Building Efficiency Accelerator

SUMMARY REPORT FOR THE BEA ESKIŞEHIR PROJECT LAUNCH EVENT AND STAKEHOLDER WORKSHOP

November 2016

Building Efficiency Accelerator (BEA)

Report prepared by WRI Turkey Sustainable Cities

TABLE OF CONTENTS

Authors:

Dr. Meltem Bayraktar - Building Efficiency Technical Adviser, WRI Turkey Sustainable Cities
meltem.bayraktar@wri.org

Tuğçe Üzümoğlu - Project Assistant, WRI Turkey Sustainable Cities
tugce.uzumoglu@wri.org

WRI TURKEY SUSTAINABLE CITIES BRIEF

WRI Turkey Sustainable Cities produces sustainable solutions to urban transportation and development problems.

WRI Turkey Sustainable Cities is a non-governmental civil society organization that focuses on practical applications of sustainable urban transport and development, based on global research and on-the-ground experience. Cities designed with these principles in mind can provide safer, healthier, and more fulfilling lives for all their residents. In turn, these cities can reap the social, economic, and environmental benefits of sustainable urban development, transport and public spaces.

WRI Turkey Sustainable Cities is a member of the WRI Ross Center for Sustainable Cities network, which is a signature initiative of World Resources Institute (WRI) that works to make urban sustainability a reality. Global research and on-the-ground experience in Brazil, China, India, Mexico, Turkey and the United States combine to spur action that improves life for millions of people. WRI Turkey Sustainable Cities helps to build more holistic infrastructure for cities by emphasizing sustainable and equitable integrated transport, land use planning, and urban design. This approach allows us to influence on-the-ground planning, related policies, financing, and implementation. Our innovative research and practice bridges processes and policies through transit-led development to achieve sustainable communities that are livable, compact and safe for all.

Our expertise:

- Integrated Urban Transportation
  - Health & Road Safety Studies
  - Road Safety Audits and Inspections in Cities
  - Integrated Public Transportation
  - Low Carbon Transport Solutions: Walking & Biking
  - Clean Vehicles
- Integrated Urban Planning
  - Accessibility Analysis
  - Public Life and Public Spaces Studies
  - Sustainable Urban Mobility Plans
  - Transit-Oriented Development
- Urban Efficiency & Climate
  - Air Quality Assessments of The Low-Carbon Urban Mobility Solutions
  - GHG Emission Inventory and Global Protocol for Community-Scale GHG Emission(GPC)
  - Regulatory impact assessment on climate change's adaptation and mitigation measures for urban transport & urban development
  - Building Efficiency Projects

ENERGY EFFICENCY IN BUILDINGS

The building sector compromising homes, public buildings and businesses represent a major share of global energy and resource consumption. According to numbers published by IEA, residential, commercial and public services together with agriculture represented 37% of the total global final energy consumption in 2009 followed by industry (27%), transport (27%) and non-energy use (9%).

The findings of the 4th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) shows that at present, buildings contribute as much as one third of total global greenhouse gas emissions. Therefore, the efficiency in the building sector has become a priority for countries across the globe. In Turkey, the building sector represents the largest energy consumer sector accounting for 34% of the final energy consumption in 2014. In addition, buildings consume 49% of the electricity.

Source: Flickr, Benoit Colin/WRI

Architectural designs, construction practices, and technologies are needed today that minimize energy and resource use in buildings and optimize the benefits to people of high performance—cleaner air, more comfortable homes and workspaces, and lower utility bills. Efficient buildings—those that make highly productive use of natural resources—are vital to achieving sustainable development: They align economic, social, and environmental opportunities, creating so-called "triple bottom line" benefits.

- Economic development: energy costs could be burden for dwelling or business budget. Each additional $1 spent on energy efficiency avoids more than $2, on average, spent on energy supply investments.
- Social development: Nearly 70 percent of the world's population will live in cities by 2050. Efficient buildings can help improve the quality of life of millions of people because they are often higher-quality buildings, with greater comfort and improved indoor and outdoor air quality.
- Environmental sustainability: A study by the International Energy Agency (IEA) shows that, if implemented globally, energy efficiency measures in the building sector could deliver CO2 emissions savings as high as 5.8 billion tonnes (Gt) by 2050, lowering greenhouse gas emissions by 83 percent below the business-as-usual scenario.

Rapid rates of urbanization in much of the world will lead to an unprecedented expansion of the built environment. Buildings form the fabric of these rapidly growing urban landscapes. The choices being made today about how to build, design, and operate these buildings will affect urban services and livability for decades.

Efficient, high-performance, and productive buildings will be a major factor in creating sustainable cities, which, in turn, contribute to sustainable development goals at the regional and national level.

BUILDING EFFICIENCY ACCELERATOR (BEA)

In September 2011, United Nations former Secretary-General Ban shared his vision for making universal access to sustainable energy a reality by 2030. He launched Sustainable Energy for All (SE4All) as a global initiative that would mobilize action from all sectors of society in support of its three interlinked objectives.

- ensuring universal access to modern energy services
- doubling the share of renewable energy in the global energy mix
- doubling the global rate of improvement in energy efficiency

In support of the energy efficiency goals, SE4All catalyzed a public private collaboration platform between business and governments called "Global Energy Efficiency Accelerator Platform."

The partners of the platform are committing to contribute to expanded global actions to accelerate energy efficiency in buildings, lighting, appliances, district energy systems, industry and transportation areas.

The global platform define the common elements of each of the accelerators, such as governance, performance metrics, reporting requirements, commitment management, policies, resources and tools in general terms as well as public and private-sector financial support. The individual accelerators then focus on specific energy efficiency sectors.

The SE4All Building Energy Efficiency Accelerator (BEA) platform mobilize support for city, state, regional and national governments to speed up adoption of best-practice policies and the implementation of building efficiency projects. Private sector leaders are actively participating, as are financial institutions, civil society organizations and international organizations. These partners will facilitate collaborative, multi-stakeholder workshops to discuss current action, and define and prioritize policy and project commitments.

The major barriers to efficient buildings are institutional and behavioral rather than technical or financial. The BEA aims to break down these barriers by increasing global and cross-sector collaboration.

BEA engages with cities through a menu of policy options and key actions based on the needs of the city and the activities that the partnership can provide in each location. Cities will prioritize policies and activities, and the partnership will connect them to resources and engagement around those priorities.

The BEA process of engagement in a city includes support for:

- Assessing and prioritizing locally-appropriate policies and actions
- Implementing actions, through matching needs with expertise, resources and tools
- Tracking action and documenting progress, and sharing lessons learned

BEA ESKİŞEHİR PROJECT

On June 6th, 2016, Andrew Steer, WRI President & CEO, Jennifer Layke, Global Director of WRI's Energy Program and Prof. Yılmaz Büyükerşen, Metropolitan Mayor of Eskisehir, announced in Copenhagen at the Global Green Growth Forum-3GF Conference that Eskişehir has been selected to the BEA network to become a Deep Dive City with other five cities among 23 candidates(Belgrade, Serbia, Bogota, Colombia, Coimbatore, India, Dubai, United Arab Emirates, Medellín, Porto Alegre, Brazil, Rajkot, India, Riga, Latvia, Santa Rosa, Philippines, Shimla, India and Tshwane , South Africa - 11 other cities).

Deep dive cities (Belgrade, Bogota, Da Nang, Eskişehir and Raijot) will cooperate with WRI and more than 30 international organizations within a multi-stakeholder partnership and they will be offered tools for gathering input from stakeholders and for prioritizing policies. Through a series of trainings, webinars, regional conferences, and other support, each city will improve their capacity to act and create a deeper engagement with interested parties. In addition, they will work in-depth with the partnership in an intensive multi-stakeholder process

WRI Turkey Sustainable Cities will assist Eskişehir Metropolitan Municipality in realizing its BEA commitments in the field of building efficiency:

1. Implement one enabling policy

2. Implement one demonstration project

3. Create a baseline of building energy performance, track and report annual progress, and share experiences and best-practices with other governments

EXPANDED WORKSHOP SUMMARY

Building Efficiency Accelerator Eskişehir Project Launch Event and Stakeholder Workshop was jointly hosted by WRI Turkey Sustainable Cities and Eskişehir Metropolitan Municipality. The workshop was held on **October 27, 2016** in **Eskişehir, Turkey**. The workshop drew about **100 participants**, representing a nice mix of center and local governments, NGOs, construction firms, building materials manufacturer, technology firms, energy efficiency consultants and academia.

The workshop's main objectives were to bring together experts from different sectors to discuss sectoral approaches to building energy efficiency, to understand current energy efficiency standards and applications, to develop a set of recommendations on urban energy policies that Eskişehir Metropolitan Municipality can employ in the near-term within the scope of BEA project and to create an environment to build collaborations.

Workshop started with an Opening Ceremony which featured an opening speech by **Prof. Yılmaz Büyükerşen**, the Mayor of Eskişehir Metropolitan Municipality and an address by **Dr. Ömer Faruk Günay**, Eskişehir Deputy Governor; and a keynote speech by **Arzu Tekir**, the Director of WRI Turkey Sustainable Cities.

Prof. Yılmaz Büyükerşen, Mayor of Eskişehir, welcomed the participants to the workshop. In his speech, he mentioned the urgency of actions to deal with natural resource depletion. He highlighted the importance of increasing the share of renewable energy source in the global

energy mix. He also emphasized the importance of creating local policies to improve building efficiency and expressed Municipality's determination to take actions in order to solve urban problems and promote urban energy efficiency.

Dr. Ömer Faruk Günay, Eskişehir Deputy Governor, pointed out the importance of building energy efficiency and raising public awareness on related issues. He mentioned the local actions taken in Eskişehir and he explained that when there are sources the citizens will take responsibility. He also pointed out that the ultimate aim should be sustainable living and the contribution from renewable sources should be increased.

Arzu Tekir, the Director of WRI Turkey Sustainable Cities introduced WRI Turkey Sustainable Cities organization, its vision and mission. Mrs. Tekir introduced WRI Turkey's main work activities that are focusing on Integrated Urban Transportation, Integrated Urban Planning and Urban Efficiency & Climate. Mrs. Tekir also explained the central laws and regulations regarding building energy efficiency and the role of local governments at code implementation. Mrs. Tekir emphasized the importance of capacity building at municipality level and how BEA project would contribute to the development of local policies. And Mrs. Tekir also briefly mentioned the main objectives of the workshop and informed about the agenda.

After the Opening Ceremony the workshop started.

Presentations and discussions at the workshop were divided into two main sessions.

1. Session

This session included individual presentations given by invited speakers representing different stakeholder groups in energy efficiency field including NGO, local and center government, academia and private sector. The presenters touched a number of issues including global initiatives, current state in Turkey, codes and regulations, certification systems, case studies and implementations.

Eric Mackres, WRI Building Efficiency Manager, talked about the Sustainable Energy for All (SE4All) initiative launched by United Nation General Secretary, and Mr. Mackres also introduced Global Energy Efficiency Accelerator Platform announced by SE4All. Mr. Mackres explained the six individual Accelerators that target buildings, lighting, appliances, district energy systems, industry and transportation areas. Mr. Mackres also clarified Building Efficiency Accelerator – BEA, its objectives, function, participants, partners, and supporters.

Following that, **M. Korhan Koyuncu**, Eskişehir Metropolitan Municipality Department Head of Urban Renewal, introduced the mission, vision and responsibilities of the department. Mr. Koyuncu also explained the aim, current state of Eskişehir Risky Area Project which is developed under Urban Renewal and Development Programme. Mr. Koyuncu also mentioned followed building codes and steps that are already taken.

Succeeding Mr Koyuncu's presentation, **Bahadır Sercan Gümüş**, Assistant Specialist at Ministry of Energy and Natural Resources, gave an overview of the Turkey's Current Energy Profile and highlighted the energy consumption share of building stock. Mr. Gümüş also talked about current building energy codes and government policies. Mr. Gümüş mentioned energy efficiency programs, education programs, building audit programs, measurement and verification actions, awareness raising campaigns that are planned and implemented by Ministry of Energy and Natural Resources.

Dr. Meltem Bayraktar, Building Efficiency Technical Adviser at WRI Turkey Sustainable Cities, briefly talked about the energy efficiency principles in buildings. Dr. Bayraktar pointed out the influential factors and stressed the importance of integrated design and building operation. In addition, Dr. Bayraktar talked about BEA Eskişehir project aims, approach, implementation works, planned ecosystem and coordination actions.

Tuğçe Üzümoğlu, BEA Project Assistant at WRI Turkey Sustainable Cities, talked about Current State Assessment Study regarding Building Efficiency Accelerator in Turkey project. Mrs. Üzümoğlu explained the adopted methodology including workshops, face to face meetings, literature research and gap analysis. She also point out that Accelerating Building Efficiency Eight Actions for Urban Leaders report prepared by WRI which would be taken as guideline for further studies.

Following that, Engin Işıltan Secretary General at the Turkish Green Building Council (CEDBİK), informed participants about ÇEDBİK and talked about green building concept, classification, green building certification systems and criteria.

Dr. Özlem Bahadır from Center for Energy, Environment and Economy at Özyeğin University, introduced research projects that the Center is currently involved in a variety of fields including nano technology, radiative transfer, industrial implementations, sustainable buildings, districts&cities and sustainable financial solutions. Dr. Bahadır expressed that Center's aim is to develop project with a from-idea-to-product approach and 3 different EU Horizon 2020 and EU 7th Framework Programme projects the center is involved in this direction.

Last but not least, **Bjarne Schultz**, Senior Director of Product Portfolio Management at DANFOSS talked about the energy efficiency goals of Europe, Denmark and Turkey, while emphasizing the importance of energy efficiency and renewable energy to reach climate and energy targets. Mr. Schultz then explained district heating systems which are among the most significant energy efficiency methods and showed examples of using this technique in Turkey and around the world.

2. Session

This session of the workshop included a panel discussion on urban energy efficiency actions required to be taken by Eskişehir Metropolitan Municipality and the content of the Action Plan that will be developed within the scope of the Eskişehir BEA project. Dr. Meltem Bayraktar, Building Efficiency Technical Adviser at WRI Turkey Sustainable Cities first gave an overview of the Eskişehir BEA project including objectives, and methodology. Later, Dr. Bayraktar introduced the three main discussion topics and subtopics with brief remarks and facilitated a guided, interactive discussion with the participants.

Participants were asked to provide their opinions on the topics listed below. In addition, they were also invited to make general comments and suggestions and share their positive and negative experiences in similar projects. Participants were also encouraged to comment on possible contributions of stakeholders and institutions that should be included in this project network.

Workshop Discussion Topics

1. **Setting up urban energy efficiency targets and developing / adopting /implementing building energy efficiency regulations, codes and guidelines for the City of Eskişehir**
   - 1.1. Preparing locally-adapted mandatory/voluntary energy efficiency regulations
   - 1.2. Integrating energy efficiency into current urban plans and targets
   - 1.3. Preparing informative guidelines or adapting and implementing current guidelines
     - 1.3.1. Energy efficient design and retrofit guideline
   - 1.4. Integrating energy efficiency into urban renewal projects
   - 1.5. Creating green building public procurement strategies
   - 1.6. Creating energy efficient building operating guidelines for municipality buildings
2. **Pilot project**
   - 2.1. What would be a good pilot study/ building for Eskişehir to demonstrate the committed BEA actions
     - 2.1.1. New building design/construction or existing building retrofit
     - 2.1.2. Building type (hospital, school, municipality buildings etc.)
     - 2.1.3. Designing a public building retrofit camping targeting municipality buildings
     - 2.1.4. Implementation of awareness campaigns on municipality buildings with municipality staff
     - 2.1.5. Development and implementation of energy efficiency management strategies in municipality buildings
3. **Additional Actions**
   - 3.1. Planning and delivering training programs for capacity building
     - 3.1.1. Technical capacity building programs for municipality staff
     - 3.1.2. Technical training for local experts
     - 3.1.3. Training programs for builders and workforce
   - 3.2. Awareness raising campaigns
     - 3.2.1. Campaigns targeting owners and developers
     - 3.2.2. Campaigns targeting building occupants
   - 3.3. Creating financing mechanism to support energy efficiency investments
     - 3.3.1. Developing green loan schemes with financial institutions
     - 3.3.2. Developing incentive programs
     - 3.3.3. Consulting for national and international funding opportunities

Comments and Suggestions Shared by Participants

Comments and suggestion shared by participants are listed hereunder:

Policy development and implementation:

1. Urban renewal projects should be planed taking into consideration sustainability targets.
2. The integration of the urban transformation projects developed in Eskişehir with the BEA project will contribute to urban energy efficiency a great deal, appropriate policy mechanisms are required.
3. It is important that the urban transformation projects are developed with the urban planning and urban design point of view (sustainable transformation of neighborhoods), not as demolition and renewal of individual buildings
4. Urban transformation projects are sometimes realized against the will of the citizens. It is important to develop stakeholder-citizen participation in energy efficiency studies. The development of citizen engagement strategy will be beneficial for local government.
5. Central regulations governing urban regeneration should be prepared and updated with the support of the relevant NGOs and with the contribution of the local municipalities based on their experiences.
6. The Law of Transformation of Areas under Disaster Risks-6303 regulates the planning of neighborhood level urban transformation projects by local municipalities however there is a need for regulations regarding individual building renewals.
7. New Building Energy Efficiency Control Form and other available guides could be adopted for new building development projects in Eskişehir.
8. It should be benefitted from the experiences of the local municipalities regarding implementation of energy efficiency actions in the preparation of Urban Design Guidelines by the Turkish Ministry of Environment and Urbanization.
9. Some of the obligations imposed by the national building codes are enforced by municipalities, but in many cases there are practical difficulties due to lack of capacity in municipalities.
10. The requirements regarding preparation and application of the building maintenance plans and the approval of the program by the municipalities is included in the national Building Energy Performance Regulation but it is not applied mostly. Control mechanism is required.
11. Regulation on Building Energy Performance requires buildings with more than 2,000 m2 of usable space to be equipped with a central heating system; for buildings more than 20,000 m2, various ways to use renewable energy and cogeneration facilities are defined. Municipalities should inspect building and system plans carefully before issuing related building permits.
12. Monitoring the impact of energy efficiency investments and sharing the results of example projects will be help to promote energy efficiency actions.
13. Consideration should be given to the establishment of the energy management systems in existing buildings and to the fact that the buildings are built in accordance with the ISO2001 energy management system infrastructure.

14. To ensure energy efficiency in public buildings, municipalities should organize awareness campaigns and also lead by example.
15. In the case of public procurement, it is necessary to consider both investment cost and operational costs. Life cycle cost analysis should be taken as a criterion.
16. The super-city project planned in Eskisehir, run by the Ministry of Environment and Urban Planning provides a certain technical infrastructure in urban building energy efficiency. The project outputs could be assessed and adopted for BEA.
17. Building Energy Performance Certificates need to be inspected more effectively by municipalities.
18. There is a need for co-operation between municipalities and chambers of architects and engineers in the process of issuing Energy Performance Certificates.
19. In addition to basic building envelope insulation work, other technological and scientific solutions should be implemented as energy efficiency measures.
20. The CO2 emissions due to the production of building materials should be taken into account and the use of local materials should be encouraged.
21. Active participation of the citizens is important to achieve success in energy efficiency projects, therefore awareness-raising activities should be considered. Return-on-investment and payback time of EE projects should be shared with public, too.
22. EU Member States are now targeting near zero-energy buildings and we should set similar targets in our own legislation and make necessary updates.
23. Establishing an energy management unit in the Eskişehir Metropolitan Municipality woud be beneficial.
24. It will be useful to evaluate the geothermal energy potential of Eskisehir, and to create regional geothermal maps and assess district heating potential.
25. In architectural and engineering faculties, curriculums should be updated to include energy efficiency in buildings.

Pilot study:

26. If the pilot project is chosen as a public building belonging to the Eskişehir Metropolitan Municipality, the project will progress rapidly with public resources and support, and will serve as a model for building residents and visitors and will contribute to the awareness raising.
27. If the project priority is to promote energy efficiency practices throughout the city, it will be useful to pick a residential building for renovation as the pilot study.
28. Designing a renovation camping for buildings on a selected existing street would contribute to the awareness raising and would set a good example to roll out ambitious renovations.
29. A training facility or science center could be selected as pilot project so that the building itself could serve as a laboratory where energy efficiency opportunities are introduced to the visitors.

30. If adequate funds are available, a family house, a 5-10 storey apartment building and a complex building such as a hospital or shopping mall could be renovated together and the results and experiences could be compared.
31. As a pilot study, a Nearly Zero Energy Neighborhood could be developed and the new buildings could be built mostly with local materials.
32. Eskişehir Metropolitan Municipality could lead by example via implementing energy efficiency practices in municipality buildings.
33. Municipalities could develop initiatives to raise awareness (establishing training programs, organizing workshops, developing awareness campaigns, etc.) that will contribute to create demand for building energy efficiency practices.
34. If renovation works are planned in existing buildings, first, building base-case should be established, monitored and analyzed. The building should also be monitored closely (minimum 1 year) after the renovation is completed. It is also important that the monitoring data is accessible and available to the public.

Finance:

35. Nowadays, most developers aim to reduce construction cost to a minimum but while doing that they are also compromising on construction quality and energy efficiency. New financial incentive mechanisms are required. (Construction fee and tax exemption/reduction)
36. Mechanisms should be developed to translate the CO2 emission reduction achieved in existing buildings as a result of energy efficiency improvement efforts into a financial value.
37. The municipalities must actively take part in communicating the legal issues to the citizen as intermediary between the citizen and the state, rather than serving as a financer.
38. Credit programs and incentives should be developed and municipalities should support citizens in becoming aware of these programs.

NEXT STEPS

This workshop helped advance the planning of the Eskişehir BEA project. The main goals now are to evaluate the results of the workshop, to design building efficiency policies of Eskişehir Metropolitan Municipality, to implement new strategies, to track the progress, and to disseminate the outcomes.

First of all, the Workshop Summary Report including the conclusions and recommendations will be prepared and shared with all participants in November 2016.

Next, a BEA project working group with representation from Eskişehir Metropolitan Municipaliy's related departments will be established for the duration of the project in November 2016. The working group will play a critical role in helping formulate guidelines and timelines, developing project action plan and ensuring implementation of the project plan and overall success of the project.

In December, BEA Advisory Board, which will work closely with the project working group will be established to offer insight, expert advice and recommendations on BEA Eskişehir project goals and actions. Advisory Board will include members from multiple organizations in the

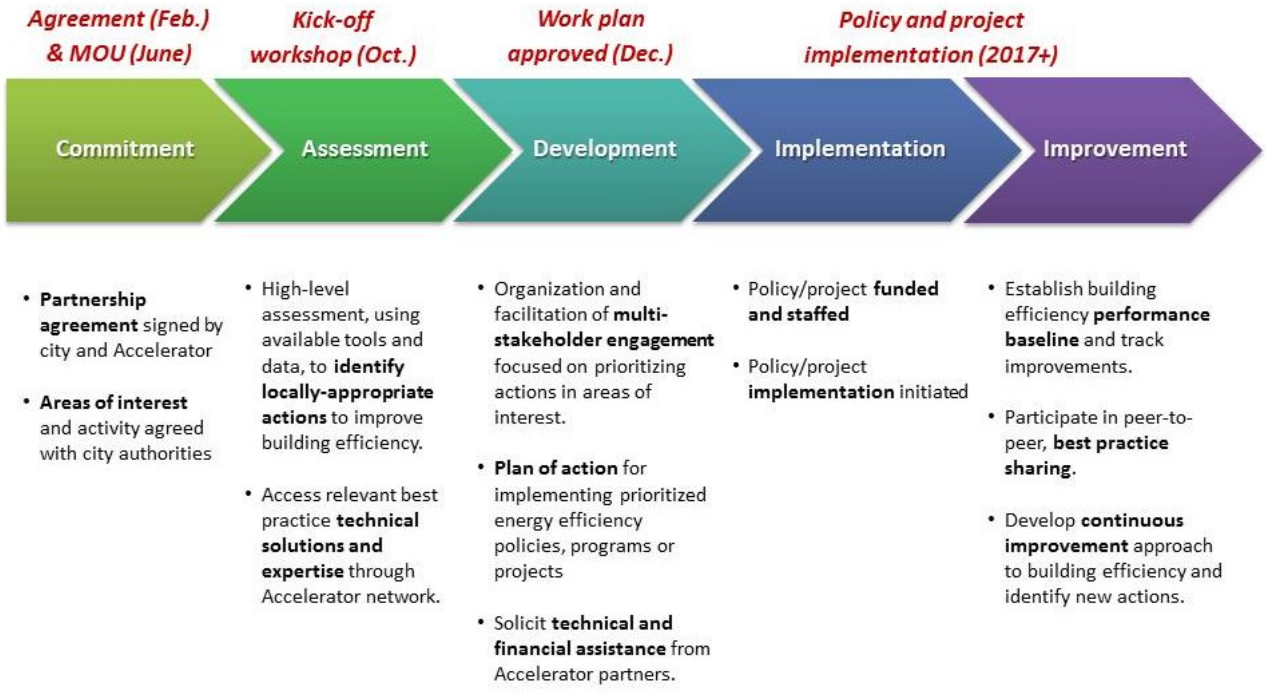
building energy efficiency field such as national and local governments, civil society organizations, design and construction professionals, real estate developers, investors, material and appliance manufacturers, technology firms, energy efficiency experts, academics.

In January 2017, the working group will assess the policy options discussed during the workshop with the steering of the Advisory Board, evaluate the requirements and the current situation and prepare an 18 month work plan by determining the most appropriate policy options for Eskişehir. Details will be clarified and implementation guidelines will be prepared so that the selected policy option can be realized successfully.

In addition, a pilot project will be developed within the scope of the BEA Eskişehir project by the Eskişehir Metropolitan Municipality with an aim to demonstrate leadership to the sector and other stakeholders. The details of the pilot study will be clarified in work plan, in the light of the opinions expressed by the workshop participants.

Implementation of the action plan regarding policy option and pilot study is planned to start at the beginning of 2017.

The general flow chart of the project is given below.



ANNEX A: WORKSHOP AGENDA

Accelerating Building Efficiency in Eskişehir
Building Efficiency Accelerator Launch Event and Stakeholder Workshop

27th of October, 2016 (9:00-16:00), Thursday
Rixos Hotel, Eskişehir

9:00-9:15	**Registration**
9:15-9:45	**Opening Speeches** Prof. Dr. Yılmaz Büyükerşen-Eskişehir Metropolitan Municipality, Mayor Dr. Ömer Faruk Günay-Eskişehir Governorship, Deputy Governor Arzu Tekir - WRI Turkey Sustainable Cities, Director
09:45-10:15	**Introduction to SE4ALL and BEA** Eric Mackres, WRI, Building Efficiency Manager
10:15-10:30	**Eskişehir Metropolitan Municipality's Urban Renewal Projects** M. Korhan Koyuncu-Eskişehir Metropolitan Municipality, Head of Department of Urban Renewal
10:30-11:00	**Building Efficiency Policies in Turkey** Bahadır Sercan Gümüş- Ministry of Energy and Natural Resources , Assistant Specialist
11:00-11:15	**Coffee Break**
11:15-11:25	**Energy Efficiency in Buildings and BEA Eskişehir** Dr. Meltem Bakyraktar, WRI Turkey Sustainable Cities, Building Efficiency Technical Adviser
11:25-11:35	**Current State Assessment of Building Efficiency Accelerator in Turkey** Tuğçe Üzümoğlu-WRI Turkey Sustainable Cities, Project Assistant
11:35-12:00	**Green Building Certification Systems in Turkey** Engin Işıltan-Turkish Green Building Council, Secretary General
12:00-12:30	**Building Efficiency Implementations on Public Buildings** Dr. Özlem Bahadır-Center for Energy, Environment and Economy, Senior Researcher
12:30-13:00	**Urban Energy Efficiency Methods** Bjarne Schultz-DANFOSS, Senior Director
13:00-14:00	**Lunch**
14:00-15:30	**Action Plan and Project Roadmap Panel**
15:30-16:00	**Summary and Conclusion**

ANNEX B: ATTENDEE LIST

No	Name	Institution	Unit/Title	Stakeholder Category
1	Galip Demirel	Eskişehir Osmangazi University-Rectorship	Directorate Of Construction And Technical Works	Academician
2	Cengiz Türe	Anadolu University	Ecology	Academician
3	Dr. Özlem Bahadır	Özyeğin University, Center For Energy, Environment And Economy	Expert İnvestigator	Academician
4	İsmail Ekmekçi	İstanbul Ticaret University	Industrial Design	Academician
5	Cem Gökdere	Eskişehir Osmangazi University-Rectorship	Electrical Engineer	Academician
6	Nazan Edeer	Ministry Of Environment And Urbanisation	Branch Office Of Projects	Central Government
7	Uygur Kınay	Ministry Of Environment And Urbanisation	Energy Efficiency	Central Government
8	Sema Çelik	Ministry Of Environment And Urbanisation	Architecture	Central Government
9	Bahadır Sercan Gümüş	Ministry Of Energy And Natural Resources	General Directorate Of Renewable Energy	Central Government
10	Mehmet Akar	BEBKA	Investor Relations Expert	Development Agency
11	Selma Güder	Eskişehir City Council	Agricultural Engineer Msc	Local Government
12	Aylin Şener	Eskişehir Metropolitan Municipality	Department Head Of Environmental Protection	Local Government
13	Korhan Koyuncu	Eskişehir Metropolitan Municipality	Department Head Of Urban Renewal	Local Government
14	Soner Özcan	Eskişehir Metropolitan Municipality	Head Of Parks And Gardens Department	Local Government
15	Prof. Dr. Yılmaz Büyükerşen	Eskişehir Metropolitan Municipality	Mayor	Local Government
16	Ahmet Atsabar	Eskişehir Metropolitan Municipality	Parks And Gardens Department	Local Government
17	Duygu Özen	Governorship Of Eskişehir	Assistant Manager Of Editorial Department	Local Government
18	Mustafa Ünal	Eskişehir Metropolitan Municipality	Assistant Secretary General	Local Government
19	Melek Ceviz	Eskişehir Metropolitan Municipality	Branch Office Of Support Services	Local Government
20	Aytaç Ünverdi	Eskişehir Metropolitan Municipality	Branch Office Of Transportation Planning	Local Government
21	Gülsüm Tekin	Eskişehir Metropolitan Municipality	Branch Office Of Transportation Planning	Local Government
22	Osman Ercan	Eskişehir Osmangazi University	Civil Engineer	Local Government
23	Zafer Örmeci	Eskişehir Metropolitan Municipality	Civil Servant	Local Government
24	Mihrac Sezer	Odunpazarı Municipality	Construction Control Directorate	Local Government
25	Ahmet Cem Özel	Odunpazarı Municipality	Construction Control Directorate	Local Government
26	Ata Aydın	Odunpazarı Municipality	Construction Control Directorate	Local Government
27	İlknur Işın	Odunpazarı Municipality	Construction Control Directorate	Local Government
28	Didem Aydınmakina	Eskişehir Metropolitan Municipality	Department Head Support Services	Local Government
29	Sinem Koç	Governorship Of Eskişehir	Department Of Planning	Local Government
30	Mahir Altuntaş	Eskişehir Metropolitan Municipality	Department Of Public Planning And Urbanisation	Local Government
31	Fadime Aydın	Eskişehir Metropolitan Municipality	Department Of Public Planning And Urbanisation	Local Government
32	Alper Tümay Tök	Eskişehir Metropolitan Municipality Directorate Of Technical Works	Department Of Technical Works	Local Government

33	Serkan Özünegüven	Eskişehir Metropolitan Municipality Directorate Of Technical Works	Department Of Technical Works	Local Government
34	Dr. Ömer Faruk Günay	Governorship Of Eskişehir	Deputy Governor City	Local Government
35	Erdem USLU	ESKİ	Electrical Engineer	Local Government
36	Özcan Özdemir	Tepebaşı Municipality	Energy Management	Local Government
37	H. Senem Acar	Eskişehir Metropolitan Municipality	Engineer	Local Government
38	Murat Aksu	Tepebaşı Municipality	EU Project Manager	Local Government
39	Baturay Yenilmez	Tepebaşı Municipality	EU Project Unit	Local Government
40	Sinem Sarıçoban	Tepebaşı Municipality	EU Project Unit	Local Government
41	Fırat Bilgili	Eskişehir Metropolitan Municipality Directorate Of Technical Works	Head Of Department Of Technical Works	Local Government
42	Abdullah Atlıer	Eskişehir Metropolitan Municipality	Mechanical Supply	Local Government
43	Nur Süllü	Eskişehir Metropolitan Municipality Councillor	Member	Local Government
44	Levent Özbunar	Eskişehir City Council	Member	Local Government
45	Sinem Tavlak	Eskişehir Metropolitan Municipality	Parks And Gardens Department	Local Government
46	Özlem Önk	Eskişehir Metropolitan Municipality	Project Development	Local Government
47	Seyhan Çubukcu Soukup	Eskişehir Metropolitan Municipality	Project Development	Local Government
48	Hale Kargın Kaynak	Eskişehir Metropolitan Municipality	Project Development	Local Government
49	Oğuzhan Macit	Eskişehir Metropolitan Municipality	Project Development	Local Government
50	Meral Silpagar	Eskişehir Metropolitan Municipality	Project Development	Local Government
51	Mehmet Engin Çakmak	Eskişehir Metropolitan Municipality	Secretary General	Local Government
52	Tamer Entok	Eskişehir Metropolitan Municipality	Unit Head Of Waste Management	Local Government
53	Sercan Kara	Eskişehir Metropolitan Municipality	Urban Renewal	Local Government
54	Hisnü Kaptan	Odunpazarı Municipality	Vice Chairman	Local Government
55	Dr. Meltem Bayraktar	WRI Turkey Sustainable Cities	Building Efficiency Technical Advisor	NGO
56	Dilara Göker	Turkish Green Building Council(ÇEDBİK)	Business Development	NGO
57	Hande Dönmez	WRI Turkey Sustainable Cities	Communications Specialist	NGO
58	Birsen Bakır	EVD Energy Management	Deputy General Manager	NGO
59	Arzu Tekir	WRI Turkey Sustainable Cities	Director	NGO
60	Tülin İnayet	Turkish Green Building Council(ÇEDBİK)	Executive Assistant	NGO
61	Engin Işıltan	Turkish Green Building Council(ÇEDBİK)	General Secretary	NGO
62	Eric Mackres	WRI	Manager	NGO
63	Bülent Erkul	Chamber Of Civil Engineers (İMO)	Member	NGO
64	Zeliha Aziret	Chambers Of Electrical And Electronics Engineering (EMO)	Member	NGO
65	Berrin Çiftçi	Chamber Of Civil Engineers (İMO)	Member	NGO
66	Naci Işıklı	EYODER	President	NGO
67	Tuğçe Üzümoğlu	WRI Turkey Sustainable Cities	Project Assistant	NGO
68	Yunus Metin Kaya	Kayalar Mühendis Ltd.	Civil Engineer	Private Sector
69	Süha İnce	LAL Değerleme	Consultant	Private Sector
70	Oğuz Soylu	Soylu Enerji	Energy	Private Sector

71	Murat Toprak	Danfoss	Energy Efficiency	Private Sector
72	Ayşe Akkaya	BASF Türk	Energy Efficiency	Private Sector
73	Caner Demir	Demir Enerji	Energy Efficiency	Private Sector
74	Volkan Eykaya	Atlas Enerji	Energy Etude	Private Sector
75	Gürcan Özgün	Acıbadem Hospital	Engineer	Private Sector
76	Murat Buzluca	ÇİMSA	Executive Acts	Private Sector
77	İbrahim Ayşakar	Divan Hotel	Executive Acts	Private Sector
78	Engin Ataman	Esgaz	General Manager	Private Sector
79	Cem Kartal	Atlas Cert	Manager	Private Sector
80	Rıfkı Çolak	SIEMENS	Mechanical Engineer	Private Sector
81	Özgür Önpeker	ESPAR	Operations Assistant Manager	Private Sector
82	H. Sefa Ertan	Şişecam Düzcam	Product Manager	Private Sector
83	İlkay Kara	Has Beton	Quality Manager	Private Sector
84	Bjarneschultz	Danfoss	Sales	Private Sector
85	Feza Hokkacı	İZOCAM	Sales Marketing	Private Sector
86	Sencer Erten	Danfoss	Technical	Private Sector
87	Hüsamettin Tanatar	Hü-Ta Elektrik		Private Sector
88	Murat Hayal	SIEMENS		Private Sector
89	Sevtap Yasin	Sentez Consultancy		Private Sector
90	Meral Gence	Eskişehir Osmangazi University	Architecture	Student
91	Turgut Gence	Eskişehir Osmangazi University	Architecture	Student
92	Ahmet Yazıcı	Eskişehir Osmangazi University	Computer Engineer	Student
93	Ömer Uluç	Turkish Air Forces Command	Military Officer	Turkish Armed Forces
94	Barış Durgut	Turkish Air Forces Command	Planning Department	Turkish Armed Forces
95	Banu Gürlek		Architecture	
96	Alper Ucungan	EDH	Engineer	
97	Şükran Kutlu	EDH	Executive Acts	
98	Turgay Cırıl	Kılıçoğlu Tile	Product Manager	
99	Olcay Sevik	Anadolu University (Arinkom)	Projects Coordinator	
100	Yalçın Kaya			
101	Koray Konu			

ANNEX C: PHOTOGRAPHS FROM THE EVENT


YEŞİL BİNA SİSTEMİ
VE
DEĞERLENDİRME SİSTEMLERİ
ÇEDBİK-KONUT