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Foreword

In 2015, the OECD Eurasia Competitiveness Programme worked with the Government of Ukraine to develop a framework for a sustainable energy service companies (ESCOs) market as part of Phase III of the OECD project “Sector Competitiveness Strategy for Ukraine”, co-financed by the European Union and the Government of Sweden. This monitoring note assesses the progress made by Ukraine during the three years since endorsement of the policy recommendations in 2015 and makes recommendations for future activities. The present monitoring review has been carried out with the financial support of the Slovak Republic and Flanders.

Four sets of policy recommendations to support ESCO development in Ukraine were proposed in 2015, aimed at enhancing the country’s competitiveness while supporting the transition to a more energy efficient economy. The first focused on easing access to finance to increase the supply for energy services, the second on boosting demand through incentives for investments in energy efficient activities, and the third on matching supply and demand through co-ordination and improved capacity among market players. Finally, the fourth set of recommendations aimed to raise awareness and promote the ESCO model.

The results of this work were peer reviewed in November 2015 at the OECD Eurasia Competitiveness Roundtable, with peer reviewers from Canada, the Czech Republic and Germany. A report summarising the assessment and policy recommendations as agreed at the Roundtable was then published in December 2015. The Roundtable is a platform to provide OECD and Eurasia countries with the opportunity to share experiences, discuss policy reforms, and monitor progress in implementing recommendations.

Since then, the OECD has monitored the implementation of the agreed recommendations, maintaining close communication with key stakeholders in Ukraine, namely the Ministry of Regional Development, Construction and Utilities of Ukraine, and the State Agency for Energy Efficiency and Energy Saving (SAEE). In December 2017, the OECD officially launched the monitoring review process of Ukraine in the occasion of the visit to the OECD of Mr Hennadiy Zubko, Vice Prime Minister and Minister of Regional Development, Construction and Housing of Ukraine. In 2018, the OECD held a series of bilateral consultations, monitoring focus group meetings and capacity-building seminars held in Kyiv during OECD missions to Ukraine. Peer reviewers from Norway and Sweden participated in the work. An expert from the Spanish Association of Energy Service Companies (ANESE) also acted as reviewer.

The present monitoring note will be discussed at the OECD Eurasia Competitiveness Roundtable as part of OECD Eurasia Week 2018 and, following revision in light of that discussion, it will be published and disseminated to Ukrainian stakeholders and international community.

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The report was drafted, coordinated and edited by Yerim Park, Project Co-ordinator, and Florian Jäger, Policy Analyst, OECD Eurasia Division, under the supervision of Gabriela Miranda, Country Manager for Ukraine. The report benefited from significant comments and contributions from Elena González Sánchez, Director, Spanish Association of Energy Service Enterprises (ANESE); Geir Yngve Hermansen, Senior Adviser, Department for Climate, Energy, Environment and Research, Norwegian Agency for Development Cooperation (Norad), Norway; and Ronny Nilsson, Senior Adviser, Nordic Environment Finance Corporation (NEFCO), Sweden. Valuable comments, inputs and support were received from Karim Dahou, Gabriela Miranda, Arnault Prêtet and William Tompson from the OECD Global Relations Secretariat, Krzysztof Michalak from the OECD Environment Directorate, and Jessica Glicker from the International Energy Agency. Thanks are also due to Krzysztof Gierulski from the European Commission, Support Group for Ukraine for his valuable comments on the work. Important research and inputs were provided by Océane Mohseni and Nina Chiatia, and additional research and translation were provided by Lyudmyla Tautiyeva and Ievgeniia Zinchenko. In Ukraine, operational, logistical and administrative support was provided by Mykhailo Semchuk, and interpretation and translation provided by Liudmila Taranina and Alesco Ukraine.

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representatives from Kyiv, Dubno, Slavutch and Odessa from the Association of Ukrainian Cities (AUC), Olena A. Korobkova, Executive Director the Independent Association of the Banks of Ukraine; Rodion Morozov, Head of Ecological Projects Department and Volodymyr Vysotskyi, Deputy Head of Ecological Projects Department at UkrGasBank; Vladislav Berezhny, Director of Correspondent Banking and Structured Finance Department at Crédit Agricole; Oleksii Korchmit, Chair, and other representatives of the Ukrainian Association of ESCOs; and Oleksandra Gumeniuk, Deputy Director of the European-Ukrainian Energy Agency. Lastly thanks are also due to the Verkhovna Rada of Ukraine, namely Oleksander Dombrovskiy, Chairman of the Verkhovna Rada of Ukraine Committee on Fuel and Energy Complex, Nuclear Policy and Nuclear Safety and Viktor Halasiuk, Chairman of Committee on Industrial Policy and Entrepreneurship, for their availability to meet with the team and participate in the first stakeholders' seminar.

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The report is based on a variety of sources, including interviews during missions to Ukraine, information and presentations shared during the seminars, OECD reviews and research on Ukraine's governance and finance practices published by the international community. Participants at the stakeholder meetings held on 6 April 2018 and 3 July 2018 in Kyiv provided useful insights and helped us improve further the analysis.

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The report was discussed at the OECD Eurasia Competitiveness Roundtable meeting in Paris, France, on 20 November 2018.

Executive Summary

Ukraine remains one of the least energy-efficient countries in Europe, with the highest energy intensity among other members of the Energy Community. Historically, it has been one of the largest producers of hydrocarbons in continental Europe and a transit partner of energy sources (mainly natural gas and oil) to neighbouring markets. However, since the Euromaidan protests and the beginning of the conflict in the Donbass in 2014, Ukraine's energy security and stability have been imperilled. Inefficient use of energy, combined with highly-subsidised energy prices and ongoing political challenges, has called for an urgent and steady reform within the sector.

In 2015, Ukraine demonstrated commitment to developing a framework for achieving energy efficiency through a market-based approach. The country adhered to several international agreements, including the EU-Ukraine Association Agreement, which required curbing its energy intensity and implementing market-oriented reforms within the sector. Among policy options available for achieving this goal, the OECD suggested developing energy service companies (ESCOs) to support Ukraine in becoming more energy efficient while creating market opportunities for private sector participation. In its 2015 peer review, the OECD laid out recommendations for the government in four policy areas necessary for promoting the development of the ESCO market (OECD, 2015). In assessing implementation progress, this note reviews the four policy areas:

1. supply – easing access to finance;
2. demand – introducing incentives for investments in energy efficient activities;
3. matching supply and demand – co-ordinating and improving capacity among market players; and
4. awareness – raising awareness and promoting the ESCO model.

The overall assessment of Ukraine's work on a sustainable policy framework for ESCOs over the past three years is relatively positive. Although progress remains uneven across recommended actions, all four policy areas reveal a certain level of implementation as different measures have been put in place to move forward.

Ukraine has made progress in developing **access to finance** for ESCOs, which was identified as one of the main obstacles in 2015. Ukraine introduced several public financial support programmes aiming to improve the implementation of energy efficiency measures, including the “Warm Loans” and the IQ Energy programmes, and the Energy Efficiency Fund (EEF). Also, Ukraine has introduced a model energy performance contract (EPC) template, as recommended in 2015. However, there have been insufficient national training and capacity-building programmes for assessing energy-saving projects that specifically target bank staff, though individual banks have started developing in-house capacity. In 2015, such trainings and programmes were identified as critical for improving access to finance for ESCOs.

With respect to **stimulating demand**, Ukraine should be praised for its efforts to raise awareness of the potential of ESCO services to promote energy efficiency. In 2015, the

OECD recommended creating incentives to boost demand for ESCO services in the business sector, including targeted subsidies, vouchers and tax incentives linked to energy audits. Since then, Ukraine has introduced regulations for achieving energy efficiency, such as the promotion of energy performance certificates for new and existing buildings. Unfortunately, little has been done regarding targeted support and incentives for smaller businesses to engage with ESCOs. Indeed, the public sector remains the main driver of demand for ESCOs, with many energy efficiency projects falling under the responsibility of subnational authorities which lack capacity to embark on complex projects.

In order to facilitate the **matching of supply and demand** within the ESCO market, further efficient co-ordination is needed, as well as upskilling of ESCOs. To address this, the OECD recommended that Ukraine consult with ESCOs and other energy-related players and supports the development of market facilitators. Since then, the government is working closely with ESCOs to assess the business needs and close gaps through the Ukrainian Association of ESCOs (UAESCOs). The monitoring also revealed that efforts to standardise EPC processes are underway and have been boosted through the launch in 2016 of *ProZorro*, the online public procurement platform. Ukraine also made significant progress in replacing municipal housing with residential associations to manage multi-occupancy dwellings, the latter were identified as key reference points for ESCOs to use for fostering consensus among residents and speeding up procedures. In addition, Ukraine launched several programmes that offer better conditions to homeowner associations than to individual homeowners for funding energy efficiency projects.

Ukraine has also made significant progress in **raising awareness** of ESCOs. One of the main challenges identified was ensuring that clients understood not only the potential gains from energy-saving activities, but also how ESCO models worked. This required quality control of ESCOs in order to build confidence among clients. The monitoring team noted that Ukraine has made some progress on qualification standards in the framework of the EEF, though these have not been specific to ESCOs. Potential consumers of energy services in Ukraine cannot yet require ESCOs to provide certification documentation or references of their experience with energy performance contracting. Ukraine has also launched several awareness-raising and capacity-building campaigns to promote the use of energy services, particularly among regional and local authorities. Most notably, SAEE, in co-operation with local authorities, has created a national database of previous and potential ESCO projects related to thermo-modernisation of public institutions. In 2016, work on a single ESCO online database (esco.org.ua) was initiated.

Overall, Ukraine should be praised for the efforts put into developing the ESCO market to support both energy efficiency transition and to increase economic activity. However, more work needs to be done in order to boost the untapped potential of a privately-led ESCO market. This note makes recommendations on the way forward for each of the four policy areas, and illustrates some of the approaches with examples from OECD countries. The summary of recommendations is presented in Table 1.

Going forward, Ukraine can do more to improve its long-term financing framework in order to ease **access to finance** for the development of ESCOs. Amending the budget code and engaging the State Fund for Regional Development to increase energy-efficiency funding could strengthen the position of ESCOs among public entities. As ESCOs have limited fixed assets, allowing them to use future cash flow as collateral, along with developing additional guarantees, could improve their financing opportunities. In addition, while introducing EPCs was a good starting point for launching small-scale projects, further elaboration of the templates is necessary for creating different types of payment and saving

schemes, and for supporting larger projects. Further investment in training and capacity-building programmes for financial institutions would also help financial institutions develop better products for the ESCO market.

Table 1. Improving the policy framework for ESCOs – the way forward

	Recommended actions beyond 2018
Supply – Access to finance	<ul style="list-style-type: none"> • Define specific public financing support programmes for ESCOs • Stimulate diversification of commercial bank financing for ESCOs • Include a budget line for energy efficiency projects into the budget code • Expand energy efficiency funding through the State Fund for Regional Development • Develop guarantees & support for collateral • Diversify the EPC model templates • Strengthen commercial banks' understanding of ESCOs
Demand – Incentives for investment	<ul style="list-style-type: none"> • Pursue energy pricing and market reforms • Improve legal basis for ESCO projects with private stakeholders • Create incentives to alleviate up-front costs for businesses • Support energy audits linked to execution of energy efficiency measures • Use building certification to speed up energy efficiency refurbishments
Supply/ demand matching – Co-ordination	<ul style="list-style-type: none"> • Accelerate skill-building through knowledge transfer from abroad • Consider introducing a standardised M&V protocol • Empower national market facilitators that offer services across Ukraine • Monitor and adjust EPC tendering through ProZorro • Further stimulate residential building association use of ESCOs
Awareness – Promotion	<ul style="list-style-type: none"> • Uniform qualification standards requirements for ESCOs • Include information on how to work with ESCOs in technical trainings • Spell out the energy and financial savings of concluded projects • Set up and launch the single ESCO database

To further **stimulate demand**, the government of Ukraine needs to incentivise businesses and households to engage with ESCO services. Pursuing energy pricing reform and increasing tariffs to cost-recovery levels would generate additional investments and ensure the availability of capital for infrastructural upgrades. Most importantly, pricing reform would help avoid perverse pricing signals regarding energy use. Further recommendations for boosting demand among private stakeholders include improving legal basis for ESCO projects and creating financial incentives to alleviate up-front costs. Existing programmes to promote energy efficiency refurbishments could be strengthened by the addition of such features as home energy audits and credits for equipment exchange and upgrades. Enforcing energy audits and building certification could help promote ESCO use among homeowners and residents.

More can be done to **match supply and demand** for efficient co-ordination among ESCO market players. Continuing to encourage market facilitators (such as UAESCOs) to mediate between suppliers and consumers, while upskilling ESCOs and advising residential building associations on how to invest in energy efficiency, could contribute to further advancing the ESCO market in Ukraine. Knowledge transfer from abroad could accelerate upskilling in the sector. This involves attracting foreign ESCOs to the domestic market and encouraging their partnership with local firms – but this will require to continue improving the business climate overall. Moreover, adopting a widely accepted measurement and verification (M&V) protocol would ease the comparison of different ESCOs and the assessment of services they offer. Additional considerations include the use of *ProZorro*

platform to monitor and adjust EPC tendering, to standardise contracts and to boost competition among ESCOs in developing best technical solutions.

Ukraine should continue to work more on **raising awareness** regarding the benefits of ESCOs. Familiarising key players with the model, including banks and clients, is necessary for confidence-building and for long-term market growth. In achieving this aim, Ukraine could benefit from establishing uniform qualification standards requirements for ESCOs and developing capacity-building programmes for technical trainings. A single portal documenting ESCO projects with facts and figures on energy and financial savings of concluded projects would not only allow easy access to information for all market players, but also develop into a matching tool for investors and building owners seeking to engage with ESCO services.

Finally, it is important to stress that subsidised energy prices remain perhaps the most important factor affecting the potential for energy efficiency reforms. Ukraine will have to continue moving towards cost-reflective prices and revise energy-related social assistance programmes so as to increase incentives for energy conservation. Further improvements in the overall business climate and reductions in legal, institutional and policy uncertainty are also critical, since the complexity and the long duration of ESCO projects make them especially sensitive to such risks. Thus, in addition to ESCO-specific recommendations provided in this note, Ukraine needs to continue combating corruption, strengthening the rule of law and reforming its public governance in line with international standards. Shielding the energy sector from political meddling is necessary for creating a business climate conducive to the development of local ESCOs and for attracting both domestic and foreign investments for promoting energy efficiency.

Acronyms and abbreviations

ACAB	Association of co-owners of apartment buildings
ANESE	Spanish Association of Energy Service Companies
bcm	Billion cubic metres
EBRD	European Bank for Reconstruction and Development
ELENA	European Local Energy Assistance
EE	Energy efficiency
EED	Energy Efficiency Directive (2012/27/EC)
EEF	Energy Efficiency Fund
EPC	Energy performance contract
ESCO	Energy service company
ESU	Energy Strategy of Ukraine
EUR	Euro (currency)
EU	European Union
E5P	Eastern Europe Energy Efficiency and Environment Partnership
GBP	Pound sterling (currency)
GDP	Gross domestic product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Development Agency)
GLA	Greater London Administration
GNI	Gross national income
HVAC	Heating, ventilation and air conditioning
ICP	Investor Confidence Project
IFI	International financial institution
IMF	International Monetary Fund
IPMVP	International Performance Measurement and Verification Protocol
LEEF	London Energy Efficiency Fund
LFI	Local financial institution (focusing on private, not state-owned, financial players)
LBNL	Lawrence Berkeley National Laboratory
LIEN	Large industry energy network
MEPS	Minimum energy performance standards
Mtoe	Million tonnes of oil equivalent
MWh	Megawatt hour
M&V	Measurement and verification
NAESCO	National Association of Energy Service Companies
NBU	National Bank of Ukraine
NEEAP	National Energy Efficiency Action Plan
NEFCO	Nordic Environment Finance Corporation

OECD	Organisation of Economic Co-operation and Development
O&M	Operations and maintenance
PIU	Project Implementation Unit
PPP	Purchasing power parity
PSEEF	Public Sector Energy Efficiency Framework
SAEE	State Agency on Energy Efficiency and Energy Saving of Ukraine
SFRD	State Fund for Regional Development
Sida	Swedish International Development Co-operation
SME	Small and Medium-sized Enterprise
TJ	Terajoule
TOE	Tonnes of oil equivalent
TPES	Total primary energy supply
TWh	Terawatt hour
UAH	Ukrainian Hryvnia (currency)
UNDP	United Nations Development Programme
UREEFF	Ukraine Residential Energy Efficiency Financing Facility
USD	United States Dollars (currency)

Key indicators: Ukraine

Country profile	
Population, 2016	42 760 500
Surface area, 2016	603 550 km ²
Life expectancy at birth, 2016	71 years
GDP per capita, current prices, 2016	USD 2097
Real GDP, current prices, 2016	USD 93.27 billion
Real GDP growth (annual percent change), 2016	2.3 %
GNI, Atlas method, current prices, 2016	USD 98.63 billion
GNI per capita, Atlas method, current prices, 2016	USD 2 310
Inflation, GDP deflator (annual percent change), 2016	17.1 %
Exports of goods and services, share of GDP, 2016	49 %
Imports of goods and services, share of GDP, 2016	56 %
Current account balance, share of GDP, 2016	- 4.7 %
Consumer prices (annual average percent change), 2016	13.9 %
Unemployment, 2016	9.3 %
World Bank Doing Business rank, 2018	76/ 190
Energy statistics	
Energy production, 2015	61.61 Mtoe
Net imports, 2015	30.13 Mtoe
Total primary energy supply (TPES), 2015	90.09 Mtoe
Energy intensity (TPES/ real GDP PPP), 2016	0.28 Toe/ thousand 2005 USD PPP
Total final consumption of energy, 2016	50.83 Mtoe
Gas total production, 2017	20.5 bcm
Gas consumption, 2017	31.9 bcm
Heat total production, 2015	378 210 TJ
Heat final consumption, 2015	315 211 TJ
Electricity total production, 2015	163.68 TWh
Electricity consumption, 2015	144.89 TWh
Electricity consumption per capita, 2015	3.21 MWh
ESCO statistics	
Number of ESCOs, 2018	21
Number / volume of ESCO contracts signed, 2016	20 contracts / UAH 18 000 000 / EUR 630 000
Number / volume of ESCO contracts signed, 2017	3 contracts / UAH 2 800 000 / EUR 85 800*
Number / volume of ESCO contracts signed, 2018 (Jan-Aug)	154 contracts / UAH 159 300 000 / EUR 5 027 000*

*Calculated on the basis of the NBU monthly average exchange rate as at August 2018

Sources: Information provided by SAEE, August 2018. IMF World Economic Outlook, accessed 30 Jan 2018

<https://www.imf.org/en/Publications/WEO/Issues/2017/09/19/world-economic-outlook-october-2017>; International Energy Agency (2015), Ukraine: Indicators for 2015: <http://www.iea.org/statistics/statisticssearch/report/?year=2015&country=UKRAINE&product=Indicators>; Naftogaz Europe (2018), 2017 results, <http://www.naftogaz-europe.com/article/en/2017resultsukraineincreasedgasproductionby450bcm>, accessed 13 Feb 2018; Naftogaz Europe (2018), Ukraine's gas consumption decreased by 1.3 bcm in 2017 (-4%), <http://www.naftogaz-europe.com/article/en/ukrainesgasconsumptiondecreasedby13bcm2017>, accessed 13 Feb 2018; World Bank (2018), Doing Business 2018, <http://www.doingbusiness.org/-/media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB2018-Full-Report.pdf>, accessed 30 Jan 2018; World Bank (2018), Ukraine Country Profile, (database): http://databank.worldbank.org/data/Views/Reports/ReportWidgetCustom.aspx?Report_Name=CountryProfile&Id=b450fd57&tbar=y&dd=y&inf=n&zm=n&country=UKR

Introduction

When the OECD peer-reviewed Ukraine in 2015, the country faced a number of challenges that highlighted the need for greater energy efficiency. These included, among other things, an ageing housing and public building stock, outdated industrial processes and gas supply disruption since the beginning of the conflict in the east, given that many energy-intensive industrial facilities are located in the two eastern regions controlled by Russian-backed militants. In addition, following years of low energy tariffs and lack of metering, energy use in Ukraine has been highly inefficient and these two factors have prevented a faster introduction of energy efficiency measures. The severe economic contraction in the country and the difficult external environment made clear the economic cost. External vulnerability associated with inefficient use of energy, to say nothing of its environmental consequences, concerns with economic growth, environmental quality and energy security all point to the need for much greater energy efficiency.

Much has been done in recent years to improve the situation. The energy intensity of GDP fell by more than 22% from 2012 to 2016 (Government Portal, 2017). This reflected both improved energy efficiency and structural changes that reduced the relative weight of more energy-intensive sectors in the economy, particularly heavy manufacturing (OECD, 2018). Nevertheless, Ukraine remains one of the most energy-intensive economies in the world,¹ with an energy intensity of GDP around three times more than the EU average (EBRD, 2018).

An ageing capital stock continues to weigh heavily on energy-intensive industries in Ukraine. In addition to inefficiencies within the industry, resulting from outdated production capabilities and power grid, and highly subsidised gas prices, the old and inefficient housing stock also serves as one of the main explanations for Ukraine's high energy intensity. The residential sector is responsible for over a third of the country's overall energy consumption and has contributed greatly to the inefficient use of gas (EBRD, 2016). For example, out of 18.6 bcm of gas supply used for heating, less than half (7.2 bcm) were efficiently used in 2017 (Ministry of Regional Development, 2017).

Subsidised energy prices continue to influence the potential for energy efficiency reforms. In 2014 the Ukrainian government initiated an ambitious tariff reform aimed at complete phasing out energy price subsidies. Utility tariffs were increased substantially in 2014, 2015 and 2016. In an agreement with the IMF, the government committed to raising gas prices to import-parity levels. The government, however, has reinforced targeted support schemes, that have the same effect as subsidies, to help households (and religious institutions) pay utility bills. Although this support provides an essential lifeline for vulnerable groups, it constitutes a disincentive to energy saving. About one-third of households receive partial compensation for the payment of utility services within

¹ On the World Bank's World Development Indicators, Ukraine ranked 12th in terms of energy intensity in 2015, among more than 230 jurisdictions for which data were available. <http://databank.worldbank.org/data/source/world-development-indicators#> accessed 28 June 2018.

normative consumption volumes. This could impede the long-awaited modernisation of the housing sector (OECD, 2018).

In order to effectively increase energy efficiency, it will be important to revise energy-related social assistance programmes so as to increase incentives to conserve energy, for example by monetising the non-cash credits that accrue on households' utility accounts, so that the household does not lose the benefit if it reduces energy consumption. And, of course, further investment in meters, regulators, insulation and other modernisation measures – where the government, with donor support, is already active – should reduce the need for subsidies.

Furthermore, in 2016, the Ukrainian government spent roughly seventy times more on subsidies for public utilities than on energy efficiency. Over the next fifteen years, Ukraine is projected to undertake modernization programmes for buildings owned by national or local governments that will cost approximately USD 65 billion (but only a fraction of that amount was budgeted in 2017). This means that, in the absence of new investment funds, the government will continue to spend more on wasted energy than on efficiency improvements (Antonenko A., 2018).

Achieving energy savings is a priority for Ukraine

The need for energy efficiency improvements across the Ukrainian economy is enormous, and the government has identified energy efficiency improvement as a priority for energy sector reform. In 2015, Ukraine developed its National Energy Efficiency Action Plan to gradually align its energy efficiency policies with European practices and requirements, such as the EU Directive 2006/32/EC on end-use efficiency and energy services (Box 1).

Box 1. The National Energy Efficiency Action Plan by 2020

Resolution No. 1228-p “On the National Energy Efficiency Action Plan to 2020” (NEEAP) was approved by the Cabinet of Ministers on 25 November 2015. The Plan sets initial targets to be reached by 2020: 9% of energy savings compared to the average final energy consumption level in 2005-2009, i.e., 6.5 Mtoe. An interim target of 5% of energy savings by 2017 was also set. The Plan has specific targets for four main final energy consumption sectors: the residential sector (buildings and consumption in households, e.g. appliances), services (which includes public buildings), industry, and transport. To reach these targets, special measures are to be implemented in these sectors, including:

- renovating public buildings by involving ESCOs and using an Energy Performance Contract (EPC) approach;
- introducing energy efficiency certification, energy audit and energy management systems for buildings;
- promoting investments in the thermal modernisation of residential buildings and construction of zero-energy buildings;
- adopting incentive tariffs (regulatory asset base) targeting business; and
- conducting energy efficiency awareness campaigns.

Sources: (Energy Reforms, 2015); (SAEE, s.d.); (SAEE, 2017); (Verkhovna Rada, 2015)

To help address the energy efficiency challenges, the government’s Energy Strategy of Ukraine (ESU)² outlines strategic goals for the development of energy complex in Ukraine until 2035. The ESU was developed in the context of the Sustainable Development Strategy “Ukraine–2020”³ which, in particular, envisages the reform of the energy sector and implementation of the energy efficiency programme. Among its core objectives, the ESU seeks to build a “conscious and energy-efficient society”. The ESU is expected to be implemented in three main phases (Cabinet of Ministers of Ukraine, 2017):

- Phase 1. Energy sector reform (till 2020). The first phase focuses on implementation of reforms and development of a competitive environment attractive for investment.
- Phase 2. Optimization and innovative development of energy infrastructure (till 2025). The second phase of the energy strategy implementation focuses on the activities in the new market conditions and practical integration of the Unified Energy System of Ukraine into the European energy system that will considerably influence the choice of energy facilities for reconstruction or new construction, as well as improvement of energy efficiency.
- Phase 3. Ensuring sustainable development (till 2035). The third ESU phase aims at innovative development of energy sector and construction of new generation capacities. It involves investment into new generation capacities to replace the capacities that shall be taken out of operation. The choice of the generation type

² Energy Strategy for Ukraine “Safety, Energy Efficiency, Competitiveness” approved by Resolution No. 605-p of the Cabinet of Ministers of Ukraine of 18 August 2017

³ Sustainable Development Strategy “Ukraine–2020” approved by Decree N°. 5 of the President of Ukraine of 12 January 2015

will depend on the fuel price forecasts and intensity of development of each generation type promoting increased competition between them, including integration of smart technology for balancing consumption peaks.

The ESU provides for a “transition of the Ukrainian energy sector to the market principles of functioning and competition that will stimulate the increase of economic performance of energy companies and the efficiency of energy use by economic entities” (SAEE, 2018).

As part of these strategic plans, the government has taken steps to enhance energy efficiency in a number of areas. In addition to the programmes mentioned above that target the household sector, the authorities have introduced incentives to reduce thermal energy losses in heat distribution network. The Tax Code of Ukraine (issue of 13 August 2015) also provides a number of incentives (e.g. corporate income tax benefits, VAT and excise tax exemptions) to support capital investments in the development and modernisation of infrastructure, and in energy-saving projects, as well as to encourage the development of renewables. Moreover, the State Energy Efficiency Programme, reinforced in 2015, provides soft loans to households willing to implement specific energy efficiency measures (OECD, 2018). An emission tax is also being considered to stimulate industrial enterprises to invest in energy saving and the use of renewable sources. In addition, regulations on energy labelling of household appliances have been introduced to stimulate energy efficient measures (SAEE, 2018). Development of the ESCO market must be seen as a part of this larger picture: substantial, rapid progress on energy efficiency will require a range of policy reforms, as a comprehensive approach will ensure that instruments and incentives reinforce each other rather than working at cross-purposes.

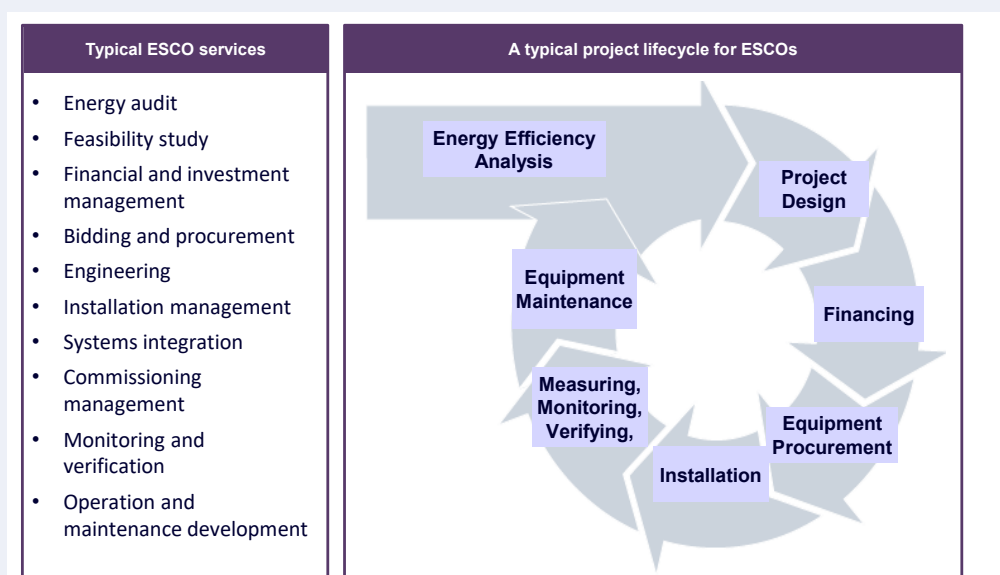
ESCOs can enhance investment in energy savings and stimulate private sector development

The government’s efforts to develop the ESCO market are another way of supporting energy savings activities. The ESCOs are commercial energy service companies that offer a range of services to develop and implement energy efficiency investments for their clients (Box 2). ESCOs offer a broad range of energy-saving solutions through financing mechanisms based on future savings, of which energy auditing and equipment supply are only components of services that ESCOs can provide. ESCOs can thus allow for the allocation of private sector resources towards long-term investments in energy efficiency, which is particularly relevant when public resources are limited, as in Ukraine.

Box 2. What is an ESCO?

Energy service companies (ESCOs) offer a wide range of services to develop and implement energy efficiency investments for their clients.

Figure 1. ESCO services at each phase of an energy efficiency project



ESCOs can finance, or assist in arranging financing, for implementing energy efficiency improvement measures or operating an energy system by providing a savings guarantee. ESCOs are able to manage and offer a range of services, which can span across all the stages of an energy efficiency project, from conducting the energy efficiency analysis and project design to monitoring and maintaining the equipment. Therefore ESCOs accept some degree of risk when undertaking to improve energy efficiency in a user's facility, especially as their payment for the services delivered is based (either in whole or at least in part) on the achievement of those energy efficiency improvements. ESCOs typically use performance-based contracting models in which ESCOs guarantee certain energy savings or services, thus assuming much of the performance risk from energy users.

In contrast, a company remains below the threshold considered for an ESCO if it only sells equipment or individual services and does not bring know-how and expertise. A service provider that does not arrange finance, or requires the beneficiary to bear the risks of project implementation, or takes no commitments in energy management, also cannot be qualified as an ESCO. As energy services always have to be adapted to individual objects, ESCOs cannot sell their services as a mass market solution for residential buildings.

Source: EU Commission, Joint Research Centre (n.d.), "Energy service companies", webpage, <http://iet.jrc.ec.europa.eu/energyefficiency/esco>, accessed June 2015; Econoler (2011), "Energy Efficiency Financing, experience from Canada and Turkey"; Frost & Sullivan (2013), Dynamics of the Industrial Energy Efficiency Market: A Strategic Perspective. (OECD, 2015). European Commission/IFC/Covenant of Mayors, "ESCO in Ukraine – Can it Pass the Acid Test?" (2018)

ESCOs in OECD countries have demonstrated that they can help scale up energy efficiency through investments and implementation of ESCO-based projects, as well as stimulating economic activities contributing to development and diversification of the private sector. For example, ANESE estimated that in 2015 ESCOs in Spain had achieved considerable savings for their clients in terms of energy (35.9%), CO₂ emissions (42.3%) and economy (25.7%) (ANESE, 2016). At the same time, the development of the ESCO market has fostered the growth of SMEs which account for 85% of all ESCOs active in Spain (estimated at 118 ESCOs in 2018, ANESE). This is particularly relevant given that SME development can positively contribute to enhancing economic competitiveness and restoring sustainable growth in Ukraine (OECD/European Union/EBRD/ETF, 2016).

Ukraine's ESCO market is still underdeveloped but has great potential










The first commercial ESCO (UkrESCO) was established in 1998 with a sovereign loan from the EBRD and a grant from the European Union's technical assistance programme (TACIS). As of 2007, only 2 public and 1 private ESCOs were active on the market (Marino, 2010). Today, Ukraine's ESCO market has grown but remains very small: as of August 2018, 15 ESCOs were active in the country. According to the State Agency on Energy Efficiency and Energy Saving (SAEE) 20 ESCO contracts worth EUR 630 000 were concluded in 2016 (SAEE, 2018). In 2017, Ukraine launched a dedicated module for energy services procurement. The first tender notices were published in October 2017 and resulted in three contracts totalling EUR 85 800. In the first eight months of 2018 the number of contracts went up to 154, with a volume of slightly over EUR 5m. In addition, the government set aside approximately USD 30m towards energy-saving reforms in 2017, nearly half of which was earmarked for use in the Energy Efficiency Fund (Burtovoy & Tretiakov, 2018). State support, however, is not directly accessible by ESCOs and is made available to energy end-users only. Most of the state support is focused on improving the energy efficiency of public buildings. Yet the potential for Ukraine's total ESCO market has been estimated at between USD 4 billion and USD 8 billion, so public finance and donor support alone cannot meet the requirements for achieving long-term, sustainable energy efficiency reforms (Burtovoy & Tretiakov, 2018). Private sector and commercial financing are necessary to bridge these gaps.









OECD (2015) found that ESCOs could help improve energy efficiency while creating investment opportunities and laid out four sets of recommendations on how to promote the development of the ESCO market. This note reviews the progress made on the OECD's 2015 recommendations, monitoring four areas of actions important for ESCO market development:

5. supply – easing access to finance;
6. demand – introducing incentives for investments in energy efficient activities;
7. matching supply and demand – co-ordinating and improving capacity among market players; and
8. awareness – raising awareness and promoting the ESCO model.

The overall assessment of the progress made by Ukraine in establishing a sustainable policy framework for ESCOs over the past three years is relatively positive. Although progress is uneven in each of the four areas of actions, all four areas show a certain level of implementation and different measures have been put in place to move actions forward. Table 2 shows the summary of the monitoring assessment, which is further developed in the following chapters.

Table 2. Summary of the monitoring assessment

Policy area	Overall 2015 recommendation	Detailed 2015 recommendations	2018 monitoring assessment	
			Progress	Way forward
Supply – Access to finance	Ukraine should create enabling conditions to improve ESCOs' access to finance	1. Improve the framework for innovative and long-term financing, and introduce public financial support programmes		<ul style="list-style-type: none"> Define specific public financing support programmes for ESCOs Stimulate diversification of commercial bank financing for ESCOs Include a budget line for energy efficiency projects into the budget code Expand energy efficiency funding through the State Fund for Regional Development Develop guarantees & support for collateral Diversify the EPC model templates
		2. Introduce energy performance contracts models		
		3. Introduce training and capacity-building programmes to help LFIs understand and implement ESCO contracting		<ul style="list-style-type: none"> Strengthen commercial banks' understanding of ESCOs
Demand – Incentives for investment	Ukraine should launch incentive-based policies and strategies to boost ESCO investments by households and businesses	4. Create incentives to boost demand for ESCO services in the business sector		<ul style="list-style-type: none"> Pursue the reforms to energy pricing and markets Improve legal basis for ESCO projects with private stakeholders Create incentives to alleviate up-front costs for businesses
		5. Support households to engage with ESCO services		<ul style="list-style-type: none"> Support energy audits linked to execution of energy eff. measures Use building certification to speed up energy efficiency refurbishments
Supply/ demand matching – Co-ordination	Ukraine should foster greater co-ordination among market players and address technical and financial skill gaps in the ESCO market.	6. Build skills in the energy services market		<ul style="list-style-type: none"> Accelerate skill-building through knowledge transfer from abroad Consider introducing a standardised M&V protocol
		7. Support market facilitators		<ul style="list-style-type: none"> Empower national market facilitators that offer services across Ukraine
		8. Standardise ESCO contracts and provide step-by-step guidance for ESCO projects		<ul style="list-style-type: none"> Monitor and adjust EPC tendering through ProZorro
		9. Support the formation of residential building associations		<ul style="list-style-type: none"> Further stimulate residential building association use of ESCOs

Awareness – Promotion	Ukraine should raise awareness of ESCO services' benefits among potential clients and regulators, in order to build long-term trust among all parties	10. Encourage quality control of ESCOs		<ul style="list-style-type: none">Uniform qualification standards requirements for ESCOs		
		11. Develop awareness and capacity-building programmes		<ul style="list-style-type: none">Include information on how to work with ESCOs in technical trainingsSpell out the energy and financial savings of concluded projects		
		12. Create a national database with free and immediate access containing details of ESCO projects and experiences		<ul style="list-style-type: none">Set up and launch the single ESCO database		
		 Completed	 Close to completion	 Being implemented	 Initiated	 Not yet started

Realising that potential requires reforms that reach beyond the ESCO market

Ukraine has made progress, to a different extent, in all of the recommendations agreed in 2015. Particularly, it should be praised the important push for the formation of residential associations and the awareness and capacity-building activities implemented to raise visibility of the potential to transition to a more energy efficient Ukraine using ESCOs. Nonetheless, further progress with respect to each of these spheres of activity will depend to a great extent on changes (or the lack thereof) in the larger institutional and contracting environment, which continues to be characterised by high levels of macroeconomic and political uncertainty, a need for structural reforms in the energy sector, weak institutions and high levels of corruption. These factors affect a huge amount of investment activity in Ukraine, but they are particularly harmful for the development of ESCOs, owing to:

- the long payback periods typically associated with ESCO projects;
- the complexities involved in designing and administering ESCO contracts, which involve more complex principal-agent relations and depend critically on the quality of monitoring information;
- the need to build up trust among market players; and
- the comparatively cheap energy prices still prevailing in Ukraine.

The last of these is critical, and, as noted above, constitutes a major obstacle to increasing energy efficiency, and in turn for ESCO development. Household gas prices in mid-2018 were well below import-parity levels, owing to generous subsidies. But even for consumers paying market prices, energy remains fairly cheap by international standards. Nor is the price of carbon in any way factored into Ukraine's energy tariffs.

The transition away from cheap energy will have to be gradual, given Ukraine's reliance on some energy-intensive sectors, but in the long run, getting prices right – at least to reflect relative scarcities and the cost of carbon emissions – will be critical to establishing a solid case for ESCO activities and for other energy efficiency initiatives. Getting prices right would reduce the cost of, and increase the returns on, more or less any policy intervention aimed at supporting energy efficiency. It would also make it far easier to finance needed investment in the energy sector itself. This does not mean that Ukraine should stand still until prices reach the market level, nor will it do so. However, it does mean that an incremental approach, allowing space to pilot certain arrangements and then modify or upscale them, as needed, would seem to be warranted. It also means that policy-makers working on the framework for ESCOs and related issues will need to remain sensitive to the changes in the broader institutional environment.

Moreover, Ukraine should seek to guarantee a sound investment climate for both domestic and foreign investors (OECD, 2016) including in the ESCO market. The government's success in improving the overall business climate and reducing legal, institutional and policy uncertainty will be essential to ensure that the ESCO market takes off, not only by increasing the number of ESCOs in Ukraine but also by attracting ESCOs from OECD countries to invest in Ukraine. As already recommended by the OECD, the government should focus on improving the legal and business environment for international private capital to step in the development of renewable energy sources and ESCOs that could bring technical expertise, know-how and capital to Ukraine (OECD, 2018). In this context, sectoral policies are a necessary complement to – rather than a substitute for – sound framework conditions for investment.

Furthermore, corruption continues to present one of the key impediments for sustainable development of the energy sector. In 2017, the National Anti-Corruption Bureau of Ukraine reported that corruption in the energy sector was the largest within the economy, reaching UAH 11.18 billion in total losses (NABU, 2017). At the same time good governance is number one pre-requisite for eliminating wide-spread corruption and closing loopholes which allow for it. Hence, in order to achieve energy efficiency targets, Ukraine will have to continue combating corruption, strengthening the rule of law and reforming its public governance in line with international standards. This should shield the energy sector from political meddling and contribute to improving the business climate to further attract investments into the energy efficiency sector in general, and into ESCOs in particular.

Chapter 1. Access to finance

Context

ESCOs offer services not only for implementing energy-saving measures but also for financing them. ESCOs can facilitate access to finance from lenders and enable energy users to pay for services and initial costs through future savings, while also assuming financial risks. ESCOs may guarantee all, some or none of the risk, depending on the financier of the project. This can be the ESCO itself, a credit institution or the client (which can be industrial, households, or public administrations among others). The ESCO guarantees a certain amount of annual energy savings to be achieved over the duration of the contract. As such, the contract must clearly define what happens if these guaranteed savings are not achieved, as well as how the ESCO deals with any negative difference between guaranteed savings and actual savings. When the guaranteed savings are exceeded, there has to be a clear description of how the excess savings (above the guaranteed level) are distributed between the client and the ESCO.

Access to finance is necessary for the development of an ESCO market. The conditions for ESCO project loans often require medium to long-term lending periods in order to meet pay-back terms, which accrue only when future savings are realised. Long-term projects can often take more than fifteen years to meet payback periods. Nascent or underdeveloped markets, which have limited experience with ESCO business models and limited financing options, can constrain implementation of energy efficiency measures.

Overview of 2015 recommendations

In 2015, access to finance was identified as the main obstacle for developing the ESCO market. An unstable environment for the banking sector and limited familiarity with ESCO financing schemes among local financial institutions (LFIs) added to the problem. At the time, ESCOs could normally borrow only from banks and for loan periods of up to one year. Also, the general financial instability of Ukrainian banks at the time meant that ESCOs faced interest rates of 20–25%, and in some cases, more than 30%, compared with interest rates as low as 5% in other countries. Local banks generally lacked familiarity with ESCO business models and Energy Performance Contract (EPC) lending conditions. As a result, ESCOs were mostly dependent on projects funded by international financial institutions (IFIs) or other foreign donors.

Against this backdrop, the OECD recommended three actions to create enabling conditions to improve access to finance for ESCOs:

Action 1: Improve the framework for innovative and long-term financing, and introduce public financial support programmes. This included government support and development of financing means for long-term options, building trust and allowing for financial products tailored to needs of ESCOs.

Action 2: Introduce energy performance contracts models. Model contracts such as guaranteed savings or shared savings contracts were recommended for development.

Model contract templates could be useful for implementing projects with payment schemes based on future savings and could help overcome unfamiliarity with ESCO project implementation. Regularisation of EPC contracts could also help establish trust that such payments would be effective.

Action 3: Introduce training and capacity-building programmes to help LFIIs understand and implement ESCO contracting. Improving the capacity of LFIIs would allow banks to better calculate risks and diversity lending portfolios suited to ESCOs.

Findings of the 2018 monitoring

Action 1: Improve the framework for innovative and long-term financing, and introduce public financial support programmes

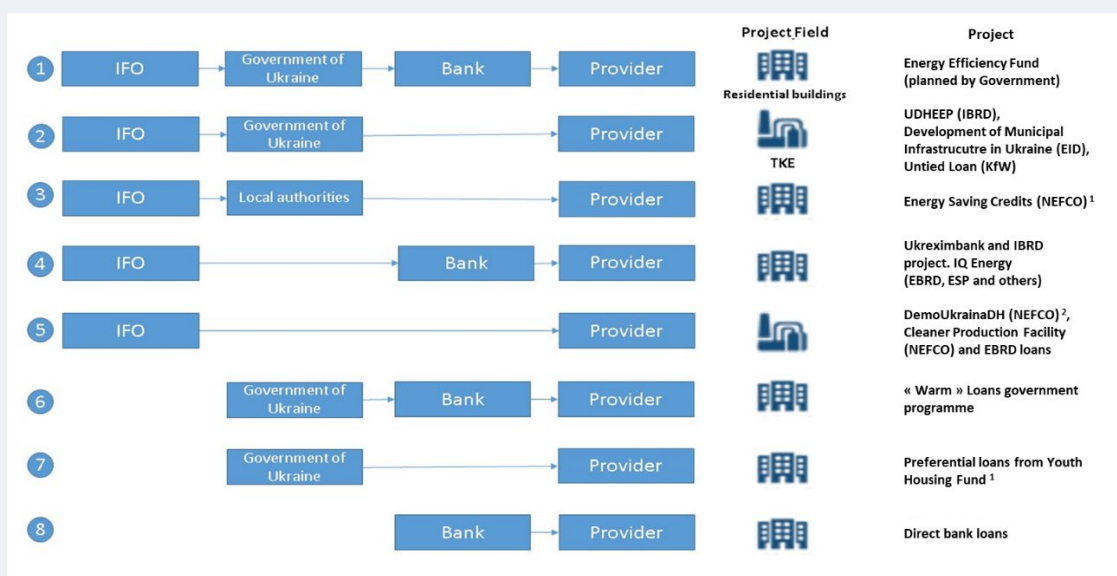
A survey conducted by UNDP among 14 ESCOs in Ukraine in 2017 found that financial barriers remain the main obstacles to development of the ESCO market. These include high interest rates, lack of long-term loans from commercial banks, and the inability of banks to acknowledge the lack of liquid assets for ESCOs, thus preventing them from obtaining commercial loans (UNDP, 2017).

In 2018, the OECD identified several challenges associated to finance for potential customers for energy efficiency in Ukraine. Firstly, the length of finance on offer (maturities) is often very short and does not match the potential payback periods for capital investment (either for renewables or for energy efficiency). Secondly, the cost of finance remains very high (up to 30% in local currency, with foreign exchange loans exposed to currency risk). Finally, the collateral requirements for borrowers are very high (up to 200%). Often, finance is simply not available, due to the high-perceived credit risk, reflecting high and rising levels of Non-Performing Loans (NPLs) among loan portfolios and the need for banks to improve their balance sheets and capital adequacy ratios. Commercial banks are all but excluded from lending to public bodies and municipalities due to the risk of credit default (OECD, 2018). Furthermore, commercial banks restrict loan amounts to low ceilings that make it particularly difficult for ESCOs to implement large-scale, long-term or multiple projects at once. While Ukraine has made some progress in extending loan terms up to ten years in some cases, most are still limited to three- to five-year periods. This restricts the types of energy-saving projects that can be implemented to short-term improvements.

Ukraine has introduced many public financial support programmes that aim to improve implementation of energy efficiency measures. Under the “Warm Loans” programme, homeowners can receive partial reimbursements from the state for bank loans taken out to implement specific energy-saving measures. Since 2014, more than 480 000 households invested more than UAH 6.6 billion (approximately EUR 210 million⁴) under this programme (SAEE, 2018). A similar instrument on a smaller scale is the IQ Energy programme, which provides financial support for households that purchase energy efficient equipment. The IQ Energy programme was initiated by the EBRD and is supported by the EU, E5P, Sweden and Austria. Other financing programmes are also available, such as those run by the Nordic Environment Finance Corporation (NEFCO) for energy efficiency improvement in public buildings, the State Fund for Supporting Youth Housing Construction, and local authorities (Box 3).

⁴ At the NBU exchange rate as of August 2018

Box 3. Financing schemes of energy efficiency projects in Ukraine



Source: Adapted from (UNDP, 2017).

Notes:

1. There are now about 100 ESC projects in Ukraine. Loans are only provided to municipalities. For more information see: https://www.nefco.org/sites/nefco.org/files/pdf-files/nefco_esc2013_eng_screen_final.pdf
2. DemoUkrainaDH is part of the Cleaner Production Facility and finance only demonstration projects implemented by municipal district heating companies with the objective to demonstrate modern and energy efficient district heating technology. The financing is a mix of NEFCO loans, grant from Sweden and at least 15% resources from the district heating. See: https://www.nefco.org/sites/nefco.org/files/pdf-files/nefco_cleaner2015eng_lores.pdf

These public financial support programmes, while offering resources to encourage implementation of energy efficiency measures, do not directly provide support for ESCOs. Such lending programmes encourage energy users to implement energy efficiency measures, but are not available to ESCOs as borrowing entities and do not encourage energy users to work with ESCOs. The loan schemes available do not offer non-conventional financing options, such as forfeiting or credit guarantee schemes for long-term financing options.

The Energy Efficiency Fund (EEF) is a newly created institution, over which controlling function is provided by the Cabinet of Ministers of Ukraine and the donors (EU and Germany). The EEF is scheduled to start operations in Ukraine in early 2019 and will offer an opportunity to step up support for the implementation of energy efficiency measures in Ukraine – focusing at first on multi-apartment residential buildings. The EEF will operate a volume of more than EUR 140 million and will provide grants (starting with 50% on average) directly to home-owners' associations. Given the nature of ESCO models (share of profit from energy savings and risk), it will be very difficult for ESCOs to compete with a scheme providing such grants. As a consequence, market opportunities for ESCOs as investors and energy performance contracting in the residential sector in Ukraine in the coming few years may become limited. However, the market for certain services including energy auditing, technical design and installation of energy efficiency materials and equipment is expected to grow substantially.

In many OECD countries, energy efficiency funds can be used to provide more diverse financing options. For example, in the United Kingdom, the London Energy Efficiency Fund (LEEF), launched in 2011, finance projects related to energy efficiency retrofit to existing buildings, communal and district heating & cooling, and small-scale renewable energy. LEEF finance significantly leveraged both private and public sector financial support for the scheme. LEEF predominantly provides senior debt, and will consider mezzanine and equity opportunities. Borrowers can be public sector, private sector (landlords or ESCOs) or joint ventures. In Ukraine, given the limited scope of the EFF in its inception phase, other public funds, such as the State Fund for Regional Development (SFRD), should be explored to finance or leverage finance for ESCO projects.

SAEE is currently examining Green Bonds as a possible model to attract investments in energy efficiency and renewable energies. This could help to reduce financial gaps and mobilise investment resources by increasing capacities of local authorities to engage on energy efficiency and renewable energy projects, potentially increasing the space also for ESCO projects. As current legislation restricts the implementation of this financial instrument, amendments have to be passed to introduce the Green Bond model. In OECD countries, governments are supporting the development and harmonisation of guidelines and definitions for green bonds. For example, France has established a green label for investment funds that is aligned with the Green Bond Principles, and at the EU level, supporting green bond finance through convergence of green bond standards based on market-led initiatives is on the EU's policy agenda under the Capital Markets Union. Others are also active in setting the enabling environment for aggregation and green securitisation, the transferral of green assets into securities. In Mexico, a demonstration green securitisation programme for energy efficiency is currently underway, supported by the Inter-American Development Bank (OECD, 2017).

Recent legislation in Ukraine has helped advance the framework that can help ESCOs to access public funds. The legislation adopted in 2015, with amendments in 2017, allows for public bodies to procure energy services with private sector resources (ESCOs) in the case of public buildings (Box 4). These amendments also establish rules for energy service procurement in public buildings, using the ProZorro procurement platform. By enabling public procurement of energy services from ESCOs, the government can act as a leader in implementing and financing ESCO projects, helping to build a track record of ESCO projects.

Box 4. A new ESCO framework for large-scale thermo-modernisation

Law No. 1980-VIII “On Amendments to the Law of Ukraine ‘On the Introduction of New Investment Opportunities and on Safeguarding the Rights and the Legitimate Interests of Businesses in Conducting Large-Scale Energy Modernisation’” further elaborates the legislative framework related to the activities of ESCOs and establishes specific rules and procedure for energy service procurement. The Law provides for the extension of energy service contracts for the thermo-modernisation of public buildings, allowing for the use of private investments to implement energy efficiency measures in schools, hospitals and other public facilities. Key provisions of the legislation also include:

- the possibility to procure energy services for more than one building at a time;
- the possibility to engage in energy service contracts for terms of up to 15 years;
- the elimination of the amount limit of annual payments to an ESCO provider;
- an extended term for negotiating essential conditions of an energy service contract;
- a requirement for tender bid announcements to also be published in English; and
- changes in procedural matters of energy service procurement.

The Law aims to further attract IFIs and private sector investments to ESCO projects.

Sources: CMS Law-Now, 2017. “Ukraine: New Investment Opportunities in Large-Scale Energy Modernisation”. Available at: http://www.cms-lawnow.com/ealerts/2017/04/ukraine-new-investment-opportunities-in-largescale-energy-modernisation?cc_lang=en ; State Agency for Energy Efficiency and Energy Saving of Ukraine, 2017. “The law which will allow ESCO companies to continue investing in the thermo-modernisation of budgetary institutions is signed by the President of Ukraine”. Available at: <http://saee.gov.ua/uk/news/1699>

On the implementation side, protection for ESCOs that work with public entities can be perceived as weak due to the lack of knowledge of the budget regulations from the ESCO side and other regulations. According to specific amendments to the Budget Code (Law № 328-VIII from 09.04.2015) ESCOs have now extraordinary privileges which level risks of budgets planning on yearly basis. Since 2015, article 22 of the Budget Code state that payments for ESCOs are “secure expenditures”. However, despite this positive development, ESCOs and banks alike perceived that budget regulations make it difficult for ESCOs to sue for the payments of multi-year projects. Indeed, while ESCO contracts usually stretch over several years, local budgets are adopted on a yearly basis. According to the Budget Code of Ukraine, payments for energy services can only be enforced if they are provided for in the relevant budget. The lack of a specific budget line for energy efficiency projects limits the expansion of the market.

Action 2: Introduce model energy performance contracts (EPC)

Ukraine introduced a model energy performance contract (EPC) template in November 2015.⁵ The model contract is available online and can be freely used. The first energy service contracts using the template were signed in 2016. At present, there is only one EPC

⁵ Decree of the Cabinet of Ministers of Ukraine “On Approval of the Model Energy Service Contract” as of 21 November 2015 №845, available on <http://zakon2.rada.gov.ua/laws/show/845-2015-%D0%BF>

template in Ukraine, which can be modified to suit parties' needs for new projects. While this is a very flexible approach, it can be difficult for contracting parties to know the most appropriate payment scheme and to adjust the contract accordingly, since ESCO financing schemes are less common. This is especially relevant for homeowners who are implementing projects for the first time, whereas energy service providers will typically be more experienced. Ukraine has also launched a project to improve energy efficiency measures in public buildings and utilities through the creation of an enabling framework for ESCO projects (EBRD, 2016). As part of the project, which is funded by the Sida-EBRD Ukraine Energy Efficiency and Environment Consultant Co-operation Fund, Ukraine is working to develop further EPC templates and to implement trainings for their use.

In addition, to enable an effective forum for assessing and managing the needed regulatory reforms for EPCs, the government has established an inter-agency working group consisting of representatives of the Ministry of Regional Development, the Ministry of Social Policy, the State Agency for Energy Efficiency and Energy Saving, and the Co-ordination Centre for Economic Reforms under the President of Ukraine. The working group is co-operating closely with the EBRD to further develop EPC reforms and supporting activities.

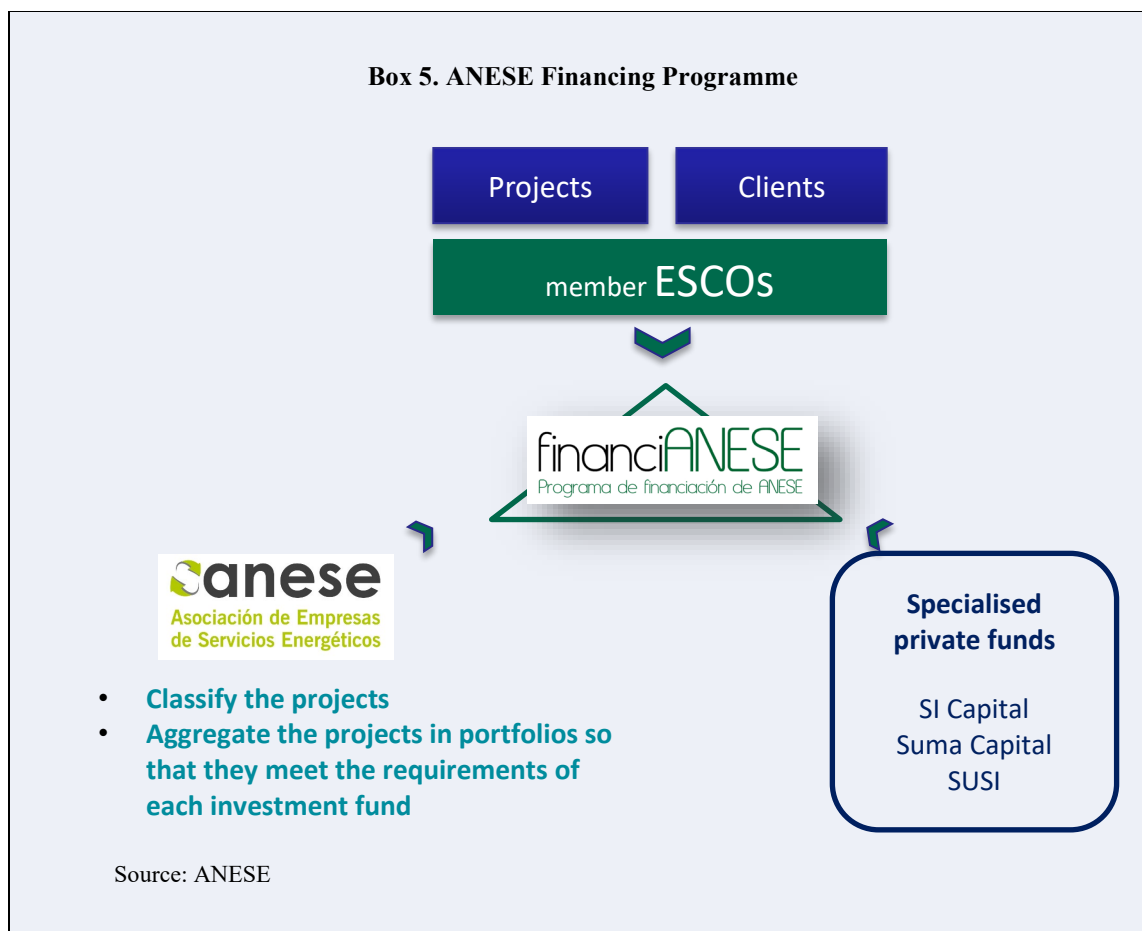
Action 3: Introduce training and capacity-building programmes to help LFI understand and implement ESCO contracting

As mentioned above, access to finance remains among the most important challenges for ESCOs in Ukraine. The availability of financial resources from LFIs is necessary in order to build the market, which will be limited if only public and donor funding is available. As ESCO remuneration is based on demonstrated performance, which can be over a long-term period, ESCO contracting models can be quite complex and understanding how an energy user and ESCO specify how cost savings are shared, measured, and verified is essential. Before ESCOs can build credibility and a track record, training and capacity-building programmes will help local banks lend to ESCO projects.

While Ukraine is to be commended for raising awareness on ESCOs and their business models, there have been few national training and capacity-building programmes specifically designed for bank staff. The National Centre for the Training of Bank Personnel of Ukraine is the institution responsible for such programmes, but it does not yet offer training focused on ESCO contracting. Ukraine has received some international support in helping increase knowledge of ESCO contracting as EBRD has worked with local banks to train staff to better understand the complexities of energy efficiency investments. Some individual local banks have started to develop in-house capacity for assessing energy-saving projects. For instance, Ukrgasbank (a bank owned 90% by the Ministry of Finance) has been seeking to position itself as the first environmental bank in Ukraine and has set a target for itself to finance 30% of the clean energy market in the country. Ukrgasbank is working closely with the International Finance Corporation to develop in-house technical capacity to finance green projects (OECD, 2018).

Also, ESCO projects are more likely to be attractive for financing institutions if they are larger, with concomitantly lower transaction costs. ANESE, the ESCO Association of Spain, has created a financing programme that classifies and pools smaller projects so that they meet the requirements of investment funds with which ANESE has negotiated favourable lending conditions. The programme guarantees a minimum project size and qualification through standardised certification and methodology, which allows for

securing financing of projects that would otherwise be unattractive for banks (see Box 5) (ANESE, 2017).



In addition, the UNDP Project “Removing Barriers to increase investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO modality in Small and Medium Sized Cities” executed by the Ministry of Regional Development between 2015-2021, includes training, awareness raising, and capacity building activities both for banks and for ESCOs with the aim to improve the understanding of the ESCO business model by local banks in Ukraine and that lending is eventually made available to ESCOs in Ukraine with the commercial financing of local banks (UNDP, 2015).

The way forward

Stimulate diversification of commercial bank financing for ESCOs

Since ESCOs often lack fixed assets or collateral in the traditional sense, allowing for future cash flow to be considered as collateral can improve financing opportunities from local banks. The government is currently considering regulatory reform to support this; any regulation as such should be carefully implemented in co-operation with local banks. Easing access to commercial finance will not only ease the burden of government support for energy efficiency projects but enable ESCOs to increase business activities and handle several projects at one time. As suggested by OECD (2018) the government should work closely with the National Bank of Ukraine to explore ways to facilitate ESCOs’ access to bank lending (e.g. through finance lease, or energy saving insurance).

Strengthen commercial banks' understanding of ESCOs

Capacity-building and awareness-raising among local banks can help reduce obstacles to ESCO financing. Improved understanding of complex payment schemes and increased familiarity with EPC contract models will help banks better tailor loans to ESCOs as clients. While the government has worked to increase energy consumers' awareness of ESCOs, capacity-building for banks in particular is still highly recommended and required in order to mobilise the sector since access to finance is still one of the greatest challenges for market development.

Define specific public financing support programmes for ESCOs

The government is commended for developing financing schemes aimed at implementation of energy-saving activities, particularly in partnership with donors and international organisations, but there is still room for extending such programmes for use by ESCOs and encouraging energy users to implement projects through the use of ESCOs by offering relevant public financial support programmes. While the government has committed significant financial resources to encourage energy-saving activities, such resources do not offer any financing options for ESCOs. In accordance with the State Aid rules, new specific financing instruments to encourage ESCO market development could be considered (e.g. dedicated to the renovation of public buildings).

Include a budget line for energy efficiency projects into the budget code

In order to strengthen the position of ESCOs towards public entities and secure their payments throughout the lifetime of a contract, an amendment to the budget code should be considered in order to include a budget line for energy efficiency projects. In the context of the decentralisation reform, the budget code already provides a legal framework for the local government budget system which is an important lever to unleash the potential of energy efficiency projects at subnational level. Including a specific budget line for energy efficiency projects would limit the risk for ESCOs of not receiving their payments from subnational authorities and will bring confidence in the market since it would allow to enforce the payment for energy services.

Expand energy efficiency funding through the State Fund for Regional Development

OECD (2018) called for ensuring adequate funding for development projects, which are eligible for funding through the State Fund for Regional Development (SFRD), and can also turn to co-financing (assuming sufficient resources), and private funds, including public-private partnerships (PPPs). Currently selected proposals need to fulfil sector quotas: 10% dedicated to energy efficiency of state and municipal education institutions and 10% to energy efficiency of state and municipal health institutions, among others. These quotas are too restrictive and the process of project selection is far from optimal, but there may be potential to finance ESCO projects at subnational level through the SFRD. However, the SFRD only covers development and capital expenditures and funds cannot be used for other categories of expenditure (e.g. consulting services that can help prepare and execute investment projects) which would be needed to better assess and execute ESCO projects at subnational level. Nor does it cover maintenance and repair expenditures which could be undertaken by ESCOs in the context, for instance, of building renovation. A broader definition of investments could fill the financial gap in terms of general purpose local investments, and when expenditures are closely linked to the investment project the restriction could be loosened. There is a potential to further support subnational

investments through the SFRD, and namely energy efficiency investment projects using ESCOs.

Develop guarantees and support for collateral

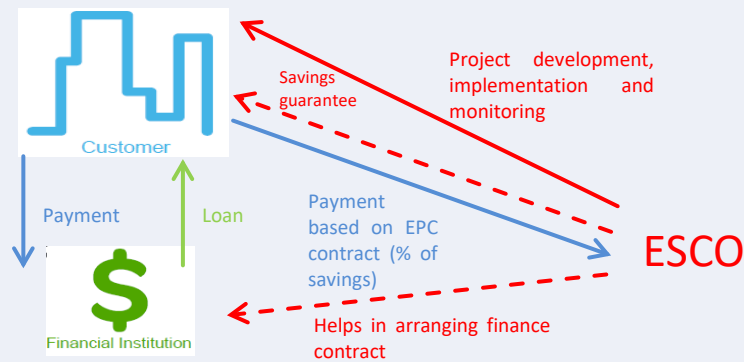
As concluded also by a recent OECD report, ESCO models should be pursued, with further work to develop schemes that adequately share both profit (from energy savings), and risk. ESCO markets will require some level of guarantees and support for collateral required by banks when working with municipal borrowers and public buildings to ensure that private sector capital can be attracted for investment purposes. Such ESCO type funds could make their own direct investments, but also work through existing commercial financial institutions (either as managers or as intermediaries) where these institutions have experience of appraising and investing in energy efficiency projects. Existing experience of implementing energy efficiency in municipal and residential buildings (EBRD) should be studied to identify best practices before moving towards the implementation of large-scale national schemes (OECD, 2018).

Diversify the EPC model templates

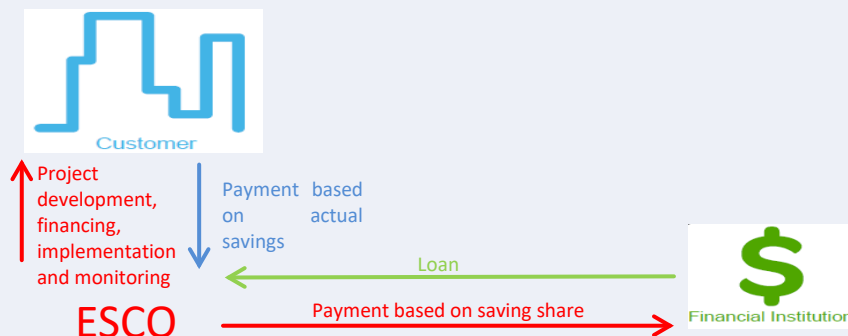
Ukraine's introduction of an EPC model contract is a good starting point for implementation of small-scale projects. As ESCOs can take on larger scale projects, further elaboration of standard EPC model templates into different types of savings schemes, for example, guaranteed savings and shared savings, can allow energy users to decide how risk can be shared with ESCOs. Other contract types, such as Energy supply agreements, could be used to develop untapped market segments, but only after structural weaknesses that impede long-term investments have been addressed. All parties involved in the contracting process would then be able to reference different models for different types of ESCO projects particularly as they can become quite complex in terms of payment schemes (see Box 6).

Box 6. EPC model types

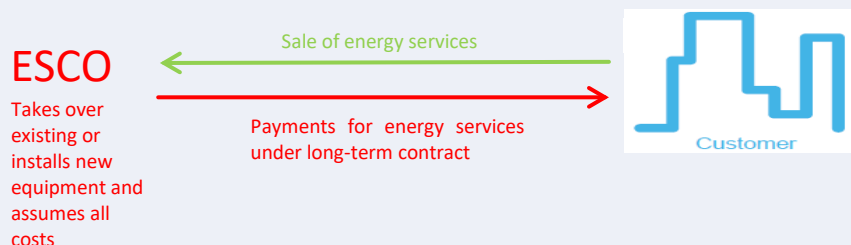
Guaranteed savings models allow the customer to finance the project, and make payment to the ESCO and repay any loans from the energy cost savings. The ESCO guarantees performance and measurement and verification (M&V) methods.



Shared savings models assume that the ESCO provides or arranges for financing, and the customer and ESCO agree on how cost savings are shared, measured, and verified.



Energy supply agreement models, or outsourced energy management models, are most commonly used in the European Union. The ESCO pays for upgrades and related expenses and sells the energy output (mostly heating) under a long-term contract at an agreed price.



Sources: (OECD, 2015). (Hofer, Limaye, & Singh, 2018)

Chapter 2. Stimulating demand

Context

In many OECD countries, increasing demand was a major factor driving the development of the ESCO market. Mature ESCO markets are demand-driven, with potential ESCO clients defining their needs and actively searching for suppliers (Bertoldi & Boza-Kiss, 2017). As such, efforts should be focused on stimulating demand for ESCOs in order to achieve sustainable growth in the ESCO market, which is still at an early stage in Ukraine.

While energy price reform will be the most important factor driving demand for ESCO services, there are specific actions the government can take that will further boost demand for their services. Particularly in the initial phases of market development, the government can play an important role in developing the ESCO market by promoting public sector demand for ESCO services through implementation of energy-saving activities in public buildings and entities (Hofer, Limaye, & Singh, 2018). Public sector experience can be transferred to the private sector where demand for ESCOs can be stimulated among businesses and households. Public sector projects mobilise ESCOs and help them build expertise at the technical, financial and management levels, thus building credibility and trust in the market. This experience can be applied to private sector projects and stimulate further demand. Even though investments in energy-saving activities usually generate considerable savings over time, they often come with high up-front costs that only pay back gradually. Consequently, they are not necessarily attractive for the private sector, particularly households and businesses.

Overview of 2015 recommendations

The government has been driving public sector demand for ESCO projects through regulatory reforms allowing public procurement of ESCO services. Legislation adopted in 2015 allows state agencies to sign multi-year contracts for energy-savings projects. At the same time, however, limited incentives were put in place for businesses and households to implement energy-saving activities. Businesses and households were identified as sectors that could benefit from ESCOs, which would help address the issue of high up-front costs, with benefits being reaped often over a long pay-back period.

Two actions were recommended to stimulate demand for ESCOs:

Action 4: Create incentives to boost demand for ESCO services in the business sector. Recommendations to introduce targeted subsidies, vouchers or tax incentives were made in order to motivate businesses to work with ESCOs. As in Austria (Klima:Activ programme), where energy efficiency has been encouraged both at a national and regional level through a variety of stimulus actions such as subsidies conditioned to mandatory energy consultation, such incentives may help creating the demand for energy services, which can support an ESCO market development (OECD, 2015).

Action 5: Help households to engage ESCO services. Measures to help households engage in long-term energy-saving measures were recommended for implementation. Improving access to information was also identified as a means to help households use ESCO services.

Findings of the 2018 monitoring assessment

Action 4: Create incentives to boost demand for ESCO services in the business sector

According to the NEEAP, Ukraine's industry is required to achieve 1610 ktoe of energy savings until 2020, which constitutes 25% of the overall target. In order to meet these targets, Ukraine has introduced regulations that can serve as a basis for increasing business activities and investments in energy efficiency. Although there have not been direct incentives for businesses to implement energy efficiency improvements through ESCOs, there have been some steps in support of developing an ESCO market. For example, in line with EU Directive 2010/31/EU, Ukraine has introduced a mechanism for obtaining energy performance certificates for existing and new buildings, although certain buildings are exempt from certification and compliance with the minimum requirements. The certificates can motivate businesses to improve their energy performance and thus stimulate the demand for ESCOs.

The main driver of demand for ESCOs in Ukraine, though, is still the public sector. Most ESCO projects that have actually materialised have been related to public buildings, only six contracts were signed in the residential sector so far. Law 327-VIII and Law 328-VIII regulate energy performance contracting for public bodies including general provisions, public procurement, and budgetary regulations. But there is a restriction for public institutions which have for-profit status, such as communal lighting companies. Hence there is an untapped potential to fill this market gap by ESCOs for EPC in residential sector and/or business-to-people projects.

The monitoring team did not identify targeted support or incentives to smaller businesses for implementing ESCO projects. SMEs, unlike larger multinational firms, may face greater barriers to employ an ESCO in cases of high up-front costs. Ukraine could look at the case of Turkey where, for example, the Turkey Sustainable Energy Financing Facility (TurSEFF) provides loans directed to SMEs and promotes ESCO activities (Box 7). Obviously, it would be expected that any similar system of incentives put in place in Ukraine should be in line with the State Aid rules and implemented in a transparent and fair way.

Despite the efforts described before, and the suggested new approaches, it should be highlighted that low energy prices create a key barrier to encouraging investment in energy efficiency and upgrading infrastructure, which are the two core goals of ESCOs. Low energy prices not only discourage end users from reducing consumption and investing in end-use efficiency, they also prevent supply-side utility companies (both power and heat) from achieving the necessary capitalisation to invest in large-scale infrastructure upgrade (OECD, 2018). Hence, the demand for ESCO is hampered by delayed further gas price increases. As such, as long as energy prices are subsidised, tax incentives for energy saving and other similar initiatives would be more complicated and less effective than reducing the subsidies in the first place.

Box 7. Turkey: Support for ESCOs through TurSEFF

Turkey Sustainable Energy Financing Facility, TurSEFF, is a programme that aims to provide finance for sustainable energy investments. The facility has been developed by the European Bank for Reconstruction and Development (EBRD) and has been supported by the European Union (EU) since 2010. TurSEFF offers financing for a broad range of projects under five components: Energy Efficiency, Water Efficiency, Material Efficiency, Waste Management and Renewable Energy. Under the Energy Efficiency component, the ESCO model is promoted as the most promising business model to implement energy efficiency, both in the public and the private sectors.

General eligibility for financing from TurSEFF is restricted to small and medium-sized businesses. The TurSEFF loan was designed to finance or lease energy efficiency and renewable energy investments identified and implemented by ESCOs.

Individual loans are limited to EUR 5 million; the maximum aggregate loan per beneficiary is EUR 15 million. For smaller amounts (below EUR 250 000) there is an automated application process using an online Technology Selector Tool.

Source: <http://www.turseff.org/solution/escolar-ve-esco-musteri-kredisi?ref=escolar-ve-esco-musteri-kredisi>

In addition to creating new funding models to advance energy efficiency (and other priority areas), steps should be taken to improve public investment capacities on the subnational level given that many energy efficiency projects fall now under the responsibility of subnational authorities. Weak institutional capacities and important governance gaps of public investment are the major barriers for efficient public investment in Ukraine. Effective co-ordination among levels of government could help identify investment opportunities and bottlenecks, manage joint policy competencies, ensure adequate resources and sufficient capacity to undertake investment, resolve conflicts, or create trust (OECD, 2018).

In order to promote better governance for public investment, OECD member countries have adopted the *Recommendation of the Council on Effective Public Investment across Levels of Government* in March 2014. The *Recommendation* lays out 12 principles grouped into three pillars representing systematic challenges for efficiently managing public investment: co-ordination challenges, subnational capacity challenges and challenges in framework conditions. Additional guidance for putting these principles into practice is provided by an implementation toolkit for policy makers at all levels of government. (OECD, 2014). Ukraine has been invited to adhere to the *Recommendation* in order to improve the co-ordination among levels of government and strengthen the capacities to undertake investments, including in energy efficiency.

Action 5: Help households engage ESCO services

The housing sector is the largest consumer of thermal energy, accounting for about 65% of the total consumption, making it a priority for energy efficiency improvement (UNDP, 2017). Ukraine has introduced important measures to motivate households to improve energy efficiency and to reduce energy consumption, although not necessarily through ESCO projects. For example, for the first time in Ukraine, many households know how much energy they consume at home, since the law “On the Commercial Metering of Heat Energy and Water Supply” (Metering Law) was enacted in August 2017. The new law

makes the installation of water and heat metering compulsory for all non-residential and residential buildings in Ukraine by August 2018 and August 2019 respectively. Metering improves energy users' access to information and is also important to help energy users measure savings if they implement energy efficiency activities in their homes. The Metering Law will make it easier to calculate energy consumption baselines for residential buildings. Metering consumption is a precondition for an initial energy audit as well as for determining savings and ESCO remunerations later on.

Ukraine has also introduced a number of loan programmes to increase energy efficiency among households, such as the “Warm loans” or the EBRD “IQ Energy” schemes mentioned above, in order to increase homeowners' interest in enhancing energy efficiency. At present, however, households can benefit from these support schemes without engaging an ESCO. Under the “Warm loan” as well as the “IQ Energy” programmes, homeowners can obtain financial subsidies for a wide range of energy efficiency measures, such as materials for thermal insulation/ modernization of the external walls, basements, attics and roof, installing energy efficiency windows, heat and water meters, solar thermal collectors, heat pumps, and others. Homeowners can choose a single energy efficient measure or a set of measures. However, in some cases, individual energy saving activities can lead to unwanted consequences, for example mould appearance after windows installation without relevant ventilation modernisation. A more holistic approach, with the expertise of an ESCO, could help to avoid such problems and at the same time identify additional energy saving potentials. Involving ESCOs in such projects can also help to make them more successful given their holistic energy approach and expertise.

The way forward

Pursue the reforms to energy pricing and markets

Increasing tariffs to cost-recovery levels (covering both capital and operating costs) would improve incentives to invest in demand-side energy efficiency, including ESCOs, and would ensure that adequate capital is available for upgrading energy infrastructure. Pricing should become more uniform across all user groups. Social protection for the poorest and most vulnerable should be targeted based on income through the welfare system, rather than integrated into energy tariff structures (something that the government is already working on). This would help avoid confusing and perverse pricing signals in relation to energy use. Such a process might also be accompanied by direct investment in housing infrastructure upgrades for social housing tenants. A move towards market pricing is a key component of the Energy Strategy to 2035, and this transition should be implemented according to the emerging Action Plan (OECD, 2018).

Improve legal basis for ESCO projects with private stakeholders

Stable demand will drive the growth of an ESCO market. While the public sector can help demand for services initially, private sector demand in the form of businesses and households must also develop in order for demand to become stable. Ukraine has made important strides to mobilise ESCOs through public procurement of services, but more needs to be done for private sector demand, including a legal basis for ESCO contracts with private businesses.

Create incentives to alleviate up-front costs for businesses

Ukraine's ESCO market development would benefit from creating incentives for businesses to implement ESCO projects. For example, subsidies or vouchers to defray the costs of energy-savings audits or other services could motivate businesses to implement building refurbishments. Support for SMEs would be especially beneficial, since smaller businesses tend to shy away from high up-front costs, while ESCOs would help alleviate such burdens.

Support energy audits linked to execution of energy efficiency measures

The many programmes now available to households for energy efficiency refurbishments could also include incentives to work with ESCOs. The government might include credits not only for equipment exchange or upgrade, as at present, but also for, *e.g.*, credits conditioned to home energy audits with ESCOs, which would allow households to implement projects in a more comprehensive manner. Any incentive or support to carry out energy audits should be linked to an obligation to actually implement energy efficiency measures. In Spain, experience has shown that homeowners are otherwise likely to do the audit, but not the subsequent refurbishment. As ESCOs normally can offer both assessment and implementation of energy-saving activities, this would also enable households to implement more effective energy efficient projects.

Enforce the use of building certification to stimulate energy efficient refurbishments

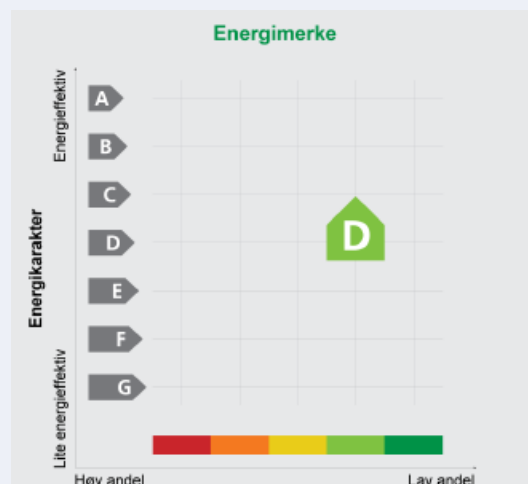
When building certificates are obligatory, owners are encouraged to increase their buildings' energy efficiency through retrofitting or refurbishment, and increase awareness of energy use in buildings. The certificates can serve as a basis to identify adequate energy efficiency measures, incentives and targets, and could help stimulate the renovation of buildings, especially in the residential sector. Ukraine has already introduced a mechanism for obtaining energy performance certificates for existing and new buildings in line with EU Directive 2010/31/EU. Thus, Ukraine should enforce this mechanism and set deadlines for certification of buildings (which should be shorter than the 10-year validity of the building certificates) defining compliance with the minimum requirements as illustrated by the case of Norway (Box 8).

Box 8. Energy performance certificates for buildings in Norway

Building standards have a long history in Norway, and the first energy requirements for buildings were introduced in 1949. The Ministry of Local Government and Modernisation is responsible for determining the requirements of the Technical Regulations on buildings. The Technical Regulations include requirements relating to energy use in buildings. The energy requirements have been revised and made stricter a number of times, most recently from 1 January 2016.

Since July 2010, it is mandatory in Norway to hold an energy performance certificate for any building that is constructed, sold or rented out. The regulation does not distinguish between public and private buildings. In addition, non-residential buildings exceeding 1000 m² in size must have an energy certificate that is displayed for the building's users. These arrangements are intended to improve knowledge and awareness of energy use in buildings.

Inspection of large heating, ventilation and air conditioning systems has also been made mandatory to encourage sound operation and inspection routines. Owners of private homes may choose whether to engage an expert to fill out the certificate or do it themselves. Energy certificates for commercial buildings and new buildings must be filled out by an expert. There is a free online system for obtaining energy certificates for buildings (www.energimerking.no).



The letter assigned to the building (axis Y) shows the energy efficiency rating, while the colour (axis X) shows the heating rating according to the energy source(s) used. The rating gives an overall assessment of the building's energy need. The certificate for both residential and non-residential buildings is valid for 10 years, or until major changes are implemented in the building. For non-residential buildings, sanctions are possible, and were used for the first time in 2015. Eight compulsory fines were imposed on owners of non-residential buildings. The controls have shown to be an effective measure to stimulate energy efficiency in buildings, and will be developed further.

Source: www.energimerking.no; <https://energifaktanorge.no> and (ADENE, 2016)

Chapter 3. Matching supply and demand

Context

ESCOs require a strong enabling environment and specialised skills in order to operate effectively. A functioning ESCO market requires efficient co-ordination among market players, as ESCO models are complex and require strong financial, legal and technical support. Underdeveloped ESCO markets normally lack a track record, which limits their ability to offer performance guarantees. Potential clients will therefore have questions of credibility and trust often leading to the perception that ESCO projects carry high risk (Hofer, Limaye, & Singh, 2018). All of this can prevent market players from making optimal choices. Addressing these gaps can help foster an ESCO market. Governments can work to strengthen the enabling environment for ESCOs in order to increase the demand for ESCO services and to support the ability of ESCOs to reach out to the potential market. Doing so can also help lower transaction costs and increase trust in market players.

Overview of 2015 recommendations

In 2015, Ukraine did not have a reliable framework for matching demand and supply of energy services. While there was large potential and need for energy-saving activities, the lack of clear guidelines for ESCO projects and EPCs, as well as a full range of technical, financial and managerial skills, added to the challenges in understanding and implementing ESCO business models. This added further uncertainty in an environment already characterised by low levels of trust in ESCOs, which reflected the up-and-down history of ESCO activity in Ukraine during the early 2000s and since their payment schemes required long-term commitments, although the financial system was weak. Furthermore, there were fewer than five ESCOs operating in Ukraine at the time, leading to questions about capacity. The OECD recommended four actions to better match supply and demand:

Action 6: Build skills in the energy services market. Addressing skills gaps will help ESCOs to provide a greater range of services and offer better solutions. It was recommended to assess skills needs in close consultation with ESCOs and other energy-related players in order to create adequate upskilling measures, with an emphasis on enabling ESCOs to offer the full range of services from energy efficiency analysis to equipment maintenance after the completion of a project (Figure 1).

Action 7: Support market facilitators. Agencies, consultants and other types of facilitators can provide qualified guidance throughout a project to help potential clients understand what ESCOs have to offer, help with the procurement process and assist in carrying out projects. They contribute considerably to a well-functioning ESCO market. It was recommended that the government support the development of market facilitators by supplying services through its national energy efficiency agency or local project managers, and promoting ESCOs through associations.

Action 8: Standardise ESCO contracts and provide step-by-step guidance for ESCO projects. Standardising the use of contracts, as well as guidance for stakeholders when hiring an ESCO, along with simple and easy-to-follow procedures can reduce administrative costs, time and concerns over unfamiliar project schemes.

Action 9: Support the formation of residential building associations. In the housing sector, residential associations can play an important role as reference points for ESCOs and can foster consensus among residents, which helps to speed up procedures.

Findings of the 2018 monitoring assessment

Action 6: Build skills in the energy services market

The government is working to support skills development in the sector. An “Action Plan for the energy management system implementation in public institutions” was adopted by the Cabinet of Ministers in April 2017. It instructs SAEE and local governments to introduce energy management systems in public institutions and to promote certification of such systems (SAEE, 2018). The government is working closely with ESCOs to assess the business needs and close gaps through the Ukrainian Association of ESCOs. In addition to the improvement of technical, financial and managing skills among ESCOs, their capacity to handle complex projects, or several at a time, needs to be developed. Moreover, when ESCO projects are tendered in Ukraine, there is usually no energy audit before the tender is announced. Instead, the bidding ESCOs do individual energy audits, setting its own energy saving targets. This makes the offers difficult to compare and increases the risk for both the ESCOs (as provider) and the final customer (as beneficiaries) to achieve optimal energy savings.

It is important to note that while the number of ESCOs in Ukraine seems to have increased since 2015, ESCOs today tend to be small engineering companies or energy equipment providers, with activities limited to smaller-scale projects (typically less than EUR 1 million). Neither Ukrainian legislation nor the Association of Ukrainian ESCOs has established clear criteria on which companies are regarded as ESCOs, leaving this designation to the discretion of individual companies. ESCOs should be able to offer a full range of services defined in Box 1, but there are still very few qualified ESCOs in Ukraine that can offer the necessary skill set and capacity for such projects. At present, ESCOs themselves have difficulties assessing financial risks related to energy efficiency investments. Newer and smaller companies consulted during the fact-finding mission confirmed that they tend to be cautious and therefore prefer not to base their remuneration on actual energy savings, and rather require fixed payments or base them on the size of the object – although SAEE states that EPCs remunerations without exceptions are based only on actual energy savings.

So far, Ukraine does not have a common standard for measurement and verification (M&V), and international standards such as the International Performance and Measurement Verification Protocol (IPMVP), are not used by Ukrainian ESCOs. M&V standards are a vital element of successful ESCO projects. They allow for exact baseline determination at the beginning of a project, which is crucial to avoid differences from projected savings, which accumulate over time to considerable losses that can jeopardize entire projects. Part of the skills that ESCOs in Ukraine need to develop is the ability to prepare projects that are “bankable”, i.e. attractive for financing institutions, who want the reliability of a certain level of solidness. This can be facilitated through such instruments as the Investor Confidence Project (Box 9).

Box 9. Investor Confidence Project

The Investor Confidence Project (ICP) was initiated as a private organisation in the United States in 2011. In Europe, it is active since 2015 through a consortium with support from the European Commission's Horizon 2020 Research programme.

ICP has developed *Investor Ready Energy Efficiency* (IREE), a certification for energy efficiency projects which can be granted to projects that are developed following ICP Protocols. IREE is currently available for residential and tertiary building energy efficiency projects, industry energy efficiency projects and street lighting upgrades. ICP engages investors in Europe committed to energy efficiency through its investor network, representing EUR 1.5 billion euros in capital, with some of them offering incentives to IREE projects.

ICP uses a set of six Energy Performance Protocols that define a standardised road map of best practices for originating energy efficiency projects following the ICP Project Lifecycle. They leverage existing and commonly accepted European and national standards in conjunction with ICP specified elements, procedures, and documentation based on the various stages of a project life-cycle to create standardised projects with reliable returns.

Source: europe.eepperformance.org

Action 7: Support market facilitators (agencies, consultants, etc.)

As ESCO solutions are complex by nature and difficult to compare, it can be very hard for potential customers to evaluate and compare offers. Market facilitators can help customers obtain information and choose the best possible option. The tasks that facilitators can perform encompass the whole range of ESCO project cycles, helping interested customers prepare a tender, select the winner, conclude a contract, monitor and verify savings (Bertoldi & Boza-Kiss, 2017). In OECD countries, market facilitators take on different forms and have been necessary in aiding the development of ESCO markets (Box 10).

Ukraine has made progress in supporting market facilitators, albeit mostly at the local level. In some municipalities, municipal energy managers co-ordinate local efficiency projects, help to develop local energy efficiency strategies, disseminate information and give advice to citizens. They can also develop know-how within municipal administrations to assess ESCO projects. Positive examples of such market facilitators have spread across smaller cities such as Dolyna (Ivano-Frankivsk Oblast) and medium-sized cities including, Myrhorod (Poltava Oblast), as well as regional centres such as Lviv, Vinnytsya and Zhytomyr (Zinchuk, 2017).

Box 10. Examples of market facilitators in OECD countries

Market facilitators can be organised as national or local entities, public or semi-public, and their offer can vary from information, consulting or even full ESCO services. ESCO trade associations can also function as market facilitators.

Finland: Motiva is a 100% state-owned agency that offers advice on sustainable development, energy savings, energy- and materials-efficiency and offers project and consulting services that promote the use of renewable energy sources, including the ESCO model. Its most important customers are ministries and other government agencies. Motiva also co-ordinates national energy advice for consumers free of charge. A subsidiary provides services to the private sector and to municipalities. Motiva documents lessons learnt from experiences with ESCO projects and makes them available online.

Ireland: The Sustainable Energy Authority of Ireland (SEAI) is a national agency that was established in 2002. SEAI offers advice to companies and organisations to reduce energy costs, sets standards for energy ratings, offers grants for energy efficiency improvement and runs training and awareness-raising campaigns. This includes information and advice about ESCO services. SEAI has developed a National Energy Services Framework (NESF) to support the non-domestic energy efficiency market in Ireland. The framework sets out the roadmap through which energy efficiency projects and an energy contracting process is developed. SEAI provides guidance and support documentation to businesses who consider this route.

Germany: The Berlin Energy Agency is a local facilitator that was founded in 1992 and is jointly owned by the local government of Berlin, the public development bank KfW Bankengruppe and two local energy suppliers. The agency not only provides information and consulting on energy efficiency and renewable energies, but also offers ESCO services itself across the full range of the ESCO cycle.

Sources: www.motiva.fi/en; <https://www.seai.ie/>; <http://www.berliner-e-agentur.de/en>

Projects in partnership with international donors have also been aimed at developing the role of market facilitators at the municipal level. For example, the GIZ project “Energy efficiency in municipalities” supports the development and dissemination of advisory and support services for energy management of projects in municipalities. UNDP is about to launch a project support facility in 2018, which aims at assisting municipalities to prepare projects with maximum energy efficiency potential while benefiting from the ESCO mechanism. In another example, with the help of USAID in partnership with the Kyiv City State Administration, a free-of-charge telephone hotline was opened in 2016 that offers information and advice for citizens on energy efficiency programmes, establishment of homeowners associations, as well as other services (USAID, 2018).

The UNDP Project “Removing Barriers to increase investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO modality in Small and Medium Sized Cities” launched the Consultation Center on energy saving and energy efficiency energoeffektivnaukraina.org.ua which provides information on the ESCO business model, contact details of ESCOs in Ukraine and EPC for all stakeholders (in Ukrainian only).

Action 8: Standardise ESCO contracts and provide step-by-step guidance for ESCO projects

Ukraine introduced a model energy performance contract in 2015 (see Action 2), and following this, has also developed guidelines for implementing ESCO projects through different partnerships with international donors. Such guidelines aim to lower administrative costs, reduce the length of contract tendering and processing, and clarify responsibilities and liabilities at every stage. For example, with the support of the EU Covenant of Mayors, a handbook was published to explain how energy performance contracts work and offer guidance for municipalities wanting to use ESCO services. In addition, in partnership with USAID, SAEI has also issued a guidebook on energy management in public buildings, which advises on the use of ESCO business models (USAID & SAEI, 2017).

Ukraine's efforts to standardise EPC processes have been boosted through the launch of its public procurement online platform ProZorro in 2016. The online platform allows for widespread tendering of EPCs to enable procurement of energy services for public buildings. ProZorro has helped standardise the tendering process, documentation, bids, and winner selection criteria. Although the numbers of contracts are expected to grow, overall volume to date remains very low, which reflects in part the lack of large-scale projects.

In Spain, even if administrations do not necessarily have the technical know-how, they use to include technical specifications in their tenders, for instance the required type of technology, which limits the possible array of solutions that can be offered by bidding ESCOs. Spain's ESCO Association, ANESE, has proposed an operational model for tendering energy services by public administrations which stimulates open competition and competitiveness in the ESCO market. In the proposed model, the administration gets technical assistance to define the energy base line and the level of services that is expected, without specifying a type of technology, which allows bidding ESCOs to compete on a level playing field with different solutions to meet the tender requirements. The technical assistance can be provided by third parties as energy consultants/auditors. In Spain, ANESE is advising some public entities with the development of new tenders based on the proposed model.

Action 9: Support the formation of residential building associations

Residential associations can play an important role when working with ESCOs, as they can act as a reference point in reaching consensus among residents when carrying out building improvements and renovations, as illustrated by the case of Spain (see Box 11). Residential building associations should therefore be encouraged to better channel the efforts towards implementing more energy efficiency measures.

In 2015, Ukraine passed Law 1565 which was aimed at dismantling the municipal housing and maintenance organisations in order to engage property owners in the management of multi-apartment buildings through the formation of residential associations. Since then, Ukraine has supported the implementation of the law through the launch of several programmes, which offer better conditions to homeowner associations than to individual homeowners in order to improve funding for energy efficiency projects implemented by homeowner associations.

Box 11. Case Study: Upgrading a residential complex in Spain

A residential complex with 242 apartments that was upgraded through an ESCO project could reduce the costs for energy consumption by 72% with the support of the residential association. Starting from annual energy costs of more than EUR 400 000, roughly EUR 1 million were invested to modernise the accounting and energy management, fuel and electricity saving and maintenance measures. From the first year, energy costs went down to less than EUR 120 000, generating savings that allowed for a payback of the investment after five years. Already during this time, residents benefited from a EUR 60 000 reduction in costs. From the 6th year, the savings surpassed EUR 300 000 per year. The energy and financial savings are shown below.

Current consumption

Fuel	EUR 396,284
Electricity	EUR 12,954
Maintenance	EUR 10,620
Total	EUR 419,858

Future consumption

Fix service fee	EUR 21,572
Heating and hot water	EUR 73,535
Electricity and lighting	EUR 4,020
Total (18% VAT)	EUR 116,970

Financing Plan

Investment	EUR 1,022,484
Grant	EUR 118,639
Total investment	EUR 903,845
Interest	6.75%
Amortisation	5 years
Annual payment	EUR 241,779

Savings

Current cost	EUR 419,858
Future cost	EUR 116,970
Annual savings	EUR 302,888
Amortisation (5 years)	EUR 241,779
Annual savings (years 1-5)	EUR 61,109

(ANESE, 2018)

Such programmes incentivise individual homeowners to form residential associations. For example, the IQ Energy programme can reimburse individual borrowers up to 20 per cent of their investment, while housing associations are eligible for reimbursements of up to 40 per cent when implementing energy efficiency refurbishments. In the case of the new Energy Efficiency Fund, only building associations will be eligible for loans. The government also launched a campaign through the tvocOSBB.org website (“Your homeowners’ society”) in 2016 to spread information on energy efficiency in multi-storey apartment buildings as well as the advantages of forming residential associations. Also in 2016, the Government launched a new web-site teplo.gov.ua, which provides information on tariffs, subsidies, and advice on energy efficiency.

The way forward

Accelerate skill-building through knowledge transfer from abroad

Improved skills and capacity of market players in Ukraine will help build and advance the ESCO market. Given the complexities of ESCO service offerings, strengthened technology, legal, financial, accounting and business skills are required in order for market players to build good track records and become better at carrying out larger scale projects. Skill-building could be accelerated through knowledge transfer from abroad, attracting foreign ESCOs to the market, which could prove difficult given the complexities of the business environment, or creating partnerships between local and foreign firms. While partnerships could be easier to realise in the near term, the market must ultimately become attractive to foreign firms.

Consider introducing a standardised M&V protocol

A commonly used model for measurement and verification would make offers from different ESCOs easier to compare. While there are various models such as IPMVP that could be used as an example, they may have to be adapted to the Ukrainian context in order to fit the needs of the market players. A standard does not have to be established by law, it can also be developed by ESCOs or their organisation, but it should be widely agreed and actually used so that customers can rely on it.

Empower national market facilitators that offer services across Ukraine

Market facilitators, such as ESCO associations, are crucial, because they have a pivotal intermediary function between suppliers and customers of energy services. The growing roles at local levels developed through municipal energy managers should be tracked and built at a national level in order to help identify good practices that can be shared and replicated across Ukraine. Establishing national market facilitators that offer services uniformly across Ukraine can provide important resources supporting development of the ESCO market. Both the Ukrainian Association of ESCOs (UAESCOs) and the Association of Ukrainian Cities (AUC) can play an enhanced role as market facilitators. On the one hand, the AUC can play a role in facilitating the assessment of ESCO projects at subnational level, combine call for tenders to reach a critical mass for larger projects, and to replicate the practices and know-how across Ukraine. The “Green municipalities” initiative by the Norwegian Association of Local and Regional Authorities has played an important role in spreading information about the EPC concept and model, and in developing model documents. This could be an interesting approach for the AUC to further explore and replicate. On the other hand, the UAESCOs can further identify market opportunities and tenders, provide advice on certification and financing instruments for ESCOs, and ensure the good quality of projects (Box 10).

Monitor and adjust EPC tendering through ProZorro

The standardised use of model contracts through ProZorro could be transformed into a database for reference on how to best use them (and could be connected with Action 12). A sort of “best practice” database. Furthermore, this could be particularly useful as projects grow to larger scales and contracts become more complex. Continued EPC tendering through ProZorro should be monitored and adjusted, particularly as the scale of individual projects increases, in order to create visibility to help develop the ESCO market. Moreover, the tendering procedure for ESCO contracts could be reviewed so that ESCOs that

participate in the bidding can compete with the best technical solution to achieve a given energy saving target, but without being limited to a specific type of technology. This would stimulate competition and competitiveness in the ESCO market.

Further stimulate residential building association use of ESCOs

The government's support of residential building association formation is a strong bridge towards the modernisation of large-scale multi-apartment buildings. As the existing support instruments offer preferential incentives to building associations, these may be extended to offer further incentives for supporting costs of certain types of services e.g. like energy audits, technical designs for the renovations, etc.

Chapter 4. Raising awareness

Context

ESCO models are complex and generally require strong understanding of technical content as well as financial, business and legal knowledge. Both energy users and commercial banks are normally inexperienced with ESCO projects in underdeveloped or small markets. They often lack procedures for project appraisal and decision-making, which tends to lead to the perception that ESCO projects carry high risk. As a result, ESCOs have a hard time building a track record and further technical capacity, and often are expected to assume all technical, financial and operational risks (Hofer, Limaye, & Singh, 2018). Building a well-functioning ESCO market, therefore, becomes challenging, as potential ESCO clients need to understand not only the potential gains from energy-saving activities but also about how ESCO models work. Lenders also need to understand how ESCOs operate projects. Awareness and promotion of ESCO models are important for market development. Quality control measures can also help develop mutual trust among market players.

Overview of 2015 recommendations

At the time of these recommendations, potential stakeholders of ESCO projects in Ukraine were found to be unfamiliar with the related mechanisms. An unstable financial market created uncertainty about the viability of ESCO projects, particularly since payback periods often required long-term outlooks (beyond one or two years) and yet banks were disappearing on a regular basis. The up-front investment of energy efficiency projects required long-term trust among all stakeholders since returns are based on future savings. Recommendations were aimed at raising awareness of ESCO services and benefits among end users, commercial banks and regulators, in order to help develop a sustainable market to ultimately achieve energy-saving goals. The recommendations included three actions:

Action 10: Encourage quality control of ESCOs. Transparent criteria for certifying ESCOs as well as quality standards for their services help to build confidence among clients. They can act as a marketing tool for ESCOs at the same time.

Action 11: Develop awareness and capacity-building programmes. Information on ESCO activities for businesses, residents and public agencies can raise public awareness for energy-saving implementation as a priority, while at the same time enabling market players to capitalise on project opportunities.

Action 12: Create a national database with free and immediate access containing details of previous ESCO projects and experiences in the country. Setting up references of projects carried out across the country will enable sharing of detailed information including savings made, payment structures and technical data among others. Making project information publicly available would allow for improvements, knowledge transfer and possible partnerships for future projects.

Findings of the 2018 monitoring assessment

Action 10: Encourage quality control of ESCOs

In order to increase engagement with ESCOs, it is important to establish qualification standards that can help potential clients choose between companies and build trust. As it has been the case in Spain, certification of ESCOs would facilitate consumer's choice and will build trust among the market players (Box 12).

Box 12. ESCO classification in Spain

Spain's national association of energy service companies, ANESE, has established a classification system open to all ESCOs that wish to be classified. It provides clarity in the market and distinguishes between specialized and professional companies, while indicating the business horizon.

Two marks of quality were introduced: the **ESE** mark for ESCOs which do not have own project experience yet but are fully prepared to offer ESCO services, and **ESE Plus** for those which have project experience, have running projects with guaranteed savings and have additional specializations, such as lighting, engines, heating/ventilation/air conditioning (HVAC), isolation, regulation and control, or industrial applications.



Source: ANESE

Ukraine has made some progress on qualification standards in the framework of the Energy Efficiency Fund. Although not specific to ESCOs, starting July 2019, certification of auditors will be compulsory⁶ such that only certified experts can evaluate project

⁶ According to the Law on Energy Performance of Buildings. The auditors of buildings will be automatically certified after completing a specific training course at specialised centres or self-regulatory organisations. The list and assessment of their quality will be made available in a transparent e-system in order to minimise the government influence, boost the competitiveness and turn on self-regulated mechanism (SAEE).

applications for EEF funding. Auditing can be one function of ESCOs. Currently, however, potential consumers of energy services in Ukraine cannot require ESCOs to provide certification documentation or references of their experience with energy performance contracting. Rather, ESCOs have been granted so-called “qualification holidays” by law until 2022 in Ukraine. Although this regulation was put in place to facilitate ESCO market development, it makes it difficult for potential customers to find good quality service providers and build trust in the ESCO market.

As long as there is no legal instrument to ensure quality control among ESCOs, the European Code of Conduct for Energy Performance Contracting (CoC) could serve as a guideline. It defines values and principles deemed necessary for the successful preparation and implementation of EPC projects while following guidelines of EU regulations on energy efficiency (Box 13). ESCOs can also independently adhere to the CoC and use it as a marketing tool.

Box 13. The European Code of Conduct for Energy Performance Contracting

The European Code of Conduct (CoC) for EPC has been developed within the project “Transparens - Increasing Transparency of Energy Service Markets”, co-funded by the Intelligent Energy Europe Programme of the European Union. The CoC was developed in co-operation with the European associations of EPC providers – the European Association of Energy Service Companies (eu.ESCO) and the European Federation of Intelligent Energy Efficiency Services (EFIEES).

Based on the definitions of the Energy Efficiency Directive 2012/27/EU (EED), the CoC sets out efficiency, professionalism and transparency as basic values for ESCOs and develops principles that are considered fundamental for the successful preparation and implementation of EPC projects. The CoC also includes definitions related to energy performance contracting in line with the EED.

The EPC Code of Conduct consists of a set of nine guiding principles on EPC projects implementation to support the high quality and transparency of European EPC markets:

1. The EPC provider delivers economically efficient savings.
2. The EPC provider takes over the performance risks.
3. Savings are guaranteed by the EPC provider and determined by measurement and verification.
4. The EPC provider supports long-term use of energy management.
5. The relationship between the EPC provider and the Client is long-term, fair and transparent.
6. All steps in the process of the EPC project are conducted lawfully and with integrity.
7. The EPC provider supports the Client in financing of EPC project.
8. The EPC provider ensures qualified staff for EPC project implementation.
9. The EPC provider focuses on high quality and care in all phases of project implementation.

The EPC Code of Conduct is a voluntary commitment and is not legally binding. The key message of the Code of Conduct is that EPC represents a fair energy service business model. Both individual ESCOs and ESCO associations can adhere to the CoC. The main role of the Code of Conduct is to bring confidence to the EPC market in Europe and compliance with the Code of Conduct serves as a minimum guarantee of the quality of EPC projects implemented.

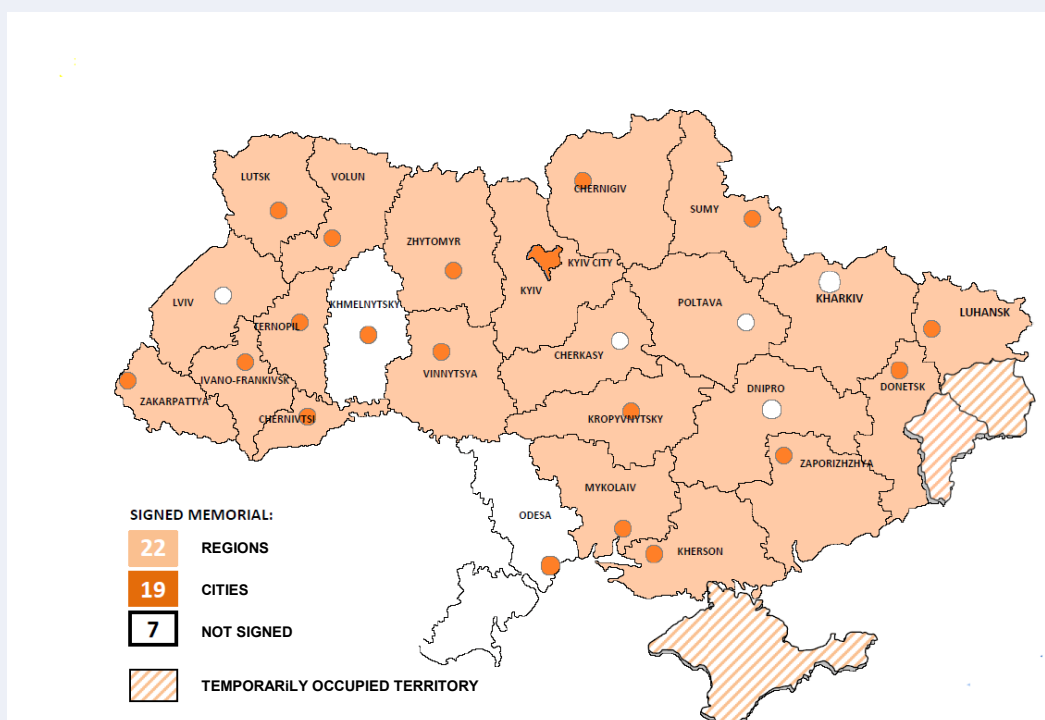
Source: <http://www.transparens.eu/eu/epc-code-of-conduct>

Action 11: Develop awareness and capacity-building programmes

Ukraine has launched several awareness and capacity-building campaigns to promote the use of energy services. The 2017 “Action Plan for the energy management system implementation in public institutions” tasks SAEE to promote activities such as trainings and seminars on implementation of energy management systems in public institutions. Together with the Friedrich Ebert Foundation and GIZ, SAEE developed a communication plan on ESCOs and regional energy management through a series of seminars in regional centres throughout the country. Targeted at heads of local administrations, local governments and budgetary institutions, among others, these one-day seminars explained

how to implement energy management systems. During May-December 2017 alone, 23 workshops with 100-250 participants were held, reaching around 3 000 local decision-makers (SAEE, 2018). The Government of Ukraine has been actively increasing awareness and knowledge of the ESCO model among regional and local authorities. The majority of regions and larger cities expressed intention to implement the ESCO mechanism by signing memoranda with SAEE on using energy services for public buildings (Box 14). As of August 2018, 31 cities have announced a total of 467 tenders for ESCO services in public buildings (SAEE, 2018).

Box 14. Map of signed Memoranda of the intention of subnational authorities to introduce ESCO-mechanisms in the budget projects



Source: (SAEE, 2018)

Action 12: Create a national database with free and immediate access containing details of previous ESCO projects and experiences in the country

SAEE, in co-operation with local authorities, has set up a national database of past and potential ESCO projects related to the thermo-modernisation of public institutions since July 2017 (SAEE, 2017). SAEE already runs a database in which it has identified more than 12 200 municipal objects and more than 2100 state-owned objects for potential energy renovation, and 41 memoranda have been signed with regional and local authorities to prepare the ground for ESCO projects (Korchmit, 2018). The data gathered in this context can also be used for the project database.

In addition, in February 2016, the Centre for Market Economy Development announced Ukraine's intention to create a single ESCO database on the esco.org.ua portal in order to

support co-operation between all stakeholders. The database aims to include Ukrainian and international best practice experiences highlighting efficiency savings, payback periods and other project details (CMD Ukraine, 2016). The website is still under construction.

Sweden's energy agency *Energimyndigheten* is running a database that contains information on the projects it supports since 2008. Projects can be searched for by various parameters, and project reports are also available once a project is finished (Energimyndigheten, 2018). Although this database presents all projects that have received support from the Swedish Energy Agency, not only energy performance projects, it is an on line meeting point to obtain relevant information for potential clients and energy efficiency providers, including ESCOs.

The way forward

Uniform qualification standards requirements for ESCOs

Raising awareness of the benefits of the ESCO model among all market players will continue to be fundamental for achieving long-term growth in this sector. The same is the case for trust – particularly clients and banks need information that helps them develop confidence in suppliers. Trust is closely linked to quality standards that customers can rely on. Currently there is no uniform qualification standards requirements for ESCOs entering project bids in Ukraine although there are some Ukrainian certificates of excellence that can be granted to technology suppliers. While the ESCO market is still under development and since Ukraine is moving towards adhering to the EU Directive on Energy Efficiency, Ukraine may benefit from requiring companies to be in line with European qualification standards, which follow EU regulations on energy efficiency.

Include information on how to work with ESCOs in technical trainings

Familiarising potential clients and stakeholders of ESCO business models helps to build the market, particularly as such projects require long-term conditions and commitments. Capacity-building measures should be targeted to stakeholders in the ESCO market, and their needs should be identified in close co-operation with ESCOs. Ukraine has already taken positive steps towards raising awareness about energy-saving activities. These programmes can also be used as platforms to further understanding about ESCO projects. For example, the new EEF law sets up a framework for technical training, marketing campaigns and communication activities for awareness-raising about energy efficiency activities. Information on working with ESCOs could be included.

Spell out the energy and financial savings of concluded projects

SAEE's database to document ESCO projects on thermo-modernisation of public buildings can eventually be elaborated to include all types of energy-saving activities. The priority would be to keep a record of finished projects while potential projects can be left for the ProZorro tendering platform. The data on finished projects should provide detailed information on: savings achieved, time-span, internal rate of return on investment, pay-back period, details on contract schemes and structures, qualifications of ESCOs, information about clients, and financing parties involved.

Set-up and launch the single ESCO database

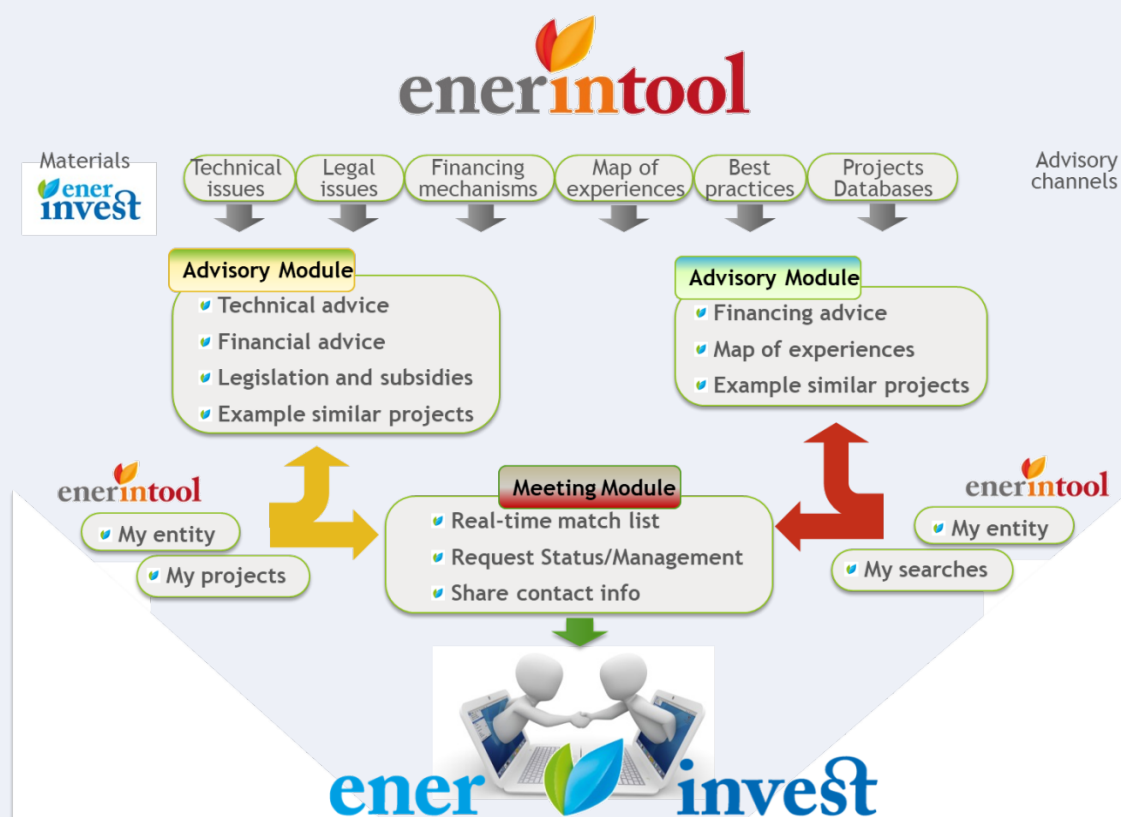
The existing databases for buildings and projects should be merged into a single portal that allows easy access for all market players. This could be further developed into a matching

tool for investors and building owners, taking the example from Spain's Enerintool module (Box 15).

Box 15. Enerintool

In Spain, Enerinvest is a national reference platform for financing sustainable energy projects; an information, meeting and dialogue platform between the main private and public entities in the sector with the aim of providing technical, legal and financial solutions to energy efficiency and renewable energy projects. It has created Enerintool, an advice and matching tool for the financing of sustainable energy projects.

Enerintool connects building owners (public entities, businesses, non-profit organisations, homeowners) who want to increase energy efficiency with investors (ESCOs, banks, investment funds, crowdfunding platforms) with a searching and matching functionality that also provides information on similar projects, subsidy opportunities and financial and technical advice.



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