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# Energy Efficiency Knowledge Portal for Central Asia

## Final Report



Submitted by ICF International

April 2014

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Final Report

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## Acronyms

CAEELP	Central Asia Energy Efficiency Learning Portal
CAEESP	Central Asian Energy Efficiency Support Program
CAREC	Regional Environmental Center for Central Asia
COMO	Covenant of Mayors Office
EECDP	Energy Efficiency for Clean Development Program
EU	European Union
GEF	Global Environment Facility
IFC	International Finance Corporation
LWA	Leader with Associates – funding mechanism
MINT	Ministry of Industry and New Technologies
UNDP	United Nations Development Program
UNECE	United Nations Economic Commission for Europe
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
US	United States
USAID	United States Agency for International Development

## I. Introduction

ICF International (ICF) recently completed implementation of the **Energy Efficiency Knowledge Portal for Central Asia** Leader Award, under ICF's current Leader with Associates Cooperative Agreement with USAID entitled "Energy Efficiency for Clean Development Program," (EECDP) No. AID-OAA-L-11-00003-00. The project, administered by USAID/Central Asian Republics, is centered on creation of an online **Central Asia Energy Efficiency Learning Portal (CAEELP)** as a platform for the dissemination of energy efficiency best practices from the region. The Portal includes an interactive educational platform and database of energy-efficient equipment to help establish a community of practice within Central Asia. This interactive informational resource brings together suppliers and consumers of energy efficiency knowledge, equipment, technologies, and best practices in the region.

This final report provides an overview of the project after its expiration and completion on March 31, 2014, highlighting the final status of the CAEELP. It starts with a description of project inception, and continues with brief sections on project start-up, initial obstacles, concept paper development, stakeholder outreach, and development of a sustainable platform through a partnership with the Central Asia Regional Environmental Center (CAREC).

## II. Project Inception

Throughout the implementation of the *Central Asian Energy Efficiency Support Program (CAEESP)* – an Associate Award conducted under the same EECDP cooperative agreement – the CAEESP team repeatedly noted the interest of stakeholders throughout the region in the reports, tools, and documents produced by the project. Roughly halfway through the two-year program, the CAEESP team developed the idea to create an online platform to share the lessons learned and tools with a larger audience throughout the region. The Central Asian region, due to its relatively high Internet penetration and low population density, is a prime region to design and implement this project. The region itself is vast, with a shared Russian language and well-developed experts in each of the individual countries. CAEESP already had a solid infrastructure of in-country and regional experts available to develop not only the functionality of the Portal, but also the content. The EECDP LWA mechanism allowed for a small partner project to be funded, which leveraged the human and material resources of the CAEESP. The ICF team was able to maximize the available resources on development of the Portal due to already existing resources from CAEESP. The proposal was developed in conjunction with project partners across the region, and submitted to USAID in April 2013. After receiving approval in late April 2013, work on the CAEELP began in early May 2013.

## III. Project Start-up

In accordance with the work plan included in the project proposal, the first stage of project implementation was focused on (a) initial start-up and establishing communications between team members, (b) CAEELP concept paper development, (c) engagement of key stakeholders, and (d) preparing for the initial promotion of the Portal.

The initial task was to finalize the project team. During the proposal stage, Mary Worzala (CAEESP's Chief of Party) was named Activity Manager for the CAEELP. Two technical experts, Vitaliy Bekker and Andrey Dodonov, were named as the main technical officers and subcontractor/stakeholder liaisons, due to their existing relationships with regional partners and Russian language skills.

Much of the initial work was developing the scopes of work for the subcontractors that would work on the physical infrastructure of the Portal. Due to the complex functionality designed by the project team, neither the CAEESP nor CAEELP team would be able to complete the website development alone. API-Klima, a regional expert in developing online education courses, was selected due to their experience, as well as their geographic presence (Russia) and their shared language with the Central Asian stakeholders and counterparts. The focus of API-Klima's work was to design the individual functionality of the website and develop 1) the website map which would allow for individual user registration, 2) "open source" programming which allows users to upload content, and 3) case studies, training videos for the installation of energy-efficient technology, and other informational materials. API-Klima was also tasked with the creation of a live social network (similar to LinkedIn) specifically for energy efficiency professionals in Central Asia. The most complex of their tasks was to program the live course section of the Portal, which would allow contemporaneous live broadcast of courses from a single location to all registered participants on the Portal throughout the region. During the course, the functionality was designed to allow participants to either send in questions through the Portal, or send text messages through the website to the presenter to answer in real time. API-Klima's expertise in programming these types of websites was critical to the successful completion of the Portal.

A second local subcontractor was also selected to complete the design work of the Portal, following API-Klima's programming and functionality development. The Kazakh firm Hoster.kz was selected following an exhaustive search of the local market to complete the final design of the website, with the intent of assuring that the Portal would be well organized, appealing, and modern. Much of Hoster.kz's work was unable to begin until after API-Klima's initial development was complete.

## IV. Initial Obstacles

Following the initial drafts of API-Klima's website development, the CAEELP team coordinated with Hoster.kz to begin the front-end design of the Portal. However, problems arose with the Hoster.kz team, which quickly revealed that they did not have the necessary in-house expertise to complete the design of such a complex and multi-faceted web portal. Unfortunately, due to internal staffing changes within the company, the in-house expertise which had been confirmed at the proposal stage was no longer available. Hoster.kz quickly withdrew their availability, and ICF immediately revoked the contract put in place without paying for any work that was not completed.

In order to meet the necessary time schedules, and keep up with API-Klima's pace of portal development, the CAEELP team was forced to very quickly determine an acceptable replacement for Hoster.kz. The initial procurement within Kazakhstan revealed that Hoster.kz was the most developed and experienced firm working in this area, so the search for a replacement was turned to the broader region to attract the necessary talent. Through API-Klima, CAEELP identified Webstores LTD as a replacement firm which had both the in-

house expertise and Russian language skills required to complete the project. ICF quickly contracted Webstores LTD and they began their work with API-Klima to design and produce the final format and layout of the Portal.

## V. Concept Paper Development

An early task was to prepare the detailed CAEELP concept paper, which would be used as a basis for developing the Terms of Reference for the Portal. The Concept Paper described the components of the Learning Portal, including a social networking platform, the equipment database, information sharing, and other aspects. The API-Klima team prepared a draft of the Portal concept, which was then reviewed by the ICF team, commented on and revised. The final Concept Paper was completed in early June 2013.

One important component of the Portal is to improve the knowledge-sharing experience by linking users via a peer-to-peer social network and to initiate personal communications and discussion between members. Live collaboration between trusted users of the Portal is the most effective way to rate energy efficiency decisions and equipment. The learning portal has been designed to incorporate a user's social network.

The energy-efficient technologies and equipment database is also an important component of maintaining steady growing interest in CAEELP. The Concept Paper set out a design for the Portal to virtually link users that have had both positive and negative experiences with equipment and applications. The design enabled users to share their experiences through reviews and a rating system, as well as via best practices.

## VI. Stakeholder Outreach

While the subcontractors were engaged in the physical infrastructure of the Portal (under the CAEELP team's close guidance), the project team (including Mary Worzala, Vitaliy Bekker, Andrey Dodonov, and four university interns) continued to work to develop local and regional support and publicize it to a wide suite of stakeholders who would contribute to and benefit from the Portal. The four main stakeholder categories are the private sector, universities, government entities/associations, and international organizations. Each has a different goal regarding their participation, as described below.

### A. PRIVATE SECTOR

#### Equipment Suppliers/Manufacturers

The primary interest of equipment suppliers/manufacturers in the Portal is the opportunity to present their energy efficiency information materials to a broad audience of stakeholders. To avoid the Portal from being used as free advertising space, the Portal was designed in a way that requires any equipment manufacturer or supplier to upload a full case study of their equipment. Other members can provide their own feedback, along with case studies of the equipment if they had a particular positive or negative experience. This allows sharing of not only available technology of interest to energy efficiency professionals, but also provides a common space for all interested parties to share their experiences using the selected equipment.

Discussions were initiated with manufacturers and suppliers of energy-efficient equipment that subsequently became key stakeholders in the energy efficiency database. The CAEELP team also began to conduct market research on suppliers of energy-related equipment who are active in Central Asia. The research included suppliers of heating and electricity supply equipment, industry technological process equipment, metering and control equipment, and lighting. A list of suppliers was created and a plan for follow-up activities was developed.

Meetings were held with key local suppliers to enlist their support in the beta-testing phase of the equipment database. Several companies agreed to cooperate with the CAEELP team to beta-test the energy efficiency database feature of the Portal by entering their equipment information and working jointly with CAEELP on any technical solution development that would arise. The companies that took part in this phase included Danfoss, Grundfos, Honeywell, Schneider Electric, Buderus, and TA Hydronics.

### **Companies Seeking Energy Efficiency Expertise**

Private sector representatives also expressed strong interest in CAEELP and confirmed the existing gap in energy efficiency knowledge-sharing, including frequently updated news about legislation updates, case study publications, and open discussion. The largest industrial companies in the Central Asian region, including ENRC, Kazakhmys, Kazphosphate, Samruk-Kazina, as well as medium and small-size private sector companies are actively looking for sources of sustainable on-line technical assistance. They particularly expressed interest in the possibility of information exchange through person-to-person networks, which is a key part of the Portal.

### **Financial Institutions**

Before the project's approval, discussions were held with financial institutions regarding various possibilities for involvement. Interest from this sector is primarily driven by the opportunity to increase energy efficiency lending portfolios in the region through participation in knowledge sharing, as well as to present their current activities and financing possibilities via this type of web platform. Major partners identified were the European Bank for Reconstruction and Development, Asian Development Bank, Eurasian Development Bank, and the IFC. All of these financial institutions are present in Central Asia, are currently operating or planning energy efficiency financing programs, and plan to cooperate moving forward with CAREC after the end of the ICF-led program.

## **B. UNIVERSITIES**

Many universities throughout the region have both technical and policy programs focused on energy efficiency. Through discussions with these universities, the CAEELP team discovered a fervent interest in creating an opportunity to participate in a dialogue across the region regarding energy efficiency education. The universities were consistently enthusiastic about their participation, and offered a suite of in-kind contributions such as free space to post pre-recorded webinars, technical experts to develop and film webinars for upload onto the Portal, as well as experts to conduct live webinars in real-time, including interactive participation from regional participants engaged through the Portal. Each university expressed their interest and intent to integrate the Portal's depth of knowledge into their energy efficiency curriculum. Finally, each university had an enormous amount of content which they committed to upload to the Portal. The content includes case studies, data sets,



tools to calculate energy savings through particular energy efficiency interventions, and academic articles. In this manner, the information provided by an individual university is available to all participants throughout the region. One of the top priorities of CAEELP is to involve universities as core users of the Portal to aid in the development of a sustainable knowledge sharing platform, with representation in each country of the region. To date, agreements to support the Portal have been reached with Nazarbayev, Al-Farabi State, Seyfullin Agro-Technical, and Eurasian Innovative Universities in Kazakhstan. Initial discussions have also been held at the project development stage with the Kyrgyzstan Power Engineering University to begin to regionalize the program. Most of the mentioned institutions have their own energy research centers, which are financed by governmental and private funds. All of them expressed their commitment to join CAEELP and use it as a resource for their students. They are eager to participate in the various on-line training courses on energy, energy efficiency, resource saving and other related topics. They also agreed that the CAEELP would be a useful resource for research and development news, articles, and publication of case studies. A key aspect of the sustainability plan for CY 2014 and CY 2015 is to strengthen the relationship between the Portal and the selected universities, who intend to integrate the Portal into their core curricula.

### C. GOVERNMENT AND ASSOCIATIONS

Outreach to government and association stakeholders was conducted to explore the interests and participation opportunities for this sector in the Portal. In particular, the Ministry of Industry and New Technologies (MINT) expressed their support for the Portal and interest in continuing the dialogue following its launch. An initial suggestion from MINT, which continues to be developed, is utilization of the Portal by MINT's certification of municipal associations, which are to be trained in energy efficiency policies and procedures (for both the municipal and industrial sectors). Other local and regional associations, such as the Energy Auditors' Association, saw obvious areas of overlap and developed an ongoing relationship with the CAEELP team, and later with the Central Asia Regional Environmental Center (CAREC). Since the initial development phase of the Portal takes place in Kazakhstan, the main government stakeholders there were informed about the CAEELP. Brief promotion was conducted with MINT and other energy efficiency oriented stakeholders, including the Energy Auditors Association of Kazakhstan, the business union "Atameken", KazEnergy Expertise, Kazakhstan Association of Modern Innovative Technologies and Equipment, and others.

Various possibilities for the design and use of CAEELP were presented to representatives of the Kazakh municipal sector. Potential usefulness of the platform for these officials is not only in knowledge sharing, but also access to the energy efficiency technologies and equipment database. A strong need for this information was expressed by municipal representatives who were approached in this phase.

There were two main outreach strategies used with municipalities during the project:

- I. Working directly with akimats (municipal governments) in Kazakhstan, training for akimat energy officials was provided in three cities in the Pavlodar oblast: Pavlodar, Ekibastuz and Aksu. During the course of the training, participants were informed about the upcoming CAEELP and consulted on their views regarding its usefulness.

2. In cooperation with Covenant of Mayors Office (COMO) East, CAEESP participated in the COMO event in Astana and CAEELP was presented. The main target audience was the mayors of cities in Kazakhstan who were attending the event.

CAREC has strong connections with the Ministries of Environment in each of the Central Asian countries, making them uniquely suited, post project completion, to continue to develop the Portal in collaboration with host-country government counterparts throughout the region.

## D. INTERNATIONAL ORGANIZATIONS

Lastly, the CAEELP team encountered robust interest from international organizations working throughout Central Asia. In particular, United Nations Development Programme (UNDP), United Nations Economic Commission for Europe (UNECE), and the Covenant of Mayors confirmed their support and intention to participate through the hosting of individual courses. Each of these organizations also expressed their intention to continue working in Central Asia on energy efficiency issues. They perceived the Portal as a prime vehicle to publicize their events and attract attention to their energy efficiency projects throughout the region due to the ease of reaching large groups of interested stakeholders which could participate in their programs. UNDP/Kazakhstan additionally expressed their desire to be among the first core users of the platform. UNDP has many publications which have come from their work in energy in the region and have agreed to share these resources by uploading them or linking them to the Portal site. The UNDP project “Removing barriers to energy efficiency in municipal heat and hot water supply,” agreed to contribute their library of case studies to CAEELP. UNDP also agreed to publicize this resource among their regional offices in Central Asia, which they will begin as a part of CAREC’s upcoming marketing campaign.

UNECE and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) were informed about CAEELP during an international conference on energy efficiency financing held in Almaty in April 2013 under the framework of CAEESP. The program received strong commitment from both parties, with the possibility to link this platform to a similar existing platform created for Southeast Asia. The UNESCAP platform covers energy legislation and regulations and energy equipment with a focus on Southeast Asian countries, but does not contain the interactive user component that will be part of the CAEELP.

In the framework of Energy Week, COMO East arranged a regional event on June 28, 2013 in Astana. CAEESP participated in this event and presented CAEELP to different local and international stakeholders including: several akimats of Kazakhstan cities; the National Chamber of Housing and Communal Service of the Republic of Kazakhstan; governmental stakeholders from Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan; representatives from European Commission; and representatives of international projects such as the *Sustainable Energy Program for Central Asia: Renewable Energy Sources-Energy Efficiency (GIZ)*, and others.

Table I

## Learning Portal Stakeholder Outreach

Institution	Contact Person	Commitment to Learning Portal
<b>Universities</b>		
Al Farabi/Columbia University, Global Classroom	Rafis Abasov	Possible recording facilities; participate in online courses; encourage students to participate in courses and social network
Nazarbayev University	Diyar Tokmurzin	Possible recording facilities; participate in online courses; encourage students to participate, publication of their R&D work case studies, content development
Seyfullin Agro-Technical University	Laura Sadukova	Participate in online courses, encourage students to register, host online courses in conference facilities; content development
Eurasian Innovative University	Victor Melnikov	Participate in online courses; encourage students to participate; host online courses; content development
Kyrgyzstan Power Engineering University	Irina Zakharova	Participate in online courses; encourage students to participate, establishing communication with Kyrgyz engineering society, content development
<b>Equipment Suppliers</b>		
Danfoss	Eugeniy Aushev	Ability to record own webinar, participate in online courses and EEDB; encourage designers and construction companies to participate
Schneider Electric	Alexander Berejnoj	Ability to record own webinar, participate in online courses and EEDB; encourage designers and construction companies to participate
Grundfos	Elena Sitnikova	Ability to record own webinar using own classroom, participate in online courses and EEDB; encourage designers and construction companies to participate
Honeywell	Yuriy Mironov	Participate in online courses and EEDB; encourage designers and construction companies to participate
TA Hydronics	Alexander Kalashnikov	Participate in online courses and EEDB; encourage designers and construction companies to participate
Buderus	Dmitriy Podolskiy	Ability to record own webinar using own classroom, participate in online courses and EEDB; encourage designers and construction companies to participate

<b>Government and Associations</b>		
Ministry of Industry and New Technology	Serik Turchekenov	Precise collaboration to be determined but interested and supportive of Learning Portal
Energy Auditors Association	Dauren Tokbayev	Participate in online courses, encourage energy society and specialists to register and participate in social network
<b>International Organizations</b>		
CAREC	Henry Wyes	Plan and participate in online courses, encourage local and regional energy society and specialists to join social network; will be administrator of Portal after completion
UNECE/ESCAP	Oleg Dzoubinski; Sergei Tulinov	Encourage regional stakeholders to participate; link to policy and legislative database being developed by ESCAP.
Covenant of Mayors	Shakirova Tatyana	Strategic platform for marketing activities: To encourage different stakeholders to participate, encourage regional stakeholders to participate.
UNDP	Alexander Belyi, Irina Gorynova	Participate in online courses, encourage different stakeholders to participate; link to case study library and reports developed under UNDP energy efficiency programs

## VII. Sustainable Platform

The CAEELP team was well aware during the initiation of the project that developing the Portal through a partnership with an established, permanent, regional organization was essential to its long-term success. Due to CAEESP's ongoing relationship with the Regional Environmental Center for Central Asia (CAREC), the CAEELP team selected CAREC as the most appropriate regional partner. CAREC quickly saw the overlap between CAEESP, CAEELP, and their ongoing programs and was eager to participate in the development of the Portal as well as the stakeholder outreach component of the project. CAREC was an excellent choice in a sustainable local partner – they are based in Almaty, with country offices in each of the Central Asian countries. CAREC has significant in-house expertise on environment and energy issues, and an existing and robust network of contributors and partners. In addition, the board of CAREC is composed of the Ministries of Environment from each of the Central Asian nations. As the CAEELP program continues to grow in complexity and increase in users, CAREC is in an excellent position to use its networks to further publicize and develop the Portal.

CAREC representatives (Nailya Mustaeva and Henry Wyes) were involved from the beginning of the CAEELP project in all decision making processes and provided their regional perspectives on all aspects of the Portal development. A Memorandum of Understanding (MOU) between CAREC and CAEELP was developed which defines the commitments of both parties in the Portal project. CAREC has agreed to maintain the

Portal for a minimum of three years. During this period, CAREC will report on key indicators to USAID and other potential funders of the Portal. An outreach and promotion strategy to be implemented by CAREC was jointly developed prior to turning over the Portal to CAREC.

## A. PORTAL DEVELOPMENT

The CAEELP team quickly determined that the development of the physical infrastructure of the Portal was a more complex task than originally envisioned when the project was proposed to USAID. For that reason, USAID granted a no-cost extension to continue project activities through March 31, 2014 to allow sufficient time for API-Klima and Webstores LTD to complete their development and design of the Portal. Additionally, this no-cost extension provided additional time for the project team to continue its stakeholder outreach and content management.

The prolonged period of performance coincided with the close-out of the CAEESP project, which provided the human resources for the CAEELP project. With CAEESP no longer operating in-country, the CAEELP team would lose its on-the-ground presence in Central Asia. The solution to this problem was reached in collaboration with CAREC, which offered enthusiastically to take over all in-country elements of the portal development. These elements included the management of the subcontractors (in collaboration with ICF) to ensure that the final Portal was delivered according to the specifications outlined in the concept note. Through ICF's discussions with CAREC, it was clear that they had the necessary expertise and interest in-house to take over the processing of finalizing the Portal. In order to ensure that CAREC devoted sufficient resources and time to the program, ICF provided a modest amount of funding to CAREC through a Purchase Order to cover the time of their experts. Following the processing of the no-cost extension of the overall CAEELP project, ICF issued the purchase order and CAREC began implementation of their Scope of Work, which had three main components:

**Component 1: Content update and liaison with stakeholders in the area of energy efficiency and climate mitigation.** The primary objective of Component 1 was to ensure that the Portal content is continually updated with specific information provided free of charge by participatory stakeholders. Examples of deliverables included pre-recorded video lectures, complete case studies of equipment, and presentations given through the Portal.

**Component 2: Promotion of the Portal.** The primary objective of Component 2 was to promote the Portal to regional stakeholders and explore future funding opportunities to continue to expand the current scope of the project. Examples of deliverables included presentations to stakeholders regarding the functionality of the Portal, and a project proposal submitted to a potential donor.

**Component 3: Project coordination.** The primary objective of Component 3 was to ensure the overall coordination and monitoring of project activities. The corresponding deliverable is the final report, submitted after all activities under Components 1 and 2 are completed. Portions of that report have been included in the remainder of this document.

While USAID's involvement with the CAEELP project expired on March 31, 2014, CAREC will continue to grow both the functionality of the Portal and the spectrum of stakeholders participating in the project. CAREC's in-country and regional presence, recognized name,

and existing relationships with key stakeholders has proved instrumental in both the content development and promotion of the Portal.

## B. PORTAL FUNCTIONALITY

During the first quarter of CY 2014, ICF and CAREC worked to fully transfer the website created by ICF's subcontractors onto CAREC's permanent server. This process started in the middle of February and was completed by March 3. The relocation allowed CAREC to update and make changes to the website, as necessary, through their dedicated IT Specialist following the Portal's transfer from Webstores LTD. The website is currently fully operational at [www.caeelp.org](http://www.caeelp.org) and offers users the following features:

- Opportunity to create pages, news, media content (images, photos, videos), with tags/labels;
- Event organizer (calendar of events, meetings, participants, speakers, sponsors);
- Marketing tools (newsletters, news subscription, subscription plans, certificates);
- Trading management projects (CRM), i.e. interaction of users and distributors;
- Electronic catalog (orders, suppliers, prices);
- Resources - Media storage, galleries, polls, petitions, websites directory, job;
- Reports on statistics site visits and others;
- Ability to integrate the portal with social networks, including facebook, twitter, YouTube; and
- Ability to register users, who can post articles and materials and participate in the events.

*Technical characteristic features provided by CAREC:*

Windows server 2008 sp1 (4-bit) processor Intel Xeon 3.1 Ghz 8 Gb RAM. Below are the webserver specifications:

- System Windows NT WEB-SRV 6.1 build 7601
- Apache/2.2.25 (Win32) PHP/5.2.6 mysql/5.0.51a

Additional software was installed as follows:

- Apache/2.2
- MySQL 5.0.51
- PHP 5.2.6
- Zend Optimizer v. 3 or higher for PHP 5.2
- Zend guard loader for PHP 5.2)
- Additional PHP modules

## C. CONTENT SUPPORT

### Presentations

The content of the Portal was updated by three additional thematic presentations developed in close consultation with leading national experts. Presentation summaries are provided below:

#### 1. Promoting energy-efficient lighting in Kazakhstan

The presentation, developed using materials from a UNDP/GEF project, contains basic information about lighting and covers the status of existing lighting technology in Kazakhstan. It also presents new technologies currently used in Europe and the US which may be replicated in the country. Assessments show there is a high potential to save energy through new lighting technologies, including energy-efficient bulbs and residential/street devices. For example, energy-efficient lighting devices can save 65 percent of the energy typically used for street lighting. In buildings, there is significant energy savings potential in offices (40 percent), schools (75 percent), industrial buildings (40 percent), and homes (80 percent). The savings potential is supported with pilot projects in three schools in Kazakhstan, which also show how energy efficiency contributes to climate change mitigation and reduction of CO<sub>2</sub>. Estimations show that the pilot projects resulted in the reduction of 10,191 CO<sub>2</sub>-equivalent.



#### 2. Opportunities to deploy renewable energy sources in Kazakhstan (Pavlodar city case study)

The presentation was prepared by a well-known national expert, Veleriy Zhiltsov. It contains information about wind potential and specifies a wind atlas with key regions in Kazakhstan that could accumulate strong wind waves and be used as a source of wind energy. It is estimated that the country possesses both solar and wind energy potential. For example, the solar energy potential in Pavlodar city is around 160 trillion kW hr. The volume of wind energy capacity in Pavlodar is 532 340.25 mln kW hr. Key messages of the presentation can be summarized as follows:

- Wind atlas of Kazakhstan shows that the country possesses significant accumulated resources of wind energy; and
- 10 out of 14 regions in Kazakhstan have limited access to power energy, and wind energy might be used as a smart solution.

#### 3. Overview of integrated energy solutions company (Danfoss) and heating systems of buildings

The presentation describes the type of equipment that helps reduce the amount of heat consumption in apartment buildings and private homes, given the specific weather conditions. It also describes the specifics of the installed equipment.



## Case Studies

The Portal was expanded with thematic case studies including the following:

- Energy efficiency in public health service
- Future of alternative energy
- Energy-saving technologies for "Ergonomics"
- Renewable energy sources (RES) for education
- Energy efficiency in schools
- Energy efficiency in every home
- Autonomous supply of energy farming in Uzbekistan
- Water for the people's service
- Irrigation ditches as an energy source for the village
- A joint approach to solving energy problems
- Improving the energy efficiency of a multi-story building in Ashgabat
- Energy saving in housing
- Modernization of the heating system in buildings
- Automatic control system of heat consumption in private buildings
- Energy efficiency in Karaganda

## Video Lectures

The following video links were posted on the Portal:

1. Video lecture "Integrated energy saving solutions for the heating systems in buildings." Speaker: Evgeniy Aushev, Head of Department, Danfoss. Direct link: [https://www.youtube.com/watch?v=imE\\_mpasV5E&feature=youtu.be](https://www.youtube.com/watch?v=imE_mpasV5E&feature=youtu.be)
2. Video lecture "Individual flat-based heating systems in buildings." Speaker: Evgeniy Aushev, Head of Department, Danfoss. Direct Link: <https://www.youtube.com/watch?v=RDmqZL-ziYk&feature=youtu.be>
3. Video lecture "Integrated Water Resource Management as a part of energy efficiency [water pumping]." Direct link: <http://www.youtube.com/watch?v=SDWkCEH5zi4&feature=youtu.be>

## D. OUTREACH AND STAKEHOLDER FOLLOW-UP

### Search Engines and Website Visibility

The Portal currently sits on CAREC's server and they retain all hosting and ownership rights. The website was mapped to include regional domains from all Central Asian countries; for example, users in Tajikistan can access the portal through [www.caeelp.tj](http://www.caeelp.tj) (instead of .com or .org), which allows the site to turn up more frequently in search engine searches in each of the countries. CAREC ensured that all 8 domain names used in the Central Asian countries were in place, including caeelp.com; caeelp.kz; caeelp.ru; caeelp.kg; caeelp.uz; caeelp.tj; caeelp.org; and caeelp.info.



CAREC also used Internet search engine optimization (SEO) to attract visitors to the Portal. Main activities related to SEO for the Portal were the following:

- Increasing the number of links to internal pages;
- Searching every page's keywords and page description;
- Increasing the number of inbound links to portal;
- Placing a site in the search directories and article directories;
- Posting messages in guest books, forums, comments on sites similar topics;
- Participating in groups and social networks; and
- Registering bookmarking services, as well as other methods.

At present, references to the CAEELP can be found on 47 technical web-catalogues and directories. This presence helps users to find the portal among other web sites more efficiently and rapidly.

### Stakeholder Presentations

In order to introduce the Portal and its content, the project team leveraged a number of events dedicated to learning and energy related issues to make PowerPoint presentations. The target audience included students, energy experts, business, and private sector stakeholders dealing with energy efficiency and renewable energy in Kazakhstan.

#### *I. MDP/ Global Classroom on Sustainable Development*

The first presentation of the CAEELP took place in Almaty at the Al-Farabi Kazakh National University as a part of the *MDP/ Global Classroom on Sustainable Development* on **February 13, 2014**. The event was organized by the MDP/Global Classroom on Sustainable Development Center, which invited Mr. Yegor Zbrodtko, a CAEELP expert, as a guest presenter. The purpose of the educational event was to discuss energy efficiency and energy saving opportunities in the Central Asian region. It was attended by 20-25 students representing different areas of the university (International Relations, Geography, Business and Economics, etc.) and was provided as part of their preparation as future mid and high level officials in diverse sectors. Mr. Zbrodtko's presentation, "Central Asian Energy Efficiency Learning Portal and its contribution to EE and ES in CA," introduced participants to the Portal and its features, including advantages and opportunities for users of different target groups (government, business, NGO, educational institutions).



## 2. Silk Way Model United Nations

The second presentation of the CAEELP took place on **February 15, 2014** at Al-Farabi Kazakh National University, Faculty of Journalism as a part of “Silk Way Model United Nations” – a university-level model United Nations conference. Entitled “Renewed and strengthened global partnership for the development of least developed countries,” the model UN ECOSOC simulation was organized through the combined efforts of the MDP/Global Classroom on Sustainable Development Center, Al-Farabi KazNU, US Embassy in Kazakhstan, UNDP, UNIC, and KIMEP. The purpose of the presentation, “Central Asian Energy Efficiency Learning Portal and its contribution to the development of least developed countries,” was to introduce participants to the CAEELP, its functionality, and advantages and opportunities for users of different target groups (government, business, NGO, educational institutions). Mr. Yegor Zbrodtko, invited as a guest speaker, targeted the presentation towards representatives of government agencies (representatives of the Ministry of Education and Science), international organizations, US embassy and UN representatives (UNDP, UNIC), and educational entities (Al-Farabi KazNU, KIMEP, International School “Miras,” etc.). It was attended by approximately 40-50 people.



## 3. Targeted Stakeholder Meeting

A third presentation was given after the Portal was launched on March 3<sup>rd</sup>, and fully operational and functional. This targeted stakeholder meeting, “Learning web-resources for energy efficiency and sustainable use of energy in Central Asia,” took place on **March 4, 2014** in a conference room at the Hotel Kazzhol. The purpose of the meeting was to introduce the CAEELP and LED-CA.net web-resources. Speakers presented functional capabilities for both resources and discussed opportunities for users of different target groups (government, business, NGO, educational institutions).

Ms. Nailya Mustaeva, CAREC’s *Climate Change and Sustainable Energy Program Manager* opened the event with the first presentation. She gave an overview of the climate and energy-related projects conducted by CAREC as well as the progress and results of the implementation of these projects in Central Asian countries. The next presentation on LED-CA.net web-resource was presented by Mr. Alexey Kobzev, *CAREC Project Expert*. He discussed the low carbon development in Central Asian countries and contribution of the LED-CA.net web-resource to this progress.



The meeting continued with the presentation of Mr. Yegor Zbrodtko, CAEELP Project Expert, who gave a short overview on prerequisites for the development and implementation of the CAEELP as well as current trends in the energy sector of Central Asian countries. This included barriers faced in moving towards efficient and sustainable use of energy. After the presentations, the participants took part in a discussion of the possibilities and development opportunity of the CAEELP.com and LED-CA.net web-resources.

#### 4. AWARE Project

The 4th presentation to promote the CAEELP took place on **March 12, 2014** at the conference room of CAREC. This was presented as part of an event organized by the EU/CAREC project, “Targeted awareness-raising for enhanced European Union-Central Asia partnership” (AWARE Project). The presentation on the CAEELP and LED-CA.net web-resource was introduced by Mr. Alexey Kobzev, CAREC Project Expert. The CAEELP presentation introduced the Portal and LED-CA.net web-resources to the meeting participants. Mr. Alexey Kobzev presented an overview of website functions and opportunities for the resources users of different target groups. He also touched upon the key role of the energy sector in economic growth and technological progress. The presentation focused on the ways in which the CAEELP project can contribute to the development of a sustainable energy sector in Central Asia.

#### 5. AWARE Project Multi-stakeholders’ Dialogue

Lastly, the fifth presentation of the CAEELP took place during the AWARE project multi-stakeholders’ dialogue in Almaty, “Kazakhstan on the way of sustainable development through “Green Economy,” at CAREC on **March 13, 2014**. The second day of the event was devoted to dialogue among the target group of representatives, mostly from the business sector, and energy efficiency sector experts. During the event, Mr. Alexey Kobzev introduced the CAEELP and LED-CA.net web-resources and their use for the targeted group (business), who expressed interest in becoming familiar with the Portal in greater detail.

#### Early Results

The outreach activities to introduce and discuss the CAEELP resulted in an increased number of visitors to the Portal. Over the second half of March (starting from the middle of the month when technical problems were resolved and statistic metering device installed), the portal had 38 visitors. The Portal includes a feature to access a detailed description of site data use and statistics, <http://hotlog.ru/viewstat?id=2348922&attempt=1>. The “Hot Log” button is located in the center of the web page bottom navigation bar. Below is a sample view, taken on April 8, 2014:

Websites: [Learning portal for energy efficiency in Central Asia](#). [ID: **2348922**]  

Learning portal for energy efficiency in Central Asia

Rating HotLog: **357**

Category [Science / Education](#) Section [of the](#)

PageRank:    Yandex CY: **0**

	Today 08.04.2014	Yesterday 04/07/2014	Week 31.03 - 06.04	Month March 2014	Only
<b>Visitors</b>	9 3	6	30 +57.9%	38	82
<b>Views</b>	47 41	6 -92.3%	239 +134.3%	194	438
<b>Sessions</b>	11 +5	6 -14.3%	46 +70.4%	48	100

## VIII. Conclusion

Due to the nature of the CAEELP scope of work, the majority of stakeholder outreach will continue to be conducted by CAREC following the expiration of the USAID-funded project through the LWA. The core function of ICF's program was to a) develop, create, and deliver the physical infrastructure of the portal to CAREC, b) engage in stakeholder outreach activities, in collaboration with CAREC, and c) prepare CAREC to fully engage with the fully suite of stakeholders once the portal was launched.

Through a combination of technical expertise provided by ICF and CAREC, and from IT experience provided by ICF's subcontractors API-Klima and Webstores LTD, the **Central Asian Energy Efficiency Learning Portal** is now currently functional and active. CAREC's intentions are to continually develop the Portal to meet the needs of its members. It is ICF's hope that our project through the EECDP LWA is only a first step in the future of the CAEELP.

