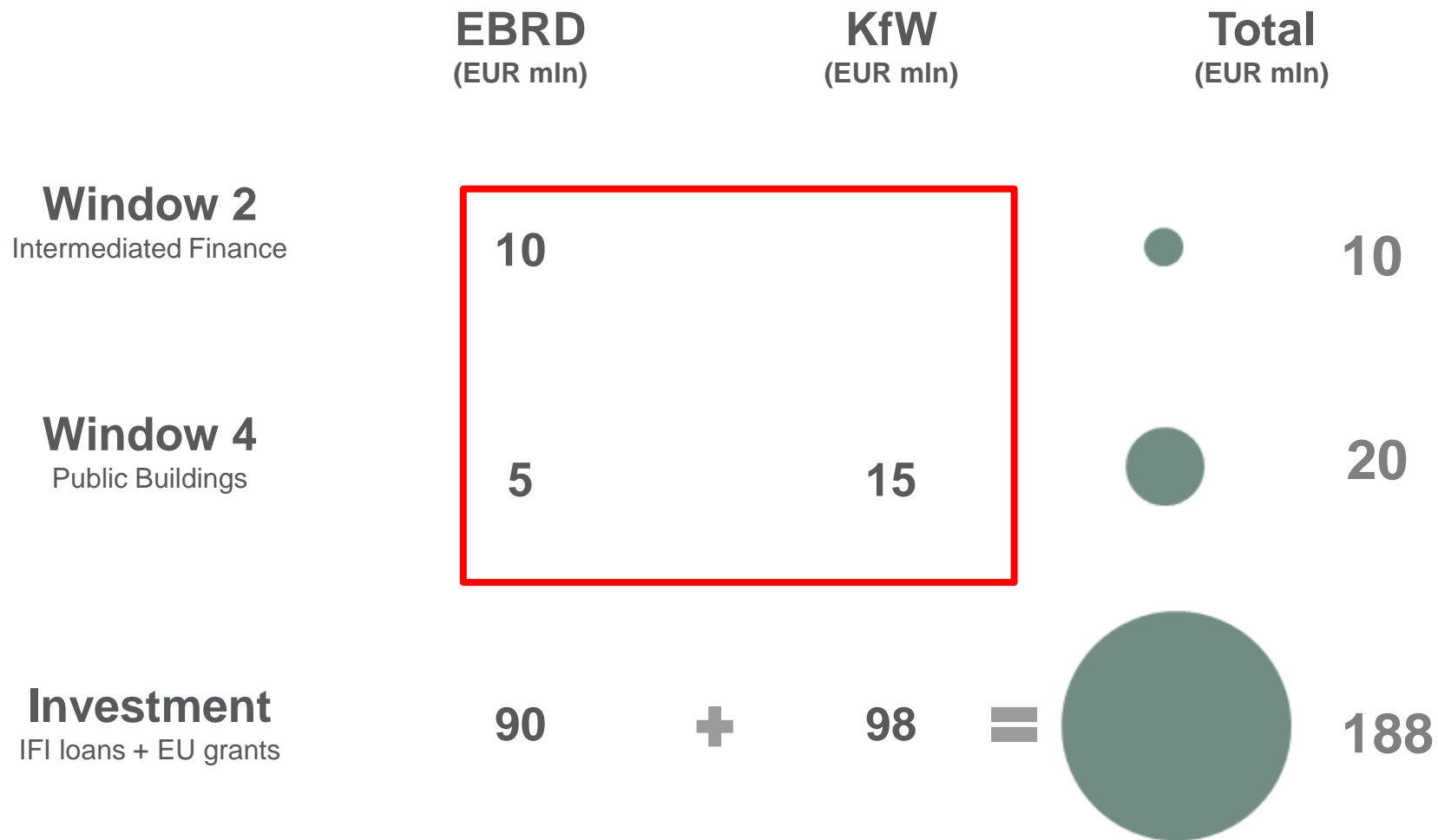
Window 4
Direct Lending to Public Sector

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REEP EXTENSION - OVERVIEW



Albania - Student Cities III

Refurbishment of ca. 18 student Dormitories

- Investment loan - EUR 20 mln
- Investment grant from REEP+ - EUR 4.9 mln
- 4 residences in the capital Tirana
- Ø 45% energy savings
- Solar hot water panels for DHW
- Integrated floor heating and cooling
- Air Heat pumps



Montenegro - Rehabilitation of public buildings – Phase III

Comprehensive refurbishment and new construction program incl. remote monitoring

- Investment loan – EUR 45 mln
- EU grant - ca. 4,9 mln

- 1) Focus on **schools** (also admin and social buildings)
- 2) New construction of a “**Nearly-0-Energy building**”
- 3) **Energy Monitoring System**

Results of previous phases:

- Ø 60% energy savings
- 20990 users
- Fuel switches (oil/coal → pellets)
- Use of solar thermal energy



Source: Kiefer, Kynast



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Macedonia - Rehabilitation of student dormitories - Phase I

Energy Efficient Rehabilitation of 7 Student Residences

- Investment loan - EUR 20 mln
- Investment grant from REEP+ - EUR 5 mln

- 7 residences in 4 cities
- Ø 57% energy savings
- 3177 students

- Connection to District Heating in Bitola
- Use of solar thermal energy



Source: Kiefer, Kynast

Outlook - further replenishment

- › VMA-hospital investment needs ~ 150 million EUR → huge CO2 and CFC savings to be realized
- › Construction of “Nearly-Zero-Energy Buildings” 2020 EU standards → building showcases in line with
- › Topping up of existing/ forthcoming WB6 programs far → demand by beneficiaries exceeds supply by
- › Currently, only 3 out of 6 WB6 addressed → REEP + extension to all WB6 countries
- › REEP + Window for grants contribute to unleash investment backlogs and stimulates EE renovation → measurable added value of EU INV/TA grants

REEP Plus

Direct Lending to Public Sector

BACKGROUND

- EBRD financing for **up to 4 projects**, with **EUR 2 million** grant co-financing available (ca. 10% grant)
- To be utilized for direct loans to states, cities or municipal companies to improve EE in public buildings (i.e. schools, hospitals, government buildings)



PROGRESS

- **First transaction signed June 2018:** A sovereign EBRD loan of EUR 10 million for EE retrofit of the Zenica Cantonal Hospital.
 - The loan is accompanied with a EUR 1 million investment grant (WBIF) and EUR 200k for project preparation and procurement support.
 - The project will result in reduction of energy consumption by 60% and heating demand by 44%.
 - Delays due to political situation, but implementation expected to commence in 2020.
- **Second transaction to be signed in 2020**

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Direct Lending to Public Sector

ACTIVITIES / PIPELINE

- On-going pipeline development under Window 4 (REEP Plus, REEP evolution and beyond); in 2019 we are expecting to sign 2 new loans under Window 4 (REEP evolution);
- Targeted public buildings are in the municipal, administrative, educational, health sectors;
- 6 scoping studies were launched to support the identification, prioritisation and structuring of EE investments in the public sector;
- Demand exceeds the supply thus additional sources of funding (outside REEP) are being investigated by the EBRD for WB6.

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Donor Visibility

EU visibility and communications



Press/media:

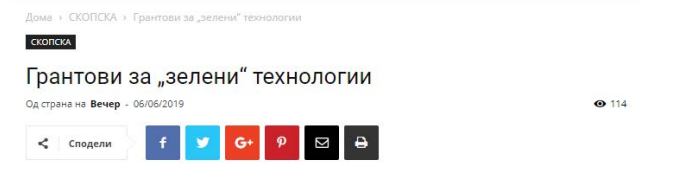
- Vast media coverage for GEF in all countries
- Tree planting in Kosovo, presentation of GEF and other green projects. Similar event in Serbia on 28 Nov

Videos: personal story and impact

- Biogas power plant in Serbia
- Planning Q4: Skopje dorm, GEF video in North Macedonia

Social media: continuous promotion of stories/photos/ etc.

- 100+ posts (EUDs, EU NEAR sharing)
- ca 200,000 followers of EBRD accounts



Thank you!

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