Workshop on ESCOs in Romania

"Opportunities and Challenges: ESCOs in Romania - a solution to a wider accessibility to energy efficiency measures especially in poor areas"

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OVERVIEW OF PRESENTATION

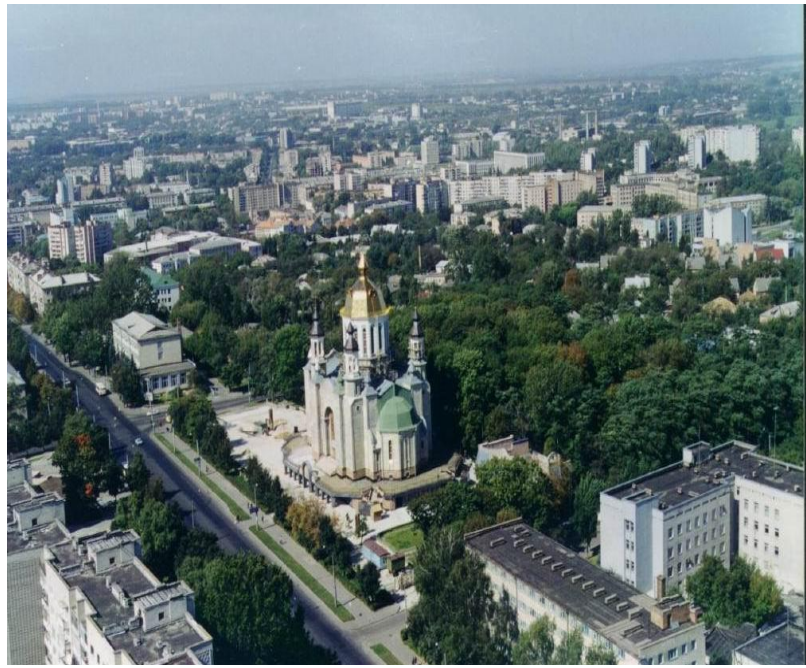
1. UNDP and GEF and EE in Europe & CIS Region

2. ESCO Rivne : Project Overview

3: Key Project Results

4. Lessons Learned

5. Future UNDP Activities related to ESCO in the Europe & CIS Region



UNDP is a key partner of the Global Environment Facility and one of three original implementing agencies …

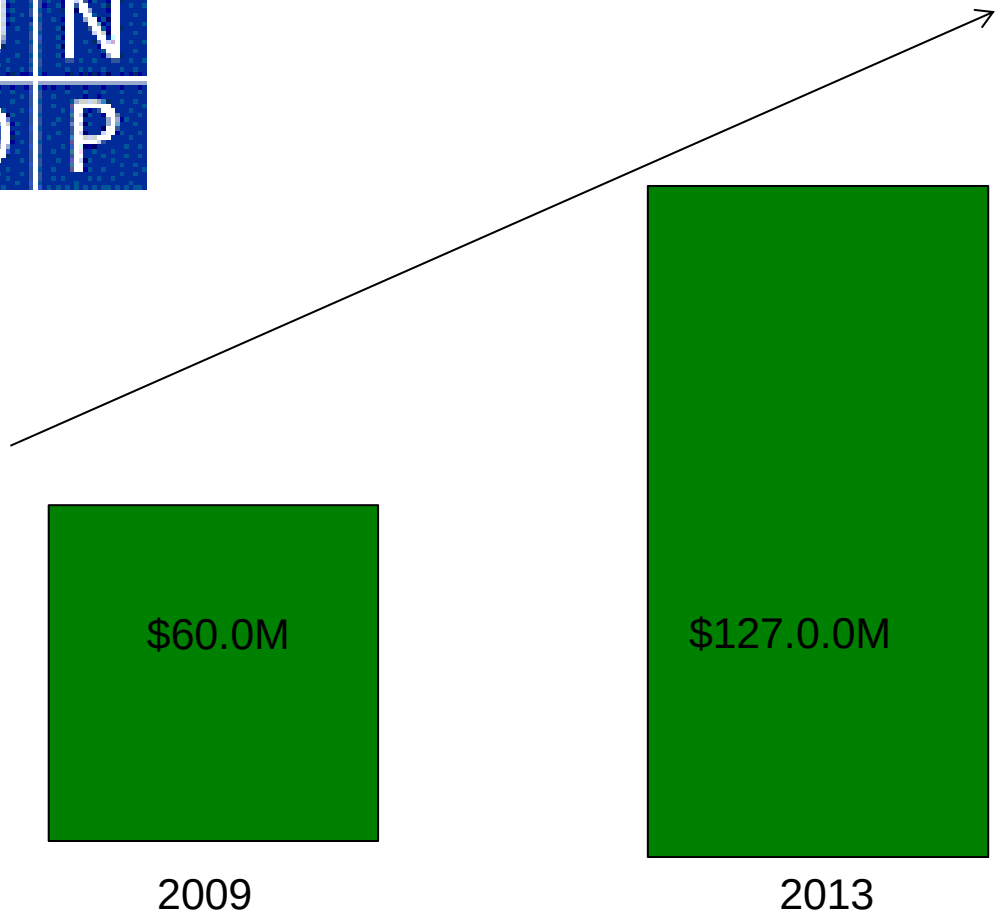
142 countries

GEF Trust Fund

GEF 6: 4.43 billion

Founded in 1965
Offices in 135 countries
Over 16,000 staff
Annual Budget of over 5 billion USD
Administrator: Helen Clark

The total UNDP GEF climate change portfolio in Europe & CIS region has grown from $60 million in 2009 to over $127 million by mid 2014 …



TOTAL PORTFOLIO
Energy Efficiency: $94.6
Renewable Energy: $20.4
Sustainable Transport: $12.7
Total: $127.7 million

Focus is on Energy Efficiency

1. High Levels of Energy-Intensity
2. Many Low Cost Solutions
3. Energy Poverty

UNDP Support for Energy & Environment Projects in the Europe & CIS Region

Energy-Efficiency
- Residential Buildings
- Public Buildings
- Energy-Efficient Lighting
- Energy Efficiency Standards & Labels
- Energy Service Companies (ESCOs)
- + new projects related to energy-efficiency in tourism & oil & gas sectors

Selected UNDP GEF EE Projects – Total 24 EE Project Ongoing

$5.5 million UNDP GEF Ukraine EE Public Buildings Project (under development)
$3.0 million UNDP GEF Romania EE Residential Buildings Low Cost Housing (ongoing)
$5.5 million UNDP / UNIDO Industrial Energy Efficiency Project (ongoing)
$1.30 million UNDP GEF ESCO Moldova project (just starting)

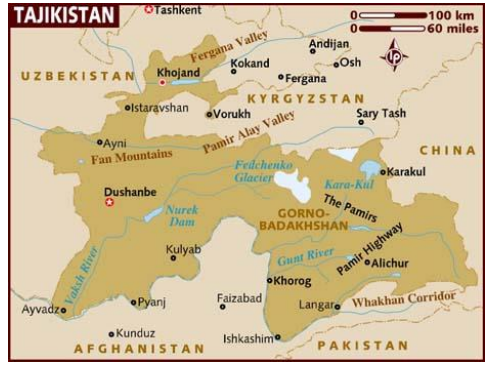
There are only 5 countries in the region that UNDP currently do not have an energy – efficiency project under development or implementation

Albania

Bosnia & Herzogovina

Georgia

Macedonia



Tajikistan

ESCO Rivne – The ESCO which was not an ESCO!

The story of a UNDP GEF project that lasted for over 9 years and which clearly illustrates some of the challenges and difficulties with launching the ESCO business model in Eastern Europe & CIS countries …

The ESCO Rivne Story

ESCO Rivne was a $5.3 million USD UNDP GEF project which started in 2002 and finished at the end of 2011 in two phases 2002 – 2007 and 2007 – 2011 ….

- Pilot Region: Rivne, Rivne Oblast
- Phase I: PPP Municipal Heat Supply Company – ESCO Rivne
- Phase II: Expansion of the business model and financing of projects
- ESCO Rivne operated as a utility & engineering company
- ESCO Rivne never operated as a 'true' ESCO (later I will explain why)

ESCO Rivne received detailed training and advise from int'll experts on the ESCO business model and the opportunities it presents for financing EE …

Outline of Phase II of ESCO Rivne Project

Outcome 1: ESCO operations are expanded to cover Rivne City- wide/Oblast energy efficiency activities.

Outcome 2: ESCO-Rivne operations are facilitated through the financing of activities with long payback periods.

Outcome 3: A reduction of the investment risks in order to facilitate ESCO-Rivne's expanded activities.

Outcome 4: Project experience/best practices and lessons learned are replicated throughout Ukraine and in other CIS countries.

ESCO Rivne Key Project Results

Environmental

• 11 obsolete boiler plants are shut down
• 45 new boilers/boiler rehabilitation projects of which 8 are operated by ESCO Rivne
•130 952,6 tCO_2 lifetime direct emissions avoided •80 046.87 tce energy savings

Social

• 300,000 people enhanced quality of life
• 805 beds Municipal hospital (750 out-patients per day) servicing 54 700 Rivne residents,
•150 beds maternity hospital (200 out-patients per day) •60 000 people permanent hot water supply,
•40 000 people improved cold water supply

Technical

- combined heat and power generation •waste wood combustion (renewable energy)

Financial

- reduced energy bills up to 37% for clients serviced by ESCO-Rivne

Replicating the theoretical is not possible …

ESCO Rivne : Replication throughout Ukraine

- Seminars & Workshops
-Training events on ESCO
-Model Energy Performance Contract agreements
- Model public-private partnership ESCO models

To successfully replicate, you must first successfully demonstrate …

ESCO Rivne Business Model…

ESCO-Rivne typically followed a 'build, own, operate' model

Build using grants provided by UNDP GEF project and municipal funds

Own as assets are transferred from UNDP to Municipality to ESCO Rivne

Operate using revenues from the client

Such arrangements provide:

- The way to secure stable payments (income stream) with very low risk (i.e - Financing risk is zero)

- 2% of the municipal heat supply market (ESCO-Rivne operates 8 boiler plants with the total installed capacity 8.05 Gcal/hour)

- ESCO Rivne continues to operate as of 2014 …

Problem 1 : The project focused on boiler construction and rehabilitation …

ESCO Rivne started with no capital and no access to capital but it did have access to grants

45 energy efficiency projects of various size were implemented in the different regions of Ukraine (with majority in Rivne city/oblast)

ESCO Rivne operates 8 boiler plants that it now (as of 2014 owns)

The boiler projects were all implemented with grants – not with commercial finance

Phase II was supposed to focus on financing of projects and energy performance contracting (EPC) but this did not happen (more about this later)

Problem 2 : Most important problem. Grants prevented a pure private sector approach and distorted the market …

The financial support by a direct investment (grant) had a perverse impact on the energy supply tariff (the equipment was received for free and the investment cost was not included into the tariff) **and led to energy supply market distortion**

Two Key Issues

Firstly, why should ESCO Rivne seek to borrrow money for expansion or for specific projects (project finance) when UNDP was giving away free money …

Secondly, ESCO Rivne was never a well capitalized company so even if they wanted to borrow money it was never going to be easy because right until the end ESCO Rivne had no real assets to borrow against …

Grants distort the market – Who cares what the payback period is when the funds are provided for free? Who is going to choose a loan over free money?

Problem 3 : The heating tarriff in Ukraine is set on an annual basis and tariff levels are too low … (note: this may change!)

Competitive Tarriffs for heating are required - At the earliest stage of ESCO project implementation, the district heating tariff should be competitive and include investment portion to allow investments to be profitable. The payback period for many investments is to long.

The grant scheme of ESCO Rivne resulted in **even lower tariffs for heat supply** (beneficiary for clients), however, **withdrew benefits from ESCO** (limited the margin of profit and ESCO capitalization through investments in new projects).

Household & Industrial gas prices in Ukraine are low : 6 – 23 cents per m3

This is several times lower than in Western Europe.

Low tariffs do not encourage energy-efficiency improvements

Non-payment of energy bills is also an issue in Ukraine and discourages investment in energy-efficiency

Problem 4 : ESCO Rivne had no balance sheet and the Key trait of all sucessful ESCOs is the ability to be able to Finance projects

ESCO Rivne could not borrow money easily and so could not finance projects using its own resources

Turnover in 2010 was only $500,000 usd/year and company was not profitable so there Were no profits that could be re-invested

Interest rates in Ukraine were 18% plus during most of project duration making borrowing on local markets very difficult

ESCO Rivne had no ability to access international capital markets for financing

Assets remained on the UNDP balance sheet until the end of the project making it even harder to borrow

ESCO Rivne was unable to attract an investor who would bring capital to the project (they tried but were not sucessful). Hostile takeover was attempted without success.

Problem 5: Business Model did not show large profits … ESCO Rivne did not operate as a profit-seeking company!

The projects in municipal heat supply are capital/cost/investment intensive and have a **long pay-back period** (up to 20-25 years) which is difficult to link with the required cost-effectiveness and sustainability of the business model , especially when cost of borrowing is so high!

ESCO model should focus on rehabilitation and projects with short payback periods, **not on new boiler construction using grants**

The financial context is unfavourable for financing energy saving/efficiency projects both on the domestic market in UAH or to secure project financing in EUR or USD. Why borrow funds at 18-20% plus for projects with a 10 year payback period showing an IRR of 7-8%. It does not make business sense?

In hindsight, if private shareholders had owned the majority of ESCO Rivne it is possible that **ESCO Rivne would have operated in a different manner**. In reality, private individuals owned only 10%. The lesson learned here is that the private investor/investors need to be the majority shareholder.

Problem 6: Legislative basis in Ukraine does not encourage shared savings contracts …

Municipal clients unable to meet its obligations under Energy Performance Contracts due to the lack of legislative mechanisms to ensure payback for energy savings

Contractual disputes are **energy performance contracts** a real concern in Ukraine and **the ability of courts to enforce enery performance contracts (EPC) is not proven**

New legislation is currently before the parliament since July 2014 to better define ESCOs

Laws 2549A – Draft Law on Amendments to the Budget Code
Laws 2550A – Draft Law on Amendments to Certain Legislative acts related to the legal framework of energy service contract performance
Laws 2548A – Draft Law on the peculiarities of the procurement of Energy Services

Law 3013 – Draft Law on Amendment to Certain Legislative Acts relating to the implementation of energy-efficiency measures in budget-funded entities
Law 3014 – Draft Law on Amendments to the Budget Code related to implementation of energy-efficiency measures in budget funded entities

Problem 7 : Project Manager was a Technical Person not a Financial Person. Head of ESCO Rivne was a former Municipal official and not a 'finance' person …

Corporate Finance	No experience. Hostile takeover failed
ProjectFinance	No experience. Did not try.
Innovative Financing– Build Own Operate Transfer Contract (BOOT)	Equipment Suppliers can sometimes provide financing for their own equipment. This also did not happen

International ESCO Advisor was hired by the project who prepared strategy reports and a business plan but they were never implemented.

Lesson Learned : Hire the right people and do not rely on consultants for Implementation. Project needed a full-time financing specialist and/or business Development manager.

Problem 8 : It Is hard to change a project that is set in its ways

UNDP undertook adaptive management in 2009-2011

- ✓ Hire a new Project Manager
- ✓ Hire Business Development Advisor
- ✓ Hired an Accounting Firm
- ✓ Hired a Legal Advisor

$10,000 USD EPC implemented
Assets transferred to ESCO Rivne via Municipality of Rivne

Key Lessons Learned from ESCO Rivne

What are all the key factors from successful projects.

- It is challenging but possible to create a successful public private partnership & ESCO but only with a lot of hard work, oversight, and ability to learn from mistakes
- Effectively addressing legal, regulatory, and policy barriers is key to achieve transformational changes;
- Ability to Undertake Adaptive Management while project is underway is absolutely essential (e.g – Croatia);
- We need to understand that we can change activities and outputs in order to better achieve successful outcomes and we should have realized early on that grants for boilers approach was not going to work …

Situation as of 2014 concerning ESCO in Ukraine

New laws before parliament to promote and stimulate EE

(i)Energy savings (mandatory audits, building certification …)
(ii)ESCO and Energy Performance Contract (EPC)

Unfortunately, on their own these are unlikely to be enough

Market Risk is Very High

Political Risk is Very High

ESCO Moldova Project is starting now …

Project Size: $1.45 million ($1.3 million GEF, $150k UNDP)
Project Duration: 4 years (2014 – 2018)

This new UNDP GEF project which aims to successfully ESCO concept in Moldova. Rather than create one new company , a PPP , we are aiming to create enabling conditions to stimulate the market and convert existing ‘energy service providers (ESPs) into ESCOs. The project consists of four components

1. Green Urban Development Plan for Chisinau
2. Establishment of ESCOs
3. Sustainable Financing Mechanism (Loan Guarantee Fund)
4. Replication to other towns and cities

ESCO Market in Romania is 50m Euro +

Country	Number of ESCOs	Type of Companies
Romania	14	Consulting & engineering companies, energy service and supply companies working mainly with industrial processes and co-generation

ESCO market in Romania is fragmented but growing. Problems remain related to:
(i)Clients mistrust
(ii)Public Procurement Rules – long & slow
(iii)Lack of Pilot Demonstration Projects
(iv)Lack of Interest of Commercial Banks
(v)Lack of Awareness

Thank you!!!

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