



European  
Commission

# PROCEEDINGS OF THE REGIONAL CONFERENCE ON FINANCING ENERGY EFFICIENCY IN THE BALTIC STATES



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**EUSBSR**  
EU STRATEGY  
FOR THE BALTIC  
SEA REGION



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## Table of contents

<b><i>Executive summary</i></b> .....	<b>2</b>
<b><i>Background to the event</i></b> .....	<b>3</b>
<b><i>Session 1 - Energy efficiency finance in the Baltic region: state of play</i></b> .....	<b>4</b>
<b>Welcome and introduction by the host</b> .....	<b>4</b>
Dzintars Kauliņš, Director of Renewable Energy and Energy Efficiency Department, Ministry of Economy of Latvia .....	4
<b>EU Energy Efficiency Policy and the EU support to Energy efficiency investments</b> .....	<b>4</b>
Paul Hodson, Head of Unit Energy Efficiency, European Commission .....	4
<b>Support provided by the European Investment Bank</b> .....	<b>6</b>
Götz von Thadden, Head of Unit, Financial Instruments Baltic Sea & Northern Europe, European Investment Bank.....	6
<b>State of play of energy efficiency investments and financing schemes in Latvia, Lithuania and Estonia</b> .....	<b>8</b>
Madis Laaniste, Ministry of Economic Affairs and Communications in Estonia.....	8
Mindaugas Stonkus, Ministry of Energy of Lithuania .....	9
Dzintars Kauliņš, Ministry of Economics of Latvia.....	10
<b><i>Session 2 - Concessional loans and guarantees</i></b> .....	<b>14</b>
<b>Concessional loans: renovation of multifamily buildings in Estonia</b> .....	<b>14</b>
Lauri Suu, KredEx .....	14
<b>Energy performance contracting and ESCOs</b> .....	<b>16</b>
Ivan Gerginov, Econoler (Bulgaria) .....	16
<b>Concessional loans to ESCOs for public building renovation in Lithuania</b> .....	<b>18</b>
Violeta Greičiuvienė, Head of EU assistance division, Ministry of Energy of Lithuania .....	18
<b><i>Session 3 - Private sector investment in energy efficiency</i></b> .....	<b>23</b>
<b>Energy performance contracting for multifamily buildings in Latvia</b> .....	<b>23</b>
Harijs Švarcs, Member of the Board of the Latvian Baltic Energy Efficiency Facility and representative of the SUNSHINE project.....	23
<b>EBRD's experience on energy efficiency in industry in the region</b> .....	<b>25</b>
Toivo Miller, Principal Product Development Manager, Energy Efficiency and Climate Change Team, European Bank for Reconstruction and Development.....	25
<b>Support provided by the European Energy Efficiency Fund (eeef)</b> .....	<b>27</b>
Matthias Benz, Investment Manager, Deutsche Bank .....	27
<b><i>Closing session by the organisers</i></b> .....	<b>30</b>

## EXECUTIVE SUMMARY

This conference was the first in the series of Sustainable Energy Investment Forum events taking place until 2019, to bring together key stakeholders at national and regional level to boost large-scale investment and financing for energy efficiency. The Forum events will be the basis for long-term cooperation and provide roadmaps to improve access to sustainable energy finance in each of the programmes' target countries.

The conference heard from speakers from across the Baltic region, as well as invited experts from across Europe. Through the presentations and discussion, the following key points emerged:

- In order to deliver against energy efficiency and carbon reduction targets in coming years, the importance of addressing the energy performance of the building stock is increasing.
- There is considerable support and advice available for projects and programmes, described in detail by projects presented during the conference. The European Commission, European Investment Bank and others are seeking to bring Governments, projects and programmes together to provide opportunities for exchange of experience and capacity building.
- There is considerable interest in the current and potential future role of energy service companies, but also differences in terms of what is meant by an ESCo and the way in which they operate.
- Financial instruments, as distinct from traditional grant programmes are growing in importance. There is increasing recognition of the role that public finance can and should play in energy efficiency and energy service projects and programmes. The conference contained several presentations from successful examples from within the Baltic region. This type of activity will increase going forward.
- The role and nature of renovations to multi-family apartment buildings is a topic high on the agenda of Governments across the Baltic region. Such programmes are often of lower risk than has been perceived in the past – for instance, due diligence by the European Bank for Reconstruction and Development concluded that there have been no defaults since Renesco contracts started in 2009 in Latvia.
- The conference revealed that there are interesting initiatives and good practice as to how to implement energy renovations in the Baltic region. These range from mature examples with a strong track record to newer initiatives that include the use of more innovative financing concepts such as Energy Performance Contracting.
- While there are differences between the Baltic countries on these topics, bringing them together in this way was a valuable experience and there is scope for follow-up events and ongoing interaction.

## BACKGROUND TO THE EVENT

The Energy Union Framework Strategy puts energy efficiency as one of its five dimensions and states that it is to be treated as an energy source in its own right. The ambitious Paris climate agreement also underlines the importance of energy efficiency. Investments in energy efficiency have proven to be one of the most cost-effective ways to support the transition to a low-carbon economy. Not only do they help the EU in turning climate ambition into climate action, they also bring a number of significant benefits for European citizens and companies in terms of environment, health, security of supply, lower energy bills, more jobs and sustainable growth.

To realise the full potential of energy efficiency however, public funds alone will not suffice and private financing will have to be unlocked at scale. In that context, energy policy should create more favourable investment conditions, encourage demand for energy efficiency and help consumers undertake energy efficiency investments more easily.

This event was convened to share best practice from across the Baltic region and more widely from across Europe on financing energy efficiency. This included sessions on the use of private and public funds and innovative financing instruments, notably in the building and industry sectors. Speakers focused on practical experience in developing and structuring investment programmes. The event included panel discussion sessions as well as question and answer sessions for individual speakers. Summaries of these sessions are included within these event proceedings.

Copies of all presentations and recordings made at the event can be accessed at: <https://ec.europa.eu/energy/en/events/regional-conference-financing-energy-efficiency-baltic-states>

## **SESSION 1 - ENERGY EFFICIENCY FINANCE IN THE BALTIC REGION: STATE OF PLAY**

**Session chaired by Reinis Āboltiņš, Energy policy consultant for the Latvian Parliament**

### **Welcome and introduction by the host**

**Dzintars Kauliņš, Director of Renewable Energy and Energy Efficiency Department, Ministry of Economy of Latvia**

D.Kauliņš gave some background to action on energy and energy efficiency in the Baltic States, noting that the Baltic Energy Market Interconnection Plan (BEMIP) action plan was agreed in 2009 and was focused then on interconnection between Baltic and Scandinavian countries – energy cost in the Baltic states had reduced as a result. In 2015, two cooperation formats in the Baltic Sea Region - the BEMIP plan and European Union Strategy for the Baltic Sea Region Policy Area Energy Action Plan were merged and amended to bring in energy efficiency and renewables. All Baltic states are dealing with similar issues in these fields and are using some similar instruments to tackle energy efficiency and therefore there is some common ground and good scope for a meeting of this type.

D.Kauliņš also noted that, when thinking about energy efficiency, there are often initial questions about financing. He noted that there is work still to be done to reinforce the energy efficiency message through legislation. The event is aiming to create a regional discussion and can aid Latvia in hearing about discussion at the EU level and from across the region.

### **EU Energy Efficiency Policy and the EU support to Energy efficiency investments**

**Paul Hodson, Head of Unit Energy Efficiency, European Commission**

P.Hodson started by making clear that energy efficiency works and is delivering results. He added that it is a myth to say that it is only economic factors that have delivered energy efficiency savings. Economic growth and energy efficiency have been decoupled - Since 2006 at EU level, energy consumption has been falling while GDP has continued to grow. Europe is on a good path to reach its goal of a 20% saving in energy use by 2020.

He acknowledged that for industry, the economic recession had contributed to emissions reductions, but this is unwanted. Emissions from Europe have reduced 36 MTOE because industry is producing less, but that another 35 MTOE of savings have come from energy efficiency. For the European economy as a whole, we have seen increases in population, activity and lifestyle changes, but all of that has been more than offset by energy savings from improved efficiency. The Commission is seeking to continue to drive these efficiency gains and will release further data in an impact statement alongside new proposals being brought forward on energy efficiency, expected on 30 November 2016.

P.Hodson noted that there is a similar story in the residential sector. While behavioural change is a contributor to emissions reductions, as are voluntary replacements of products with those of better quality and lower emissions, it was product policy and improved regulatory standards for fridges and cars and minimum standards for renovation technologies that were the principal drivers of change.

He also commented that there is ongoing discussion about European energy efficiency goals for 2030. The European Commission have not yet decided what proposal to make, but it is clear that a greater contribution from energy efficiency, and from the built environment sector in particular will be needed after 2020.

On the **built environment sector**, P.Hodson emphasized that there is therefore a need to tackle energy efficiency financing for buildings. The Commission had convened an Energy Efficiency Financial Institutions Group (EEFIG) and asked them to identify key barriers. Their response was, firstly, to drive demand – we won't overcome financing barriers unless there are clear signals at EU and national level that we are pushing the demand for energy efficiency.

Three specific areas were then identified: First, **use public money more effectively** and move away from grants to more sophisticated financial instruments; Second, **aggregation**, projects are typically small and diverse and we need to find ways to bundle them together, including through the provision of technical assistance of various kinds; Third, there is a perception from the financial sector that energy efficiency investments are risky and not understood and therefore there is ongoing work looking into **de-risking energy efficiency**. A database is being produced that will show the performance of existing investments.



### **EEFIG recommendations, the most imminent challenges to overcome:**

- 1 Driving Demand
- 2 Managing Uncertainty
- 3 Distribution and Aggregation
- 4 Blending Grants and Loans
- 5 Accounting Treatment

*“Delivering on energy efficiency targets will become increasingly challenging in the next decade. We will need to address energy efficiency in buildings.”*

Moreover, P.Hodson emphasised that regional work is underway, with the Commission reaching out and coming to different parts of Europe through the new Sustainable Energy Investment Forums project, as with this event in Riga.

In summarising his presentation, P.Hodson made three key points:

- 1 – We are getting there – the 2020 goals are being achieved
- 2 – It will be tougher in the next decade, as we need to tackle buildings
- 3 – We need a strategy for private finance and Paul was interested to hear the conference’s views

## Support provided by the European Investment Bank

### **Götz von Thadden, Head of Unit, Financial Instruments Baltic Sea & Northern Europe, European Investment Bank**

G. von Thadden’s presentation provided an overview of support and advice mechanisms available from the European Investment Bank (EIB). He opened by noting that risk is at the core of the issue for many commercial lenders and that blending of public and private investment and grants and loans has become increasingly important. It is important to use risk sharing instruments to make energy efficiency investments easier to accommodate by the banking sector.

The EIB initiatives PF4EE (Private Finance for Energy Efficiency) and InnovFin demonstrate examples of this approach. Advice has also become increasingly important and the presentation also included information about FI-Compass and ELENA technical assistance.

G. von Thadden emphasized the **European Fund for Strategic Investments (EFSI)**, also known as the Juncker Plan. The fund provides €16 billion of guarantees to insure €315 billion of new investment across Europe. EFSI had introduced a suite of new products that were not normally available. He emphasized that the EIB is open to business from riskier projects and that sustainable energy investments were an important aspect of this.

G. von Thadden provided some details on the **PF4EE initiative**, which reaches out to commercial banks to finance energy efficiency. These investments may have long payback periods and advisory may be necessary to build awareness and project pipelines. He recognized that there are issues for lenders around liquidity and Basel 3 accounting rules. PF4EE takes the form of a credit line to commercial banks, with liquidity from EIB and a risk cover from the European Commission, alongside associated consultancy services. Some banks were already identifying projects and undertaking energy audits to arrive at viable projects.

G. von Thadden addressed the important topic of **Financial Instruments**, noting that these can be used to share risk in projects. He gave the example of Lithuania, where there has been use of JESSICA funds for housing renovation (further detail is provided in a subsequent presentation). Energy savings of up to 80% have been delivered in the residential sector as a result. He acknowledged that there had initially been reluctance from banks to get involved in this sector. As banks are coming to know and understand the residential retrofit market for example, EU funds have been used to create a guarantee instrument for banks facilitating for them the extension of loan facilities for this type of project. More than €1billion has been mobilised in the residential sector in Lithuania.

G. von Thadden spoke about advisory and technical assistance facilities. He commented on **ELENA**, which provides for the preparation of investment programmes in energy efficiency, renewable energy and sustainable transport. The fund can cover the costs of feasibility studies, business plans, legal advice, financial structuring and project pre-selection to build portfolios. He also covered FI-Compass, an additional advisory facility concerned with processes, guidance and procedures for EU financing instruments. This project also provides networking opportunities and seminars to discuss key issues. There is a single knowledge platform, and colleagues who can give advice.

In closing, G. von Thadden noted two key things:

- 1 - The European Commission and EIB are working together to address a number of key barriers, in particular risk reduction;
- 2 - There is considerable support and advice available for projects and programmes and the Bank and the Commission are interested providing networking opportunities and allowing Governments, municipalities and project promoters to learn from one another.



## fi-compass: what do we offer?

[www.fi-compass.eu](http://www.fi-compass.eu)



## State of play of energy efficiency investments and financing schemes in Latvia, Lithuania and Estonia

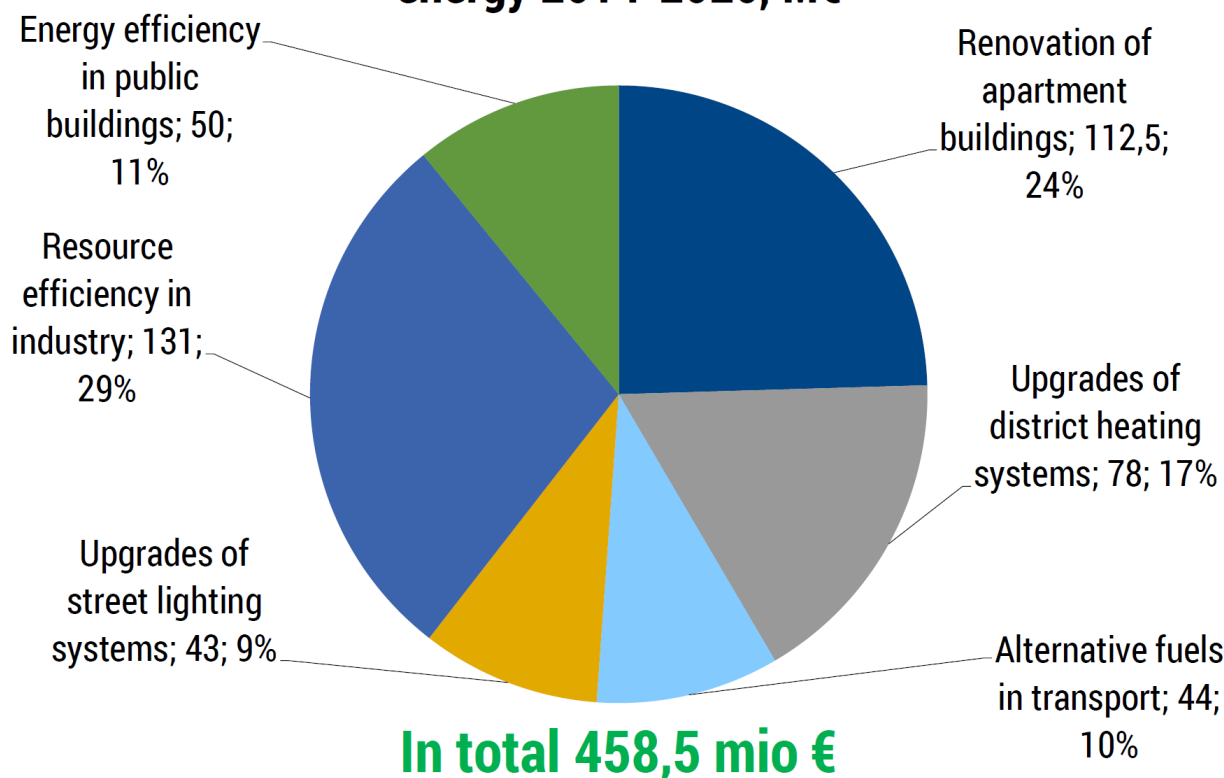
### Madis Laaniste, Ministry of Economic Affairs and Communications in Estonia

There is a highly functional banking and loan market in Estonia. Basic funding is there and can be ensured for all sectors, including energy efficiency, but there are questions as to whether the available financing is sufficient. The biggest Government contribution is through investment grants. These are targeting sectors where the market will not deliver, or returns are not attractive enough for private financing. Loan guarantees are not typically used in Estonia. There is also a modest ESCo market.

The overall tax environment is also important. In Estonia there is a tax exemption for loans into energy efficiency improvements. These tax relief regimes do not apply in all cases, for example they do not cover apartment buildings. Individual houses however can benefit from the exemptions. There is a heavy tax on energy carriers in Estonia, in particular motor vehicle fuel which is more heavily taxed, as well as some forms of heating fuel tax.

Under the 2014-2020 structural fund period (see pie chart below) over 450 million Euro will be made available in Estonia for energy/energy efficiency projects. PWC had undertaken a study in Estonia on resource efficiency in industry and possible renovation of apartment buildings. This work had included looking at routes to introduce more private financing.

## Planned funding of energy efficiency and renewable energy 2014-2020, M€



There has also been an ex-ante assessment of the use of financial instruments. On streetlighting investment alone, systems that are more than 20 year old may need €60 million of energy efficiency investment, and it was recognised that this cannot all be covered by Government. Grants of up to 75% for beneficiaries will get payback period down to 10 years. Only 15% of the investments deliver savings (lamps), remainder is ensuring that these savings can be delivered, i.e. is investing in the supporting infrastructure. Grants are still an important element of energy efficiency financing in Estonia, but these will be targeted towards topics where they are most needed.

### **Mindaugas Stonkus, Ministry of Energy of Lithuania**

In Lithuania, energy intensity is reducing - since 2010, primary energy intensity has reduced by 15% and final energy intensity has reduced by around 8%. Energy intensity has reduced by almost 66% since 1995 and the plan is to continue to reduce this further towards the overall EU average. There has been GDP growth of 17% since 2010 while energy consumption has remained roughly level over same time period. The Ministry of Energy is updating its strategy and the target in the current draft is that in 2030, Lithuania should meet average EU energy intensity.

When it comes to building renovation, multi-apartment buildings and public buildings are a key focus, alongside education and training of energy users. Step by step, the country is moving from grants to financial engineering. In 2015, a renovation programme for public buildings was

adopted that provides loans and loan guarantees. In the beginning of 2015, an energy efficiency fund was established to present these new facilities to the market. An energy efficiency law was also adopted that focused on education of users and on financing instruments.

There have been large increases in energy efficiency programmes in multi-apartment buildings and some projects are also underway in public buildings.

## RENOVATION OF BUILDINGS

	Energy and CO <sub>2</sub> savings
<b>Multi-apartment buildings</b>	
Renovated till now – 976	196 GWh and 45 000 t CO <sub>2</sub>
Renovating – 1748	350 GWh and 82 000 t CO <sub>2</sub>
Planning to renovate – 3658	731 GWh and 170 000 t CO <sub>2</sub>
<b>Public buildings</b>	
Renovated till now – 912	182 GWh and 42 000 t CO <sub>2</sub>
Renovating now – 30	6 GWh and 1 500 t CO <sub>2</sub>
Planning to renovate – 300	60 GWh and 14 000 t CO <sub>2</sub>



### Dzintars Kauliņš, Ministry of Economics of Latvia

In order to reach the binding 2020 energy efficiency targets, in 2016 an energy efficiency law was established, which has two main components: a list of alternative measures and the introduction of an energy efficiency obligation scheme. An energy efficiency fund is also being established at national level, that may also offer support to municipalities.

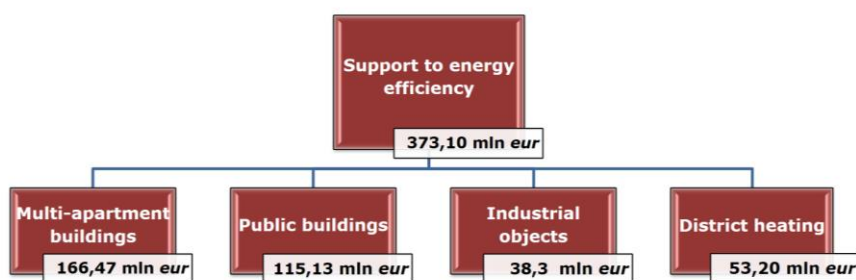
It was recognised that energy efficiency obligation schemes can be a good means to provide extra efficiency measures where they may be most needed, for example in households and SMEs. These end users have traditionally been harder to reach, so this may be most appropriate solution. The scheme design had sought to balance the costs and benefits of such an approach.

For the 2014-2020 period, €370 million from ESIF has been allocated for different energy efficiency fields. On multi-apartment buildings, Latvia has taken a step forward from the previous funding period by providing financial instruments and technical assistance. There is improved understanding of the engineering systems within buildings and support for renewable energy is also included. The financing systems will also be amended so that **ESCoS can implement projects which benefit from ESIF** and thus finance more projects with less public

money. A similar scheme exists for improvements to public sector buildings, which is supported at a higher grant rate. Support is also available for manufacturing industry. A 30% grant is available for actions that reduce building energy use, for production facilities and for the installation of renewable energy technologies. On district heating, system losses may be as high as 30% in some cases and there are many systems in need of investment. In this case, longer term investments are being supported.



## Financing, funding support



+ other support programs related to energy efficiency in low energy consumption buildings, municipal buildings, transport infrastructure etc.

The Government is seeking to develop the ESCo market in Latvia. There are some market players, but there is still scope for the market to develop further. Changes to the financing system will allow ESCos to participate in projects in multi-apartment buildings. More than 1,000 building renovations are planned and the hope is that ESCos will gain experience early on from some of these projects and then use this track record to attract additional financing. Further detail is given in a subsequent presentation on the LABEEF fund.

In concluding, it was noted that energy efficiency friendly legislation was needed and that all Ministries need to be engaged. Awareness raising of energy users was also considered to be important. Up to 2020 and then beyond, the Government are looking to support and further develop the ESCo market.

### Questions and Answers session

Q - Grants alone are not sufficient to address the level of investment needed in energy efficiency. After 2020, in the next structural fund period, what amount of grant, if any, can be expected? Is information on this being communicated to national governments?

A – P.Hodson: It's a difficult question to answer. The European Commission had tried in renewable legislation to indicate how financing would work after 2020. The current political situation has complicated the post-2020 financing framework. The trend is however clear – we need to stop paying public money for private benefit from grants.

Q – Could Estonia provide some more information about their taxation policy?

A – M.Laaniste: Taxation policy in Estonia is not attractive for investors in apartment buildings. There are some tax breaks for companies, but use of these is rare in Estonia. If an apartment block is multi-owned, then investors can't benefit from profit tax exemption, that is to say condominium co-operative payments cannot be deducted from tax returns. The support scheme is there for individual homes though.

Q - Could Latvia highlight the main measures that are available to support ESCos?

A – From a number of panel speakers - At present, the approach is to build the project pipeline and then secure long term financing. The concern at present has been to obtain short term funding to enable projects to happen. This will help establish a track record for longer term financing. Some projects may only need technical assistance, while some have issues with risk. Initiatives such as PF4EE may be useful here and grants can remain as the last option. On multi-apartment buildings, 50 or 100 new projects will be developed through ESCos as the next step to 2020 to create a track record and the larger pipeline will follow from there.

Q – How can this be influenced, what steps are being taken to develop the market?

For Lithuania, there is a beginning ESCo market for renovation of multi-apartment buildings. The next step for them is to bring in public buildings and lighting. They are taking a portfolio approach to bring in other investment opportunities. In Estonia, there is a community finance project in the transport sector, that is renting electric vehicles and renovating buildings and includes some work on streetlighting, so taking a portfolio approach too.

Q - What is meant by renovation in the Lithuanian example? Ventilation, heating and insulation?

A – M.Stonkus: Renovation of apartment buildings includes ventilation, heating and insulation. Public buildings work also includes multiple measures.

Q - In the Latvia apartment renovation example, grant is given at 50% rate for individual apartment owners – do the scheme operators deal with each individual owner of 60 flats?

A – D.Kaulins: Apartment owners have to agree to proceed with a project and then they receive 50% co-financing.

Q - How well are Baltic states using EIB instruments and are there any differences between them?

A – G. von Thadden: Although the problems faced appear to be identical, it would be like comparing apples and pears. All have their own problems to solve. Lithuanian legislation makes it difficult to secure loans against mortgages and individuals would be evicted if they didn't pay. In particular, in multi-apartment buildings it became unsecured lending. In Estonia, the lending approach is different. If a bank had concerns, they could standardise guarantee mechanisms

through e.g. PF4EE. In this kind of way, different mechanisms are appropriate for each country. All three are making good progress, but it is important to identify any remaining issues. Multi-apartment buildings are an issue. In some countries, technical assistance is also needed, in particular where homeowner associations might not be so active.

Q – The ESCO market could operate in multi apart buildings, but contracts could not be based on energy performance contracting as user behaviour is such a big issue.

A – Several speakers: Due diligence has been undertaken by EBRD on ESCo projects in multi-apartment buildings in Latvia. They have not found any defaults – the system therefore seems to be functioning well. Other cities have had to develop a different style of interaction with the private sector, “working with them, not doing things to them”. There are requirements on actions within individual Articles of the Energy Efficiency Directive and gaps in implementation will be pursued by the European Commission. As an investment sector, energy efficiency requires quite a lot of input from the public sector – risk coverage, technical assistance etc. Energy efficiency investments may be a grey area, they don’t always require grants, but may also offer a lower level of investment profit. There is a role for the public sector in making private sector investment more attractive.

## SESSION 2 - CONCESSIONAL LOANS AND GUARANTEES

### **Session chaired by Gergana Miladinova, DG REGIO, the European Commission**

In opening the session, Gergana pointed out that both energy efficiency and finance instruments were important for regional policy. She noted that while under the previous 2007-2013 structural fund programming period there had been a maximum ceiling for energy efficiency investments, during the 2014-2020 period this had changed and there was now a minimum earmarking in place for investment in the low carbon economy. This had led to significant allocations of funds to this topic with €18 billion of low carbon economy funding (three times more than in the previous funding period). Gergana also agreed with previous speakers that finance instruments were needed to move markets and that support tools such as FI-Compass and the EEFIG work were important.

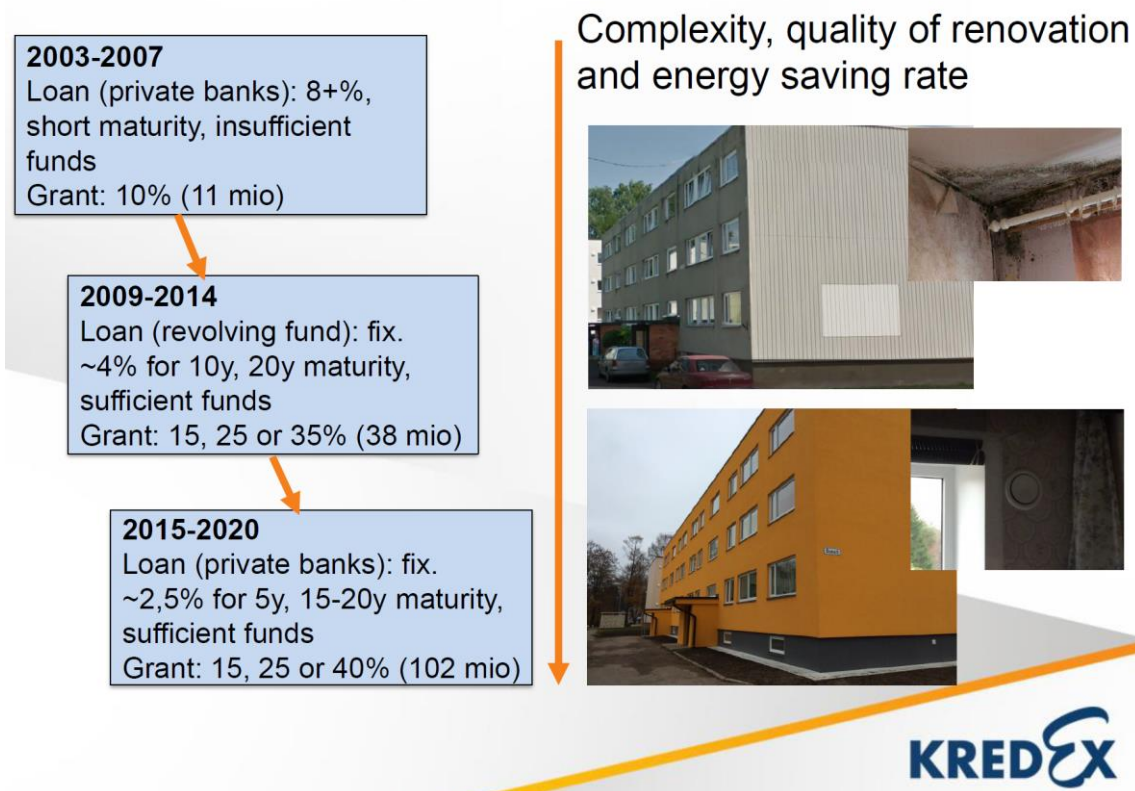
### **Concessional loans: renovation of multifamily buildings in Estonia**

#### **Lauri Suu, KredEx**

KredEx has been in operation since 2001 and falls under the jurisdiction of the Ministry of economic affairs and communications in Estonia. The Housing and Energy Efficiency Division provides individual house and apartment loan guarantees and reconstruction grants to improve multi-apartment buildings.

95% of Estonian housing is privately owned and energy efficiency levels are generally low. Of a stock of around 20,000 apartment buildings, only approximately 300 deep renovations have been undertaken, using multiple complex measures.

An initial grant scheme operated between 2003 and 2007, which had a grant scheme to cover 10% of renovation implementation costs. Under this scheme, single works were typically undertaken, energy efficiency was not really present and there were overall quality issues. Little attention was also paid to in-home environment improvements (ventilation etc). To build on this, a holistic framework with a strong legal framework and awareness raising was identified as the way ahead. An improved renovation scheme moved from grants to a revolving fund scheme. This used ERDF funding and a loan from the CEB and lent to private banks, who then on-lent to homeowners alongside traditional home loans. The banks also took on all of the product risk. Agreeing loan maturity periods and fixing interest rates for 10 years were important components in selling the product to the banks. Interest rates averaged ~4% and no collateral is required. To secure agreement to proceed in multi-apartment blocks, a 50% plus one vote rule is established. The average loan amount per building and the complexity of works has increased over time. The scheme ran until 2014 and wouldn't have worked without the initial grant scheme.



Between 2010 and 2014, 661 blocks (55,000 inhabitants) got the grant, less than one third undertook complex renovation delivering at least a 35% energy saving.

In its current guise, the scheme is focused on grants, because the feasibility study concluded that **banks no longer need specific credit lines due to the successful experience of the previous revolving fund**. A €102 million cohesion fund facility is being used to provide grants to increase the quality of design documents for building renovation and to increase access to technical consultants. Protocols for ventilation work are also in place. Approximately 600 buildings will be funded from this new facility.

In conclusion it was observed that there may be little alternative to grants to secure deep renovation. There would however be increased tax revenues from suppliers and consultants as a result of such schemes.

### Questions and answers

In opening the floor for questions, G.Miladinova commented that the European Commission have been promoting the KredEx example. They were surprised when KredEx came with a grant request under the current structural fund period. They did however look into things more and knew that there had been an ex-ante market assessment. The Commission would like other Member States to follow the example – Estonian banks are now routinely providing loans for building renovation. Previous efforts are paying back. For deep renovation and addressing ventilation issues, the need for this type of grant support is recognised.

Q - Who is getting the loan in multi-apartment blocks? An owners association or individuals?



A – A homeowner association gets the loan, not each specific apartment owner. Associations are the legal owners and must have agreement to proceed with the loan and the improvement works, at 50% of all owners plus one.

Q - KredEx provides loan guarantees, but for whom?

A – Guarantees are for the banks, in particular for situations when they may perceive risk levels as too high, for example in more rural locations, or where there are a higher proportion of debtors in the block. Kredex guarantees are not specific to energy efficiency projects.

## Energy performance contracting and ESCOs

### **Ivan Gerginov, Econoler (Bulgaria)**

I.Gerginov's presentation provided a wider overview and some international experience with ESCOs and Energy Performance Contracting.

Energy efficiency and clean energy has to be viewed as a financing and investment problem, the decision to proceed ultimately comes down to an investment decision. It is well understood that there are a lot of barriers for the energy efficiency industry. Investors and banks are demand driven, there needs to be a market. Project finance and collateral-based lending have specific regulations, which prevent the finance industry from creating systemic risks, this also needs to be taken into account.

ESCOs should be viewed much more broadly than companies that carry out performance contracting for a living. There is a need to develop interest in new markets beyond short payback performance contracts, while remaining realistic about what is possible and over what time frames. The ESCo sector in Baltic countries, as elsewhere, is fairly small. There is a need to develop this to be able to handle larger volumes of investment.

Many services can be provided by an ESCo and the financing structure may not be one of them. It is important to consider which of the components of an EPC structure the market is best able to handle.

## ESCO MODELS

### Comparison of the various models

Contract Type	Who's Balance Sheet?	Who Bears the Performance Risk?	Project-Specific Financing?
Shared Savings	ESCO	ESCO	Yes
Guaranteed Savings	Customer	ESCO	Yes
Chauffage	ESCO	ESCO	No

### Other types of models:

- › Leases
- › Other non-recourse financing vehicles

17



It is also easier to start an ESCo as a subsidiary of a larger company.

*“The ESCo is the iPhone of the energy efficiency market – in some cases they may be too sophisticated”.*

ESCOs often fail on practical aspects – how many projects can they handle, risks outside of the project and their relation with financial institutions.

The European Joint Research Centre is working on a new report on ESCos. This is tracking the developments in the ESCo market over time. As with an example given from Bulgaria, market development tracks the broader economic cycle – over saturating the market with grants means that ESCos get left aside. It is a volatile industry and it takes consistency and a step by step approach to develop it.

Lessons learnt – piloting is good and successful, but scaling is the problem. It can be hard to standardise and therefore hard to scale. A strategic approach is needed from government on one side and dedicated funds on the other using grant or equity to fill gaps in the ESCO industry structure in a particular country. Colombia are attempting to standardise contracts etc to help with development of the ESCo market.

From international experience, the development of ESCo markets is country specific and industry specific, there is little replicability. The approach to assessing the market is replicable, but ESCo systems themselves may not be replicable across national borders.

### Immediate questions

Q – The ESCo markets talked about are all very different. Is there comparability between the markets for ESCOs in different countries?

A – They are very different, as is the readiness of the market to accept these types of projects. Colombia drew examples from Bulgaria, but thought about how these could be applied. The study of best practice was good to get people thinking about how to apply the ideas in their own environment.

Q - Eurostat had ruled in 2015 that ESCo investment into public sector buildings would still count towards public sector debt. Governments had thought that they would get their energy efficiency investments off the public sector balance sheet, but this was not the case. So why use ESCOs for public buildings if there is a good public sector investment potential?

A – If there is no ESCO to do the monitoring and evaluation then performance deteriorates after the first few years. Ideally you need somebody to maintain savings over the lifetime of the improvements.

P.Hodson noted that there will be a meeting between Eurostat and Member States at the end of November 2016 and that the Commission are hoping for clarification after that.

Q – The IEA had undertaken research that had shown that only the US and China have big markets for ESCOs and that China and the US had told industry (China) and the public sector (USA) that they would be penalised if they didn't improve EE – is this the case?

A – China's industrial setup means that there are a lot of single issue ESCOs (e.g. there is one only operating in the glass industry with several hundred clients). ESCo sector in US exists because of the federal government.

Additional comment from industry speaker from the floor - ESCOs are complex and do focus on big projects. Medium sized clients may not know how to specify projects and procure the correct services and they typically don't have resources to address financial instruments. How can we engage mid-sized companies and building owners? Transaction costs may be so high they are unlikely to opt to go down this path.

Comment from the floor - Panel construction buildings are a large component of the buildings market in Latvia. The resulting ability to standardise improvement and renovation packages had meant that there was replication, which can aid scaling.

## Concessional loans to ESCOs for public building renovation in Lithuania

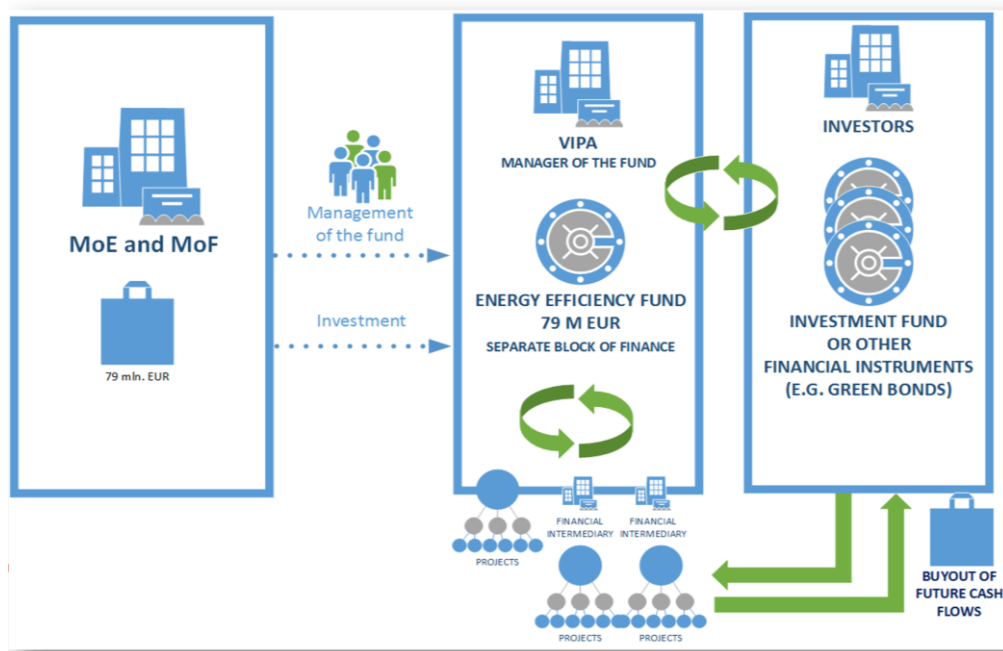
### **Violeta Greičiuvienė, Head of EU assistance division, Ministry of Energy of Lithuania**

The European Energy Efficiency Directive sets a requirement to renovate annually at least 3% of total floor area of buildings owned and occupied by central government and to achieve 1.5% energy savings per year. In order to establish a financing vehicle to help deliver against this

commitment, an ex-ante assessment for scheme design was undertaken. The resulting chosen model was a fund of funds.

An energy efficiency fund (ENEF) was established in February 2015, made up of two instruments - one on public building renovation (€65 million) in the form of loans, and secondly a streetlighting modernization in the form of guarantee (€14.5 million). On public building renovation, the €80 million is expected to attract €74 million of additional private sector finance and to renovate more than 500 buildings and deliver over 40% energy savings.

### SCHEME FOR PUBLIC BUILDINGS RENOVATION AND STREET LIGHTING MODERNIZATION



The fund supports ESCOs as much as public building owners. National legislation does not allow budgetary institutions to borrow funding for such projects. The conditions of the loans are determined by the nature and type of the borrower. ESCOs can borrow at 0% interest and central Government building managers can borrow at a fixed 2% interest rate. The Lithuanian Government want to encourage ESCOs to participate in financial instrument implementation. The loans can cover up to 80% of eligible expenditure, with the ESCo covering the remaining 20%.

There are also principal requirements for such projects. For example, buildings should start at energy class with rating D or lower and must be renovated at least to energy class level C (30% energy savings achieved). Additionally, the building should also continue to be used for its stated purpose for a minimum of ten years.

On launching the Fund, a set of standardised ESCO procurement documentation was approved by the Minister of Energy, public buildings renovation program approved by Government so that building owners were not starting from scratch each time a new building was considered for renovation. A set of selection criteria for ESCOs delivering the works were also developed, with weightings for each of these criteria. The highest weighted factors were the number of contracts

for renovation from within the existing portfolio (i.e. track record) and annual income of the ESCo over the previous 3 years. Standardised documentation for ESCO procurement was developed under EBRD ELENA facility. Further work in improving ESCO procurement documentation will follow, as part of the GuarantEE project funded under Horizon 2020.

Three pilot projects are underway. Three police headquarters are undergoing procurement for ESCO companies. This work started in Spring 2016 and the contract negotiation procedure will be complete by the end of 2016, with loan agreements being put in place in January 2017.

In implementing the scheme, there have been challenges. There was a low base of experience with loan scheme implementation and a lack of experience in procuring ESCOs. The production of standardised documentation is designed to help with this. There have typically been long payback periods for proposed projects and dealing with potential State Aid issues has posed a challenge. State Aid considerations have been evaluated at each level of financial instrument.

### **Panel discussion and Questions and Answers**

In opening the discussion session, G.Miladinova commented that it is good to see the use of different EU financing mechanisms – ELENA, Horizon2020, ESIF and other financial instruments. DG Regio figures put the use of FIs from cohesion policy in instruments in the low carbon economy at €900 million. €4 billion into this funding area is planned across the whole 2014-2020 funding period, so the Commission would like to see more. Ideally, DG Regio would like to see €8 billion for low carbon investment through financial instruments.

Q –Why does ESCo involvement come so late in the project process in Lithuania (after the technical design is more or less done)? Would it not be better to get them involved in the first stage – to create the overall proposal and to undertake energy audits? This would help with guaranteeing performance, so that they understand documentation and project appraisals. if they are not the ones undertaking the audit, how can they provide a guarantee?

A- On the stage of involvement of the ESCo – ESCOs can undertake their own audits, or use those that have been generated in earlier stages of the project by other organisations.

Q – Question for Lithuania on the criteria for selection. Why were the weighting criteria set so that energy savings is set at only 20% and price at 50% and not the opposite? Secondly, are loans to state organisations allowed?

A – In Lithuania, the ESCo model was applied to central Government building renovation in order to allow public institutions to undertake these types of projects (ESCOs are borrowing, not the Ministries). On selection criteria for ESCOs, of course energy saving is important, but price is a key criteria because of the overall ability of a Ministry to be able to fund a project.

Q - In the Bulgarian example, ESCOs do not just provide financing, but the number doing so has gone down?

A – On the Bulgarian example, many ESCOs in Bulgaria evolved from auditing companies rather than from the financing side. The JRC methodology for categorising companies as an ESCO takes a broad definition.

Q – Question for Lithuania - Why introduce an ESCo regulation?

A – The Lithuanian Government wanted to build the ESCo market. Should the ESCo move first or the market?

Q – Question for Lithuania – What do you mean by an ESCo regulation?

A – A set of standardised procedures that govern procurement of ESCOs and a definition of the whole ESCO model process.

Q – There may be no such things as an ESCo? Large contractors undertake energy service works and standard contracts are needed for specific applications (as with the China example cited above).

A – I.Gerginov: Agreeing on definitions and creating markets can be difficult. For example in Turkey, the establishment of a licensing system without a clearer market in the industrial sector had meant that market growth had not occurred. It was also noted that ESCOs would need projects that were capable of delivering large energy saving rates. In some apartment building renovation projects, the economics of projects had relied on grant schemes for additional funding for renovation measures. Without these grants in place, ESCOs may have opted to focus on other markets.

Q – What about capacity within the construction sector that will deliver building renovations? As with the experience around implementation of the Wastewater Directive in the mid 2000's, where the market reacted in a way that meant that prices went up for construction, in part due to lack of capacity – will this happen with building renovation?

A – Prices are going up in the renovation sector, but because prices are going up in the whole building sector. There are bottlenecks around skills in some specialist renovation works e.g. ventilation with heat recovery. The bottleneck currently is around those organisations capable of delivering detailed design documents. In Estonia there are currently too few companies in the sector doing this.

Comment from the floor – There will inevitably be bottlenecks with market growth. For example, in the social housing sector in France, external wall insulation stopped for a while in the mid 1990's. At that stage it was not even possible to get a quote, then there were concerns about price, then about technical complexity. Slowly these barriers were overcome. Now new low energy buildings represent 0-3% extra cost and it is easy to find people who can deliver the works, although quality may be an issue. Training is important. The Build Up Skills programme is working to train people in energy efficiency in buildings and to support the market - ultimately the cost will come down

Q – In an example given from Latvia, when a grant component towards retrofit costs is injected in a short period, then costs had gone up, and typically quality had also gone down. Energy Performance Contracting can help – long term financing and the provision of engineering skills can ensure quality and negotiate prices for works.

Q – In a social anthropological study in 5 Latvian cities, no standard models of a renovation offer was found. What do we mean by renovation? There may be standardisation through

Energy Performance Contracting and being clear on what's being offered to residents is important.

Panel members were then invited to sum up their take away messages from the session:

L.Suu – energy efficiency is important, but so is indoor climate, we should take a broader view. What do we want? Very high energy saving rates from refurbishment, or high energy saving rates plus good health for people who live in the apartments?

I.Gerginov – The more public money that is injected into the energy saving sector, the more inefficient it may become and there will come a point of no additional value from public funding. Wherever the public sector is using funding in this field, then we should be clear on how much and why. Grants are easier to implement, but if the same amount was put into an interest rate subsidy, it could achieve the same result over five years with fewer free riders. There are lots of barriers to energy efficiency. We need to recognise those which we can target in a particular way.

V. Greičiuvienė – In order to allow the market to participate in the implementation of financial instruments, flexibility and simplicity in regulations that shape the delivery vehicles is needed.

G.Miladinova – public funding is still needed and this will continue to be the case in future. It should though be targeted, with a simple framework, more standardisation of certain aspects and the need to look at delivery mechanisms (e.g. grants or loans). There is no silver bullet. There are many solutions out there and it was helpful to hear some examples of how a variety of instruments have been applied.

## SESSION 3 - PRIVATE SECTOR INVESTMENT IN ENERGY EFFICIENCY

**Session chaired by Reinis Ābolģiģš, Energy policy consultant for the Latvian Parliament**

### Energy performance contracting for multifamily buildings in Latvia

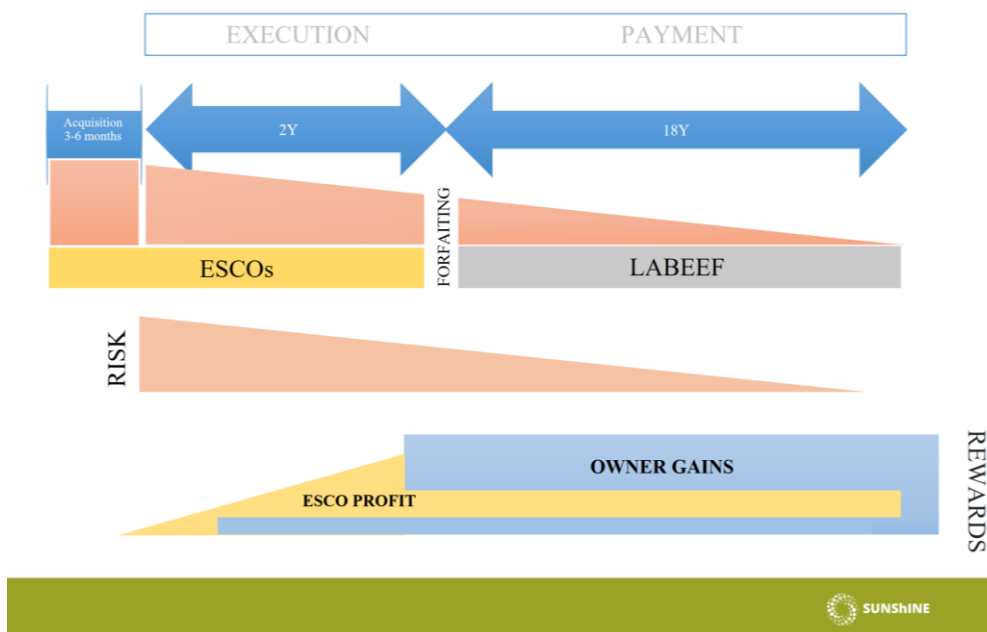
**Harijs Ŗvarcs, Member of the Board of the Latvian Baltic Energy Efficiency Facility and representative of the SUNSHINE project**

H.Ŗvarcs set out the operation of the Latvian Baltic Energy Efficiency Fund (LABEEF), which buys ESCo receivables in the housing renovation sector to enable the energy service companies to release frozen equity. The Fund is aiming to launch in 2017. LABEEF believe that energy performance contracts and ESCOs are the right vehicles to deliver the results requested by residents – long term guarantees of energy savings.

The fund was established to overcome a particular problem. ESCOs need long-term funding, but their equity is not sufficient in order to develop their project pipelines: ESCOs need to get back their equity which is frozen in existing projects. This is particularly the case for smaller companies, which represent most of the ESCo market. LABEEF acts as an intermediary and enters when ESCOs have delivered their projects, after at least one winter, for the remaining term of the contract. The ESCo sells to LABEEF 80% of the receivables (i.e. future energy savings) against cash from LABEEF, and keeps 20%. These are then repaid through the service charge and ensure that the ESCo performs as expected. So far, LABEEF has based its work on 15 existing contracts implemented by Renesco, which have shown zero payment or energy savings default. LABEEF also provides a single end-to-end IT platform ([www.sharex.lv](http://www.sharex.lv)). The IT platform used is also seeking to enable scaling and improve risk management, in part through standardisation of procedures and contracts.



### LABEEF UNDERTAKES LOW RISK FINANCING



As noted in an earlier presentation, the Latvian Ministry of Economy is providing regulatory support to help develop the ESCo market. The next step for the project is the acquisition of a building portfolio of good quality and then establishing a transparent track record. LABEEF are seeking ESCOs to join the programme and bring their portfolios to LABEEF. The ultimate aim is to also undertake work on public sector buildings, to further develop the sharex.lv IT platform and then from there to scale and go subsidy free.

#### Immediate Questions

Q – What is the primary target for the fund?

A – Multi-family Soviet era panel built apartments. These were standardised in construction, so can be standardised in retrofit. It represents some of the lowest hanging fruit and has significant energy saving potential. Eventually, as technical solutions develop and there is greater know how within the fund, then other building sectors will be considered.

Q – What is the internal structure in terms of staff within the facility? If the team are starting to develop a portfolio, then does every transaction have its own from of contracts etc?

A – LABEEF is buying a fairly standard portfolio, some similar buildings were renovated 3-5 years ago based on similar EPCs. These contracts will be different to the ones LABEEF would like to introduce into the market and is has been a different experience with the risk level of these. The team is multinational, with experience of energy efficiency and ESCos in Latvia, the Netherlands and other Baltic countries.

Q – You also mentioned Renesco contracts within your presentation. Was there public support funding involved in the 50-60% savings figures quoted?

A – Yes, there were public contracts involved to support the delivery of these higher savings figures, at around 35% subsidy. It may be possible in future to operate without the need for this.

## EBRD's experience on energy efficiency in industry in the region

### **Toivo Miller, Principal Product Development Manager, Energy Efficiency and Climate Change Team, European Bank for Reconstruction and Development**

T.Miller's presentation went wider than just industry and covered Green Economy Transition (GET) and approaches to de-risking and scaling up energy efficiency investments. Toivo noted that the Paris Agreement feeds into the idea of GET. Energy efficiency alone is not enough and there needs to be good quality indoor environment within buildings (ventilation etc.) and that projects also need to be viable from a commercial perspective. In essence this is EBRD's approach to support energy efficiency and renewable energy generation alongside waste avoidance and the circular economy, and that taken together, this formed the green economy approach.

T.Miller highlighted the need for Technical Assistance to help build pipelines of projects. He considered the case in the public sector, where in some cases, public procurement rules had set standards and tender documents had been issued, but still projects had not been brought forward. He highlighted the situation in Serbia where there had been one failed PPP contract that had negatively affected the appetite for this market. There is now one streetlighting contract using EPC and work underway using an EPC framework in public buildings. The private sector were happy with this approach as it had helped to de-risk projects. Standardisation and project origination are key.

T.Miller noted that EBRD are also working with LABEEF and had used external engineering consultants to assess the portfolio. 95% of the 39,000 multi-family apartment buildings in Latvia were built prior to 1992. These are inefficient buildings (with energy demand of more than 200 w/m<sup>2</sup>/yr). The consultants had found that many of the buildings were ageing badly, wall cracks had meant that humidity had got in and this could eventually become dangerous. The renovation work was lengthening the building lifetime, typically by around 30 years. End user considerations had been important in EBRD involvement in LABEEF. It was important that residents did not end up paying higher energy bills, and that those in renovated apartments could pay what was being asked for by the fund.

## Creating opportunities from energy savings: performance based deep retrofits



### THE PROBLEM

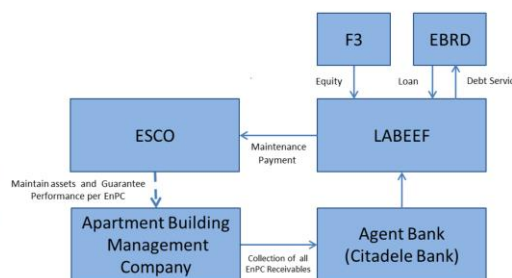
- Multi family buildings (MFB) struggle to initiate, implement and finance deep retrofits.

### THE INNOVATIVE SOLUTION

- ESCOs are contracted for the technical design, implementation, financing and energy savings.
- ESCOs are only paid based on performance (=no additional costs for building owners).
- LABEEF purchases implemented and performing ESCO projects.
- This helps ESCOs to have cash for implementing additional projects.

### THE EBRD'S ROLE

- Helped develop the financing structure.
- Intention to provide debt-financing to LABEEF for purchasing the receivables of implemented projects.
- Intention to support state to extend concept to public sector buildings and street lighting.



The structure of the LABEEF fund means that risks are aligned such that each partner is best placed to pay for the correct element. **EBRD due diligence concluded that there have been no defaults since Renesco contracts started in 2009.** Renovation works had delivered 54% average energy savings. T.Miller considered that there was a commercial interest for the private sector in generating and keeping future business. The private sector can initiate contracts under the scheme, greater involvement from the public sector would require procurement processes and project initiation by building owners. T.Miller re-iterated the point made in the previous LABEEF presentation around contract standardisation. He considered that this was an important route to scaling.

### Q&A

Q - Who is the counterparty for the ESCOs? Would you index contracts (as they are 20 year contracts)?

A – Yes, contracts would be indexed against CPI. The ESCOs work with housing association representatives who have power of attorney to act on behalf of all the residents.

Q – How does the nature of energy consumption in the buildings and the possible percentage of energy savings influence the nature of the contracts? How can investment in deep renovation be justified from the possible savings as against just fitting insulation to walls? How are the energy use calculations weather adjusted to account for changes to the amount of receivables in coming years?

A – Higher energy costs reduce the payback period. In some cases, the difficulty of a particular renovation project would preclude their involvement. Calculations already undertaken have shown that an ESCo model should work. Some resident co-financing could be used to help with

the balance between cost and savings. The number of blocks involved also helps to de-risk the project overall and gives confidence that there is a market.

Q – What do you mean by consumers not paying more than before? Do you account for previous years payments and weather, or take an average?

A – EBRD ask for access to three representative years' consumption data, from which an average is taken and then using present day energy tariffs a calculation of possible cost savings is made. The ESCo should not be exposed to price risk, but should pass this on to residents.

Panel member comment - In Internal Rate of Return calculations, households may gain and even if they have to pay a little bit more for their energy, proceeding with the renovation works makes sense. If there was no renovation, then there would be additional maintenance costs over 20-30 years (as well as additional CO2 emissions). Household gains are significant, even if all of the gains are not exactly as modelled.

Q – Comment from the floor – There is value to safety improvements as well. These are private buildings, so residents would be responsible if the block needed to be demolished and rebuilt if the renovation work was not undertaken.

## Support provided by the European Energy Efficiency Fund (eeef)

### **Matthias Benz, Investment Manager, Deutsche Bank**

M.Benz' presentation set out the structure and operation of the European energy efficiency fund (EEEF), which was established by the European Commission and EIB five years ago to help towards EU climate and energy 20-20-20 goals. The fund is an independent vehicle, that is a PPP itself. Beneficiaries can be from the public sector or ESCos, utilities, housing providers or others acting on their behalf. €265 million in total is in the fund, around half of which has been invested to date. The fund supports projects delivering energy efficiency, renewable energy generation and clean transport.

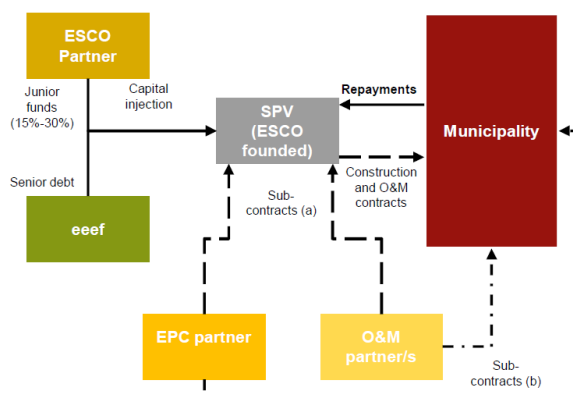
## eeef is a financing instrument with flexibility to structure funding according to projects' needs



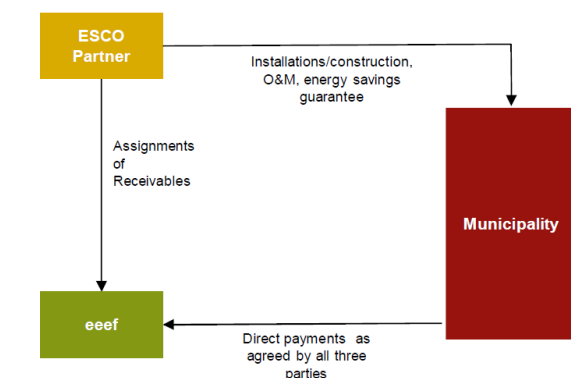
**Various financing instruments**

- The Fund offers various financing instruments including senior debt, mezzanine, equity, leasing structures and forfeiting loans. In addition to direct lending, two tailored funding structures are illustrated below
- Fund can operate as part of a lending group or as the sole investor in projects to simplify implementation and lower execution costs

### Classic project finance structure



### Purchase of receivables



M.Benz noted links to other funds that are available, in order to source projects for EEEF from the public sector. He mentioned ELENA, that could provide technical assistance in data gathering and staff capacity building for project preparation. He observed that there may also be significant barriers in place to project and portfolio development, including accounting rules, procurement, quality of guarantees and public sector borrowing ceilings.

EEEF is a flexible facility that can offer non-recourse financing solutions, including purchase of receivables. M.Benz gave the example of OSER in the Rhone-Alpes region in France, where project aggregation had been used to overcome barriers to the financing of smaller scale energy efficiency projects. The region had brought together a number of schools and used technical assistance funding to help shape the nature of works to be undertaken. EEEF provided bridge financing during the construction phase, to enable perceived risk from banks around the performance of energy saving improvements to be overcome. The individual smaller projects could not attract financing, but aggregation into a single pipeline meant that it was easier to handle the complexity of each individual case, and made the overall portfolio financing more attractive.

### Immediate questions

Q – Was an ESCo established by the Rhone-Alpes regional authority, or was it procured? Who is responsible for delivering the energy savings?

A – A special purpose vehicle was set up by the region and individual municipalities and they will tender for the right ESCo solution. The scale of the opportunity allowed them to attract this international attention. This SPV is responsible for delivering the savings, but it passes these obligations on to subcontractor ESCos.

### **Panel discussion**

Q – from the moderator – The issue of debt is interesting, especially in multi-apartment buildings and particularly in geographic areas where social and economic wellbeing are lower than average. Residents may be struggling to pay heating bills, in part because of poor energy efficiency and the cost of the energy bill could pay for the renovation works. Many people in this type of situation may however be barred from applying for credit. How can we help in such a case?

A – In general, banks and utilities like to worry about debt and don't focus on the bulk of people that pay on time. In Riga, late payments (not defaults) on heating bills were around 2.5%, and dropped after renovation work. There is more that can be done through the involvement of municipalities and restructuring of housing policy to help residents benefit from the increased value of the apartment after energy renovation work.

### **Panel Closing Reflections**

T.Miller – With climate change targets, a social component, building stock maintenance issues and fuel poverty, we are in a complex ecosystem where lots of components interact. In this type of situation we need to take a view across the whole system – how will the project be initiated? Who will develop the renovation plan? Resident engagement is important and the private sector can step in here and help initiate projects as this is more difficult for public authorities due to procurement rules. On public sector buildings, there is a clear stimulus in place through the Energy Efficiency Directive.

M.Benz – Germany has the example of channelling energy efficiency investment through public banks to intermediary lenders. This has resulted in an active private market, and costs for individual householders for renovation works are also coming down, with this being driven by the legal framework that has set energy saving policies in place.

H.Švarcs – in Latvia, all major public authorities are very supportive of energy renovation projects. The Ministry of Finance and the Ministry of Economy are looking to support the growth of the market and it is an important time now to move ahead.

## CLOSING SESSION BY THE ORGANISERS

### **Dzintars Kauliņš, Director for Renewable Energy and Energy Efficiency, Ministry of Economy of Latvia**

D.Kauliņš felt that the event had succeeded in delivering a regional discussion with EU level flavour, that had made excellent use of local projects and initiatives as examples of good practice. He noted that there was a willingness among participants to learn from the best to reach goals. On behalf of the Ministry of Economy, he thanked the European Commission for their help to organise the event and thanked all the speakers.

### **Paul Hodson, Head of Unit Energy Efficiency, European Commission**

P.Hodson echoed D.Kauliņš thanks to all participants, speakers and those involved in organising the event. P.Hodson was pleased that not all of the questions were directed towards EU level speakers, there had definitely been regional questioning and cross learning. There were lessons to take back to Brussels. He and his team are much occupied with delivering the new energy efficiency package for 30 November. He noted that there would be opportunities to engage further around topics such as consumer rights, governance of the energy system and demand response. He observed that the Commission will continue their enforcement work and need to do so. The EEFIG DEEP database will launch shortly and there will be the Energy Efficiency Finance Market Place in Brussels on 18/19 January. P.Hodson closed the event by thanking everyone for taking part in a trial event that had concluded successfully.