SUMMARY REPORT

KICK OFF WORKSHOP

Accelerating Building Efficiency and Modern District Energy in the City of Belgrade

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City of Belgrade

November 2016

Contents

I. Introduction and summary

The Building Energy Efficiency Accelerator (BEA) is part of the United Nation's Sustainable Energy for All Initiative (SE4ALL) and assists sub-national governments in improving the energy efficiency (EE) in their jurisdictions. The initiative is a network of businesses and NGOs committed to working in partnership and collaboration with policymakers to help achieve their city's building energy efficiency goals. In 2016-2017, Belgrade has been selected as one of 6 cities to enter into a deep dive partnership with the BEA. Over the course of the project, this partnership will engage city stakeholders, global SE4ALL partners, business and civil society organizations to help speed up action on energy efficiency policy and projects.

The inception workshop summarized in this report was jointly held with SE4ALL's District Energy in Cities Initiative (DES). This initiative is led by UN Environment and is bringing together cities, academia, technology providers and financial institutions in a joint ambition to accelerate modern district energy. Belgrade is a pilot city of the DES Initiative and will receive support over the next three years to improve the sustainability and quality of its district energy system.

The City of Belgrade, acting through the Office of the Mayor is uniquely positioned in its efforts to accelerate efficiency, as it is the only city worldwide taking part in both initiatives.

II. Kick off Workshop - Summary

The kick-off workshop to Belgrade's BEA engagement took place on Monday October 31st, 2016. It was jointly held with SE4ALL's District Energy in Cities Initiative. The workshop was organized into two parts, with the morning session focusing on introducing the projects and offering insights into current (inter)national case studies and best practice on building efficiency and district energy. The afternoon session provided the opportunity for participants to discuss priority actions and next steps in shaping the city's plans within the two initiatives.

II. 1. Morning session: Introduction of the project and ongoing efforts on energy efficiency at city and national level

1. Welcome remarks

The workshop was opened by the Mayor of Belgrade **Dr. Sinisa Mali** who is pleased to have the City of Belgrade as a champion city within both SE4ALL initiatives. He stressed that energy efficiency forms one of the important elements of Belgrade's energy policy and announced that the city will set up an Energy Efficiency Fund at the

end of the first quarter of 2017. This newly announced fund will offer the means for the city to move forward with a multitude of energy efficiency projects in the future.

Ms Jasmina Muric, Special advisor of the State Secretary for Environment, Ministry of Agriculture and Environment stated that the State Secretary and the Ministry are very pleased to be able to welcome these two initiatives in Belgrade and Serbia. She stated that energy efficiency and GHG emission reduction are priorities for Serbia and that the Ministry fully supports implementation of the two initiatives.

Ms Aleksandra Siljic Tomic of UN Environment welcomed participants on behalf of the BEA and DES project teams and lead through the workshop.

2. The Opportunities of Building Efficiency and Modern District Energy

Ms Antonela Solujic, Head of Department for Energy Efficiency at the Ministry of Mining and Energy gave an introduction to energy efficiency perspectives in Serbia, linking the ongoing work of the Ministry with the two initiatives.

Mr Goran Trivan, City Secretary for Environment stated that the Secretariat for Environment is fully supporting the two initiatives implemented by WRI and UN environment and that the topics introduced represent a city priority recognized in the planning for the coming years.

Mr Marko Stojanovic, City Secretary for Energy introduced the upcoming establishment of the Energy Efficiency Fund, its expected structure and manner of budgeting and operational organization. The fund will be run by the Secretary for Energy and will be set up as a revolving fund with the support from EBRD and KfW, with a transparent bidding process for projects.

Following the national and local representatives, **Dr. Ksenia Petrichenko**, of the Copenhagen Centre on Energy Efficiency implemented by UN Environment and the UNEP DTU Partnership, introduced the Sustainable Energy for All Initiative (SE4ALL). The SE4ALL Initiative was established by the Secretary General of the United Nations, with its advisory board chaired by the President of the World Bank. As the established delivery mechanism for the 7th Sustainable Development Goal: "*Ensure access to affordable, reliable, sustainable and modern energy for all",* SE4ALL encompasses three objectives by 2030:

(1) to ensure universal access to modern energy services,

(2) to double the rate of energy efficiency improvement, and

(3) to double the share of renewable energy in the global energy mix.

The Copenhagen Centre on Energy Efficiency is the Energy Efficiency Hub under the SE4ALL initiative which hosts the BEA and DES Initiatives.

Mr Eric Mackres, Project Manager at the World Resources Institute (WRI) presented the Building Efficiency Accelerator (BEA) and the potential that lies within energy efficiency in buildings. Through its engagement with the BEA a city commits to three activities in which it is supported by the BEA and its extensive partner network:

(1) Developing an energy efficiency policy,

(2) Piloting a demonstrate project and

(3) Establishing an approach for tracking action, documenting progress against policy and project goals.

WRI together with its global partners offer support to BEA cities in assessing and prioritizing locally-appropriate policies and actions; matching city needs with expertise, resources and tools; and the opportunity for sharing lessons learned.

Mr Benjamin Hickman of UN Environment introduced the District Energy in Cities Initiative and gave an overview of the importance of district energy globally to achieving energy efficient, clean and renewable heating and cooling and its complementarity to building efficiency improvements. He set out the DES Initiative's objectives and multi-stakeholder partnership and shared a technical guide for accelerating district energy in cities. He described the DES Initiative's work on increasing global outreach for district energy which has been lacking. He set out the seven pilot countries of the Initiative and how lessons from these pilot countries would be replicated globally. He described how Belgrade has been selected as the first pilot city of the Initiative and will receive support from the DES Initiative to jointly undertake:

(1) Capacity building and international study tours

(2) A deep assessment of the city's district heating network and existing strategies, policies and regulations.

(3) Development of a 10-year district energy master plan of policies and investments to realize the district heating strategy of the city and Beogradske elektrane.

(4) Develop a demonstration project

(5) Assessment of national policy and regulations relating to district energy

The DES Initiative would also work nationally within Serbia to ensure scale-up and replication of lessons from Belgrade to other cities in Serbia, ensuring Belgrade becomes a champion city for the region.

Dr Miodrag Grujic, Secretariat for Environment, presented on the opportunities of a combined approach to building efficiency and district energy in Belgrade. He gave an overview of the current situation faced by Belgrade, highlighting that of its flats roughly 50% were connected to the district heating system. Additionally, around one third of residential buildings in Belgrade are currently not equipped with sufficient thermal insulation. There is a lack of use of renewable energy sources, including solar, biomass, geothermal, waste. The city's low air quality as well as the desire to increase energy security have been the driving factors behind the rising interest in accelerating energy efficiency in the jurisdiction.

Dr Romanas Savickas of Vilniaus Energy gave a forward looking presentation by show casing the achievements of Vilnius City in Lithuania, one of 45 champion cities in the world with regards to district energy. Vilnius have undertaken a low-cost energy audit of its building stock using 330 building archetypes to make approximate cost estimations for different building efficiency measures. This is helping Vilnius undertake a joined-up approach to building efficiency and district heating, evaluating the least cost heating solutions and improving planning of district heating network modernization and expansion. He suggested that similar mapping of buildings could be undertaken in Belgrade to ensure building efficiency programs and district energy development are harmonized and least cost.

3. Case studies and best practice in Building Efficiency

Following a short coffee break the workshop resumed to let experts from research institutions and the private sector present case study examples on energy efficiency in buildings in Belgrade, Serbia as well as international best practice examples.

Prof. Dr. Dusan Ignjatovic of the University of Belgrade presented his research on Belgrade's building stock. Within his work on characterizing Belgrade's and Serbia's residential buildings, Prof. Ignjatovic and partners performed detailed energy audits of buildings. They were able to demonstrate how a large number of apartments are not fully heated and how multifamily buildings often show varying levels of energy performance across different housing units. The accompanying infra-red images visually underlined that EE renovation measures are carried out by individual dwelling

owners and are not consistent along the entire building, one of the major concerns in Belgrade's residential sector.

Ms Natalija Popovic, Director for Strategy and Sustainable Development, Hemofarm AD, presented Hemofarm activities in planned refurbishment of the HQ building in Belgrade and expected energy efficiency gains. She also mentioned production facilities throughout Serbia operating in accordance with prescribed requirements and introduced strategic directions of the sustainable development unit.

Mr Maarten de Groote of the Buildings Performance Institute Europe (BPIE) presented his institute's work on safeguarding energy security in South-East Europe through improvement in energy efficiency in buildings, as a demand side infrastructural measure. Mr de Groote stated that according to BPIE's vulnerability index Belgrade's building stock shows a severe vulnerability level. With 50 % of the city connected to the district heating system of which 85% is supplied by gas, potential impact on consumers and businesses in the case of a gas supply disruption is considered very high for Belgrade. Additionally, Serbia shows energy poverty indicators among the highest in Europe. Combining measures geared at heat savings and a sustainable energy supply offer a clear path in addressing and alleviating the stressors on Belgrade's current energy system. Avoiding the lock-in of medium building efficiency measures should become a priority in the city as current regulation will mandate more efficient options in 5 years' time. Through best practice, regional cooperation and data collection on the building sector, BPIE and its project partners seek to support Serbia and Belgrade in designing appropriate measures to transition to a more sustainable energy model. Thus making it less vulnerable to gas supply disruption.

4. Case studies and best practice in Modern District Energy

Mr **Petar Vasiljevic** of Beogradske elektrane (Belgrade District Heating Utility) combined approaches to improving energy efficiency in the city's building stock and district heating system. In his presentation he provided cost calculations for carrying out energy efficiency improvements in buildings as well as within the district energy system, highlighting the benefits and energy savings that can be achieved if both elements are modernized. He further made the connection to the reduced

consumption of primary energy that accompanies the increase in energy efficiency. In one of his calculation scenarios Mr Vasiljevic demonstrated that such a reduction in primary energy either frees up existing capacity or makes the installation of new capacity unnecessary, lowering costs for expansion of district heating. He makes the proposal to expand the network connect dwellings currently using electricity for heating to the existing district heating system which is a very inefficient way to produce heat. Further, Mr Vasiljevic described the Development Strategy 2030 of Beogradske elektrane.

Dr. Oddgeir Gudmundsson, Director for DHS-TA Projects at Danfoss, presented best practices and financing of energy efficiency from the company's portfolio. He started his talk with emphasizing that in typical old buildings that have not undergone renovation large energy savings can be achieved fast with limited investments. He gave the example of a combination of new thermostatic valves with a balancing solution that are able to increase comfort and reduce energy consumption by more than 20% in the majority of cases. Dr. Gudmundsson stressed that heat metering and individual billing is a must, as great energy savings rely on user behavior and can be achieved by creating awareness of energy usage. He highlighted that the technology is not only available and well proven internationally and in the case of district heating also widely accepted in Belgrade. This leaves financing as one of the major barriers to the implementation of EE. He further provided some options available through Danish programs to overcome this barrier.

Mr Christian Engel, Business Development Director at the Thermaflex Group, presented real world examples of existing sustainable district heating systems, including cradle to cradle technology solutions. He provided details on several case studies from Thermaflex highlighting their approach to problems by addressing them through solutions that are able to flexibly adapt to new situations and challenges. He stressed that by working together with their stakeholders and building on their experience with testing of prototypes and successful implementation the company is able to carry out projects often with significantly lower installation times offering minimal disturbance and lower impact on citizens. One best practice example was the street in a day project where they achieved the connection of 10 households to the district energy system within 1,5 hours in the Dutch City of Hengelo.

II.2. Afternoon session: Priority actions and next steps for the initiatives

The objective of the afternoon sessions was to initiate a coordinated discussion among the present stakeholders to move forward on the two initiatives. For this the BEA and DES split into two parallel sessions to further develop their programs.

a) Building Efficiency Track – Stakeholder Coordination

Following a round of introductions, the BEA discussion started with Eric Mackres from WRI giving a short overview of the initiative, its objectives, ongoing activities in other deep dive partner cities as well as on the global level of the initiative. Following this Michelle Bosquet from UN Environment went through potential action activities that could be chosen by the City of Belgrade as part of their commitments under the BEA.

Due to the large existing building stock of low to poor EE quality, it was suggested and agreed to focus on encouraging effective EE improvements of existing buildings as part of Belgrade's engagement with the BEA.

The floor was then opened for discussion among the present stakeholders. The four guiding questions to lead the discussion and to support the identification of priority actions were:

1. How important is/are the action(s)? How large will the impact be? Can it/they be scaled up?
2. How difficult is the implementation of this action? How likely are we to be successful? What are barriers?
3. Which of these actions are most aligned with the broader energy strategies for Belgrade?
4. Who are the stakeholders who need to be involved to develop, implement and sustain the actions?

Serbia, as a whole, has already established a solid foundation of EE policies targeting its building sector. Therefore, it was agreed that focus should not be put on the development of further regulations but rather on supporting the implementation, quality assurance during refurbishment and uptake of EE renovation, which is currently faced by a multitude of barriers.

The discussion started out with the agreement that while the policies were in place and generally well understood and designed, compliance especially on the local level

is very low. Several reasons and issues were consequently discussed that informed the selection of the potential policy actions:

- There is a lack in mechanism or procedures to ensure compliance in the construction phase but also when seeking financial support. This applies to private and public buildings and is more prominent in building refurbishment compared to new buildings.
- Limited financing is available: credit lines have stopped operating or need to be revived. While public interest exists to access these credit lines they could use more structure, as financing is often awarded following different requirements.
- Additional financing is needed considering the low level of disposable income of many Serbian households.
- Although laws exist to regulate reconstruction activities they are often "read differently" by different actors, making the process of renovation difficult to understand and carry out for general public and developers.
- Another gap exists between regulation and compliance in terms of consumption based billing. While the utility is required to transition to consumption based billing this is currently not done, due to several reasons. The lack of consumption based billing results in the fact that EE improvements currently do not benefit a tenant's/owner's energy bill.
- The lack of insulation and poor energy performance of many buildings are hindering the transition to consumption based billing. An estimated 1/3 of flats connected to district heating will have to pay significantly more if consumption based billing were introduced today without any efficiency improvements to flats.
- New buildings are faced with compliance issues, as often investors and contractors do not follow regulation. Occurrences were mentioned were thermostatic valves needed for consumption based billing were not installed and this was failed to be reported during the technical inspection of the building.

From these discussions the following 3 actions quickly established themselves as priority activities that should be further discussed in the coming months while the work plan for the BEA is being developed.

Policy:

1. Action on **Streamlining of procedures in retrofit projects**: Development of standardized technical and financial procedures (guidelines) for building retrofits that can be customized to each of the major building typologies found in the city. These procedures could be aligned with and eventually applied in the city's building retrofit plan, currently under development.

2. Action on **Consumption based billing**: Developing a policy or approach (such as awareness raising activities) that supports the broader roll out and/or installation of smart metering technology to enable the transition to consumption based billing.

3. Action on **Financial Schemes**: EE improvements are hindered by a lack of available funding to cover additional costs compared to basic renovation measures. Only a limited number of credit lines exists that support EE improvements. They often lack structure or have stopped operation. Reviving and extension of these credit lines could thus be a targeted action.

Demonstration project:

The discussion turned to demonstration projects and quickly centered around options that could offer tangible results and could be replicated on a larger scale throughout the city. Visibility and wider sharing of information were considered as key elements of the chosen demonstration project.

It was further highlighted that if a standard procedure for energy efficient renovation was chosen as the policy action, the demonstration project should follow these guidelines. This would offer the opportunity to pilot the guidelines and evaluate their effectiveness. Lessons learned from the demonstration project could then be used to improve the developed guidelines.

It was stressed that the demonstration project or projects should be of high visibility to allow people to exchange on their experience and better understand the benefits of energy efficiency refurbishment. Residential buildings were seen as a priority action, as these not only directly affect people's well-being, but are also the prevailing building type in Belgrade. However, key barriers for the seclection of residential buildings within the BEA activities is the lack of a mandate for the city to organize, oversee and finance private building renovation. Specifically, multifamily housing that is often managed by tenant's councils faces the issue that these

associations are not able to receive traditional loans for any planned renovation activities.

Some in the group were in strong favor for the demonstration project to be a public building owned or operated by the city. It was expressed that the public sector has the responsibility to demonstrate leadership on the topic of energy and resource efficiency and is currently not doing so, sending a poor message to the general public.

These limitations and barriers will have to be considered in the future detailing of the project. The following actions were favored by participants as demonstration projects to consider and further develop:

1. Action on **Public buildings**: Selection of one or more visible public buildings that represent a common building type found in Belgrade. The renovation measured carried out should demonstrate the feasibility and benefit of building energy renovations in the near term and make the benefits accessible and understandable to managers, employees and citizens of Belgrade.
2. Action on **Several building types (public and residential)**: Selection of several public and residential buildings that represent a common building type in Belgrade and offer the opportunity for replication of full building EE renovation. A pipeline of suitable projects could be established to enable continuous implementation of retrofits beyond the initial year of the BEA partnership.

The discussion also touched on concrete green building measures including the potential for green roofs across several public buildings in Belgrade that shows a large number of roof types suitable for green roofs. Additionally, Belgrade's untapped geothermal potential was also highlighted.

All the discussed actions offer the opportunity to accelerate building efficiency in Belgrade. The often support each other or could be most effective when carried out in a package of measures. In the upcoming months it will be for the city and the BEA support team to develop the best solution to deliver impact on Belgrade's buildings.

Tracking progress

The third commitment under the Building Efficiency Accelerator, the development of a method to baseline and track performance against policy and project targets, was not discussed during the kick-off workshop. However, ongoing activities exists within the City of Belgrade to improve the understanding of the city's GHG emissions and the alignment of its GHG inventory process with Serbia's National Communications. These

activities may form a basis for the fulfillment of the third commitment under the BEA and will be discussed as the project progresses.

Barriers

The stakeholders also discussed a variety of barriers currently hindering the wide uptake of energy efficiency in Belgrade's buildings. These barriers will need to be further evaluated to identify how actions under the BEA can help address them, as well as operate effectively despite them. Major barriers included:

- Compliance with existing regulation, incl. during the construction/renovation of buildings (e. g. failure to install thermostatic valves)
- Technical inspections and audits of new buildings carried out by private companies often fail to expose compliance issues and to ensure quality
- Institutional limitations to enforce regulation
- Unclear or complex ownership structures, e. g. owner of building, land and building occupant are often not the same institution/individual complicating the process of agreeing and carrying out of renovation activities and accessing financing
- Significant share of households would see a steep increase in energy bills if system would shift to consumption based billing

b) **Modern District Energy Track – Stakeholder Coordination**

This session was moderated by Mr Bojan Bogdanovic of the district heating (DH) company "Beogradske elektrane" and Mr Benjamin Hickman of UN Environment.

The session was focused on identifying the strengths and weaknesses of the DH system in Belgrade and discussing the already planned DH activities in Belgrade with the aim to prioritise activities of the DES Initaitive in Belgrade. The session was attended by the representative of the Secretariat for Environment, UN Environment and representatives of the private sector, apart from the two moderators.

Overview of current system

Strengths include the following:

- DH network covers the city center and has shut down over 1250 boiler houses in the last 30 years.

- The temperature regime in Belgrade and wider Serbia is very good compared to southeastern Europe, running on very low temperatures which is important for connecting waste heat and solar thermal.
- Very modern substations that are direct and without accumulators – helps to remove risk of Legionella problem of such low temperatures.
- Disconnection from the network not due to lack of thermal comfort

Weaknesses include the following:

- The pipe network is 25 years old – there are significant losses in water and temperature
- There is a certain lack of interconnection, which leads to oversized generation of heat
- The tariff prices are too high which is leading to disconnection
- Consumers are mostly not charged based on consumption and inefficient buildings mean transition to consumption based billing needs to be in parallel to energy efficiency programme.
- There is a need to increase renewable energy sources (RES)
- 90% of network is run on natural gas creating energy security concerns
- 9% of the network is run on heavy fuel oil and this is a priority for switching
- Only 10% of buildings have domestic hot water connection[1] representing 2% of energy consumption.
- Connections are mostly to flats which are owned individually

Overview of Strategy and Goals

Beogradske elektrane has developed a Development Strategy for 2015-2025 which will shortly be approved by the city. This sets out Beogradske elektrane's objective of lowering prices while enabling a fuel switch from gas and improvement of network efficiency. The strategy highlights specific goals, broadly under the following categories:

- Network rehabilitation and interconnection
- Network expansion
- New heat sources
- Increased consumption during summer
- Domestic hot water

[1] Most customers are using electricity for hot water production. It has been difficult to raise the number of hot water connections significantly due to low electricity prices in Serbia (average price for electricity and district heating is 6 euro cents/kWh).

- District cooling
- Building-level investments and transition to consumption based billing

Specific technology options

[All figures of €/MWh are estimates and not final values]

- *Current production*: Current production costs €42/MWh (exluding distribution costs) and this is needed to be decreased. Installed power is 3GW with 300,000 connections. This is through 58 heat sources, more than 50 are on gas, and there is 1 MWh of CHP.
- *Large power plant waste heat connection:* This is the number one priority project for the utility. The expected price will be less than €25/MWh. €180 million total investment with a paypack period of less than six years. If prices to customers are decreased, as desired by the utility, then the payback period will be increased. Given the large-scale of the investment, the city will decide what type of project financing will be used. Current efficiency of the power plant is 29-30%, connecting the plant to Belgrade will increase this efficiency to 50%.
- *Solar thermal:* There is already a pre-feasibility study for solar thermal power which has been recently finalized. Operating costs would be €2-3/MWh. Good solar irraditiation, low temperatures of the network and low construction costs should mean solar thermal can be cheaper than in Nordic countries. Specific projects identified make solar thermal very feasible, and the city is interested in exploring other locations.
- *Small scale CHP:* With low electricity prices, it is only profitable with an incentive. Currently incentives for CHP do not exist above 10MW_{el}
- Waste incineration: Expected to be approximately €30/MWh
- *Biomass:* The local market for biomass is underdeveloped and the country mostly exports biomass. At currently levels it is €50/MWh but with an improved supply chain this could be lowered. Biomass could potentially replace current use of heavy fuel oil.
- *Geothermal:* The theoretical potential for geothermal is high. There is a good mapping of cities in Serbia, but in Belgrade temperatures are not high. This would require heating pumps, while now there are only small-scale heat pumps available.
- *Network interconnection:* Segregated networks mean some boilers are oversized – long-term interconnection required to ensure least cost supply and maximizing of low-cost renewables and waste heat sources
- *Network rehabilitation:* Network efficiency can be improved significantly though network replacement and leak detection.

- *Hot water connections:* Problem is technical and financial: existing buildings mean there is a lot of civil works needed just to connect buildings, furthermore flats are owned by individuals which can cause problems problem of ownership. Currently largest network doesn't have hot water connections. DH is competing against electricity which is approximately the same cost as DH. It is expected that the electricity price will increase, improving the business case of hot water connections.
- *District cooling:* Expected to be less than €35/MWh

Existing studies that can be built-upon

- The 2015-2025 Development Strategy of Beogradske elektrane
- Feasibility of waste heat connection to thermal power plant
- Pre-feasibility study for solar thermal
- Feasibility study of small-scale CHP
- Two pre-feasibility studies for biomass boilers at 5MW each.
- Some preliminary energy efficiency audits fo the system
- Early-stage study on district cooling
- Geothermal mapping

Stakeholders indicated that making these studies available will be important for the activties of the DES Initiative.

Additional studies required

Stakeholders agreed that the planned activities for the DES Initaitive and Belgrade of developing a 10 year master plan of actions, policies and investments to realise the strategy of Beogradske elektrane is very important. This plan would study in parallel the role of new heat sources, network interconnection, network rehabilitation and network expansion. Development of such a master plan would require significant resources but could be jointly developed between UN Environment, Beogradske elektrane, the city of Belgrade and partners to the the DES Initiative.

Beogradske elektrane indicated that some studies and projects could be undertaken by the private sector under a public-private partnership.

Stakeholders identified the following additional studies as important:

- A thermographic imaging of Belgrade's DH network. This was last done in 2010, with aeroplanes, the update today would be done with drones. Could be undertaken in parallel with any mapping exercises by the BEA.

- Study on air pollution and the role DH expansion could have in reducing air pollution
- Study for rehabilitation of the network
- Further feasibility studies on: solar thermal, biomass, district cooling
- A study on interconnecting different networks within Belgrade
- Study on financing possibilities for Belgrade.
- Study evaluating building efficiency measures, district heating expansion and transition to consumption based billing

Stakeholders agreed that priority steps in the short-term should be: examination of existing studies, data and policies; development of a detailed work plan and financing strategy for development of a master plan; demonstration project identification; and thermographic imaging of the network. Following this, studies on interconnection and priority network rehabilitation can be undertaken as a priority.

III. Next steps

BEA

Following the successful kick-off workshop to its BEA engagement, the City of Belgrade supported by its BEA partners is tasked with the following next steps:

1. Finalization of hiring process and onboarding of local technical advisor to the city,
2. Formation of the Local BEA Coordinating Group as well as their first meeting (mid-December): the main focus of the first meeting will be to present the objectives and activities proposed for the work plan under the BEA and receive feedback and insights from the group,
3. Development of the draft work plan for further review and comment by the Coordinating Group,
4. Revision and approval of the work plan by end of January/mid-February.

DES Initiative

The DES Initiative, the City of Belgrade and Beogradske elektrane will undertake the following short-term steps:

1. Jointly develop a detailed and costed work plan of activities that will deliver a master plan of actions, policies and investments to realise Belgrade's Development Strategy for district heating.

2. Identify with the city of Belgrade a demonstration project to be developed.
3. Establish a schedule for international training workshops in Belgrade, inviting other cities from Serbia to learn from the activities of the Belgrade and the DES Initiative and to transfer best-practice to Serbia from international champion cities and partners.
4. Establish a multi-stakeholder coordination group in Belgrade to provide input to assessments, policy design and strategy and to receive training.
5. Identification of joint activities with the BEA

Appendix

Agenda of kick off workshop, 31/10/2016

List of participants

Presentations

Pictures at the workshop