Final Project Report

SEMISE

“Support to Energy Market Integration and Sustainable Energy in the NIS”

Contract No: 2008/163-877

A project within the INOGATE Programme

Implemented by:
Ramboll Denmark A/S

In consortium with:
LDK Consultants S.A.
EIR Development Partners Ltd.
European Renewable Energy Council

April 2012
## FINAL PROJECT REPORT (Project Completion Report)

<table>
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<tr>
<th>Project Title:</th>
<th>Support to Energy Market Integration and Sustainable Energy in the NIS (SEMISE)</th>
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<tr>
<td>Contract No:</td>
<td>2008/163-877</td>
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<tr>
<td>Country:</td>
<td>Multi-country</td>
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<th>Date of Report</th>
<th>April 2012</th>
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<td>Reporting Period</td>
<td>19January 2009 – 18January 2012</td>
</tr>
<tr>
<td>Authors of Report</td>
<td>Bo Mikael Klinke &amp; Jozef Herzl</td>
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### CONTRACTING AUTHORITIES / MONITORS

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<th>Signature</th>
<th>Date</th>
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<td>Mrs. Marta NAVARRETE MORENO</td>
<td></td>
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<tr>
<td>EU Delegation Ukraine</td>
<td>Mrs. Olga SIMAK</td>
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This report has been prepared by the contractor. The findings, conclusions and interpretations expressed in this document are those of the contractor alone and should in no way be taken to reflect the policies or opinions of the European Union.
# TABLE OF CONTENTS

1. **PROJECT SYNOPSIS** ........................................................................................................... 5  
   1.1 PROJECT OBJECTIVES ........................................................................................................... 5  
   1.2 PLANNED RESULTS ............................................................................................................. 6  
   1.3 PROJECT ACTIVITIES .......................................................................................................... 6  
   1.4 GEOGRAPHICAL AREA TO BE COVERED ........................................................................... 7  
   1.5 TARGET GROUPS ................................................................................................................ 7  
   1.6 PROJECT MANAGEMENT ................................................................................................... 8  
   1.7 LOGISTICS AND TIMING ................................................................................................... 8  

2. **SUMMARY OF PROJECT RESULTS** .................................................................................... 9  
   2.1 RESULTS ACHIEVED BY THE PROJECT ............................................................................. 9  
      2.1.1 Results under Objective 1: Energy Market Convergence ............................................. 9  
      2.1.2 Results under Objective 2: Investment Facilitation ....................................................... 14  
      2.1.3 Results under Objective 3: Sustainable Energy .......................................................... 18  
   2.2 SUMMARY OF SEMISE ACTIVITIES IN EACH PARTNER COUNTRY .............................. 23  

3. **LESSONS LEARNT & RECOMMENDATIONS FOR THE FUTURE** .............................. 25  
   3.1 LESSONS LEARNT & RECOMMENDATIONS REGARDING THE AD HOC EXPERT FACILITY (AHEF) ........................................................................................................................................ 25  
   3.2 LESSONS LEARNT & RECOMMENDATIONS REGARDING THE PROJECT PREPARATION FACILITY (PPF) ............................................................................................................. 27  

**LIST OF ANNEXES** ................................................................................................................... 29  

ANNEX 1: FINAL AHEF REGISTRY ........................................................................................... 29  
ANNEX 2: FINAL PPF REGISTRY ............................................................................................. 29  
ANNEX 3: FINAL AHEF & PPF REGISTRY BY PARTNER COUNTRY ........................................ 29  
ANNEX 4: AHEF RESULTS IN ENERGY MARKET CONVERGENCE ...................................... 29  
ANNEX 5: AHEF RESULTS IN SUSTAINABLE ENERGY .......................................................... 29  
ANNEX 6: PPF RESULTS IN INVESTMENT ATTRACTION ....................................................... 29
## List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
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<tbody>
<tr>
<td>AHEF</td>
<td>Ad Hoc Expert Facility</td>
</tr>
<tr>
<td>CC</td>
<td>INOGATE Country Coordinator</td>
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<tr>
<td>CEER/ERGEG</td>
<td>Council of European Energy Regulators / European Regulators’ Group for Electricity and Gas</td>
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<tr>
<td>DCI</td>
<td>Development Cooperation Instrument</td>
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<tr>
<td>DSM</td>
<td>Demand-side management</td>
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<tr>
<td>EC</td>
<td>European Commission</td>
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<tr>
<td>EE</td>
<td>Energy Efficiency</td>
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<td>ESIB</td>
<td>INOGATE Project “Energy Saving Initiative in the Building Sector in Eastern Europe and Central Asia”</td>
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<td>ENPI</td>
<td>European Neighbourhood and Partnership Instrument</td>
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<td>ERRA</td>
<td>European Regulators Regional Association</td>
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<tr>
<td>ESCO</td>
<td>Energy Service Company</td>
</tr>
<tr>
<td>IFI</td>
<td>International Financial Institution</td>
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<tr>
<td>ITS</td>
<td>INOGATE Technical Secretariat</td>
</tr>
<tr>
<td>KE</td>
<td>Key Expert</td>
</tr>
<tr>
<td>KE1-EMC</td>
<td>Key Expert 1 for Energy Market Convergence</td>
</tr>
<tr>
<td>KE2-SEI</td>
<td>Key Expert 2 for Sustainable Energy Investments</td>
</tr>
<tr>
<td>KE3-SE</td>
<td>Key Expert 3 for Sustainable Energy</td>
</tr>
<tr>
<td>LFI</td>
<td>Local Financing Institution</td>
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<tr>
<td>LTJ</td>
<td>Long-term Junior Expert</td>
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<tr>
<td>LTS</td>
<td>Long-term Senior Expert</td>
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<tr>
<td>NIS</td>
<td>New Independent States</td>
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<tr>
<td>NKE</td>
<td>Non-key Expert</td>
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<tr>
<td>PC</td>
<td>INOGATE Partner Country</td>
</tr>
<tr>
<td>PP</td>
<td>Position Paper</td>
</tr>
<tr>
<td>PPF</td>
<td>Project Preparation Facility</td>
</tr>
<tr>
<td>RES</td>
<td>Renewable Energy Sources</td>
</tr>
<tr>
<td>SAP</td>
<td>Strategic Action Plan</td>
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<tr>
<td>SEMISE</td>
<td>INOGATE Project “Support to Energy Market Integration and Sustainable Energy”</td>
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<tr>
<td>SKPI</td>
<td>INOGATE-related project “Support to Kyoto Protocol implementation”</td>
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<tr>
<td>STJ</td>
<td>Short-term Junior Expert</td>
</tr>
<tr>
<td>STS</td>
<td>Short-term Senior Expert</td>
</tr>
<tr>
<td>TNA</td>
<td>Training Needs Assessment</td>
</tr>
<tr>
<td>ToR</td>
<td>Terms of Reference</td>
</tr>
<tr>
<td>WGMs</td>
<td>“Baku Initiative” Working Group Members</td>
</tr>
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</table>
1. Project Synopsis

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Support to Energy Market Integration and Sustainable Energy in the NIS (SEMISE)</th>
</tr>
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<tbody>
<tr>
<td>Contract Number</td>
<td>2008/163-877</td>
</tr>
<tr>
<td>Funding</td>
<td>ENPI-East Regional Action Programme 2007</td>
</tr>
</tbody>
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1.1 Project Objectives

The project entitled “Support to Energy Market Integration and Sustainable Energy in the NIS” (SEMISE) is part of the INOGATE Programme and is financed through the European Neighbourhood and Partnership Instrument (ENPI), under the ENPI-East Regional Indicative Programme 2007-2010\(^1\). The overall objective and specific objectives are set out below according to the Terms of Reference.

Overall objective

The overall objective of this project is to contribute to achieving the goals defined at the Energy Ministers’ conference held on 30 November 2006 in Astana, as well as any future objectives, which might be set out in this framework, particularly as regards energy market convergence, investment facilitation and the promotion of sustainable energy.

Specific Objectives

The specific objectives of the project are the following:

**Component A - Energy Market Convergence**

- Identifying the gaps and the obstacles impeding progress towards regional energy market convergence as well as ways of improving and accelerating the convergence process at regional and sub-regional levels, by contributing to supporting the development of stable and secure energy relationships between Partner Countries and between these and the EU, and by encouraging the adoption of compatible legislation and regulatory practices, common technical standards as well as statistical data collection and forecasting systems (in relation, for example, to energy demand and energy balance);

**Component B - Investment Facilitation**

- Supporting energy investments, notably by contributing to creating a more conducive business environment for investments, helping in the development of regional energy infrastructure interconnections, establishing collaborative links with energy companies, lending institutions and representatives of the business sector, in conjunction with the ITS, identifying project opportunities and making project preparation services available to financing institutions such as the EIB and the EBRD, while paying the highest attention to sustainable development considerations;

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\(^1\) While Central Asia is not formally targeted by the ENPI, the five Central Asian Republics of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan also benefit from finance available under this instrument, given the need to ensure consistency of actions within INOGATE. Additional resources are, nevertheless, provided to the Central Asian countries through the Development Cooperation Instrument (DCI), in the framework of the DCI Central Asia Regional Indicative Programme 2007-2010.
Component C: Sustainable Energy

- Promoting the development of sustainable energy policies and assisting the Partner Countries in their implementation, with a particular focus on the promotion of demand-side management, energy efficiency in all pertinent sectors, renewable energies, and the mitigation of the negative impact of energy-related activities on the environment.

1.2 Planned Results

In line with the directions provided by the partners of the INOGATE Programme, the Project is expected to achieve the following results:

- Progress towards greater harmonisation of policies, legislations and regulatory practices as well as energy investment frameworks in the Partner Countries and more generally, towards setting up of a more integrated energy market in the region;
- Steps forward in terms of institutional strengthening, awareness-raising and capacity development in key energy areas, including in regard to sustainability strategies, policy formulation, regulation and tariff setting, legislation drafting, energy efficiency development and energy auditing; and
- Facilitation of financing by the banking sector (regional or local) or international institutions, of energy-related infrastructure projects initiated by the public sector, energy companies and/or private investors, with a particular emphasis on energy efficiency, energy conservation, renewable energy projects and infrastructure of common regional interest (whenever possible with the available budget resources), through a project preparation facility.

1.3 Project Activities

The project is grouped into three components. The specific activities carried out for each component are detailed in chapters 2 - 4; however, the key task and sub-tasks have been set out below as the reference checklist of activities for the project.

Component A – Energy Market Convergence

- Task A1- Development of a collective Strategic Action Plan
  - Sub-task A1.2- Training Needs Assessment
  - Sub-task A1.3- Strategic Action Plan on removal of obstacles to Energy Markets Convergence
- Task A2- Design & Implementation of the Ad-Hoc Expert Facility
  - Sub-task A2.1- Development of the administrative procedures of the Facility
  - Sub-task A2.2- Launch and Implementation of the Facility
- Task A3– Institutional Development & Capacity Building
- Task A4– Co-operation & Co-ordination Activities

Component B – Investment Facilitation

- Task B1: Set up cooperation and contacts for investment attraction
- Task B2: Assessing the impact of the economic crisis
- Task B3- Feedback from both financing bodies and Partner Countries on the scope and mandate of the Project Preparation Facility (PPF)
- Task B4- Set up of the Project Preparation Facility (PPF)
• Task B5 - Energy projects opportunity review
• Task B6- Promoting the PPF & EE/RES investment opportunities
• Task B7- PPF implementation

Component C – Sustainable Energy
• Task C1- Development of a collective Strategic Action Plan
  - Sub-task C1.1- Position Paper on Sustainable Energy Policies
  - Sub-task C1.2- Training Needs Assessment
  - Sub-task C1.3- Strategic Action Plan on Sustainable Energy Development
• Task C2- Design and Implementation of the Ad-Hoc Expert Facility
  - Sub-task C2.1- Administrative Procedures of the Facility
  - Sub-task C2.2- Launch and Implementation of the Facility
• Task C3- Institutional Development and Capacity Building
• Task C4- Co-operation, Co-ordination and Awareness Raising Activities
  - Sub-task C4.1 Co-operation & Co-ordination Activities
  - Sub-task C4.2 Awareness raising activities (including events, publications, online information)
  - Sub-task C4.3 Networking for Sustainable Energy Promotion

1.4 Geographical area to be covered

The countries of the ENPI-East region and Central Asia who are active Partner Countries of the INOGATE Programme, i.e. Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Ukraine and Uzbekistan which are referred to as INOGATE Partner Countries (PCs), are the direct beneficiaries of the project. Turkey is an INOGATE Partner Country but not a direct beneficiary. This means that Turkey follows INOGATE activities i.e. (by attending INOGATE meetings), but is not eligible for specific technical assistance under the INOGATE Programme. Russia in turn retains its observer status with regard to the INOGATE Programme.

1.5 Target Groups

The direct beneficiaries of the SEMISE project were identified in the course of the inception period and include:
• all the national administrations/ministries and government agencies responsible for matters of energy, environmental protection and sustainable development as well as relevant regional and local authorities;
• energy regulatory bodies / associations
• energy companies / associations
• energy agencies
• energy service companies
• IFIs and local financing institutions (LFI) active in the INOGATE Partner Countries
• potential investors, private or public, with an interest to invest in energy projects in the INOGATE Partner Countries
• secondary targets may include research institutions, universities, NGOs and civil society.
1.6 Project management

Responsible body
The European Commission, Directorate General for Development and Co-operation - EuropeAid, Unit F3 – Regional Programmes Neighbourhood East – is in charge of project oversight and management from the EC viewpoint.

Steering aspects
The overall guidance of this Project is ensured by the INOGATE Country Coordinators and Working Group members including the appointed contact persons from the energy regulatory authorities. Country Coordinator and/ or Working Group meetings are used to discuss and to update, if necessary, the project's strategic orientations, to review project achievements, as well progress in the implementation of the Energy Road Map and other official directions, if applicable. At the level of each Partner Country, Country Coordinators and Working Group Members facilitates the implementation of the project (as they do for the other INOGATE initiatives) by liaising with relevant government authorities and disseminating information on conclusions reached and other project-related developments. Working Group sessions are organised at least once a year.

Core Project Team
The project had a core project team of three long-term key experts covering the three project components (i.e. energy market convergence, sustainable energy investments and sustainable energy). The sustainable energy investments key expert also acts in the capacity of the Project’s Team Leader.

1.7 Logistics and timing

Location
The project office is located at: 1-b B.Khmelnitskogo Str. 30/10, Kiev 01030, Ukraine

Commencement date & Period of execution
Project Start Date: 19 January 2009 (As per Administrative Order no. 1)

Project Duration: 36 Months

Project End Date: 18 January 2012
2. SUMMARY OF PROJECT RESULTS

The Consortium consisting of Ramboll Denmark A/S (Leader), European Renewable Energy Council (EREC), LDK Consultants S.A. and EIR Development Partners Ltd. (Partners) commenced work on contract no. 2009/163-877 on the project entitled “Support to Energy Market Integration & Sustainable Energy in the NIS” (referred to in short as the SEMISE project) on 19 January 2009. The project was completed on schedule, i.e. within the project duration of thirty-six (36) months with a completion date of 18 January 2012. This final project report presents the results achieved by the project over the 3-year project period.

2.1 Results achieved by the project

2.1.1 Results under Objective 1: Energy Market Convergence

<table>
<thead>
<tr>
<th>Objective 1: Energy Market Convergence (Component A)</th>
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<tr>
<td>Identifying the gaps and the obstacles impeding progress towards regional energy market convergence as well as ways of improving and accelerating the convergence process at regional and sub-regional levels, by contributing to supporting the development of stable and secure energy relationships between Partner Countries and between these and the EU, and by encouraging the adoption of compatible legislation and regulatory practices, common technical standards as well as statistical data collection and forecasting systems (in relation, for example, to energy demand and energy balance).</td>
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The full scope of work was completed, as set out in with the project inception report, as follows:

1) Strategic action plan on removal of obstacles on the way towards energy market convergence was prepared as basis for the SEMISE interventions;
2) Guidelines for Applications for Ad-Hoc Expert Facility were developed;
3) Dissemination activities were carried out to launch the Ad-Hoc Expert Facility;
4) A series of Ad-Hoc Expert Facility (AHEF) support activities were implemented in a balanced manner across PCs and regions as appropriate – a total of 22 AHEF applications were implemented by SEMISE. The full list of projects can be found in Annex 1 and by partner country in Annex 3.
5) Regional Training Courses – 2 courses on energy market convergence were organised in total (Baku, June 2010 and Tbilisi, May 2011), connected to the study tours below.
6) Study Tours – 2 study tours were organised as follow-up events to the courses (Latvia, October 2010 and Hungary, September 2011);
7) Fact-finding missions and thematic events were carried out in the Partner Countries;
8) Coordination activities / participation in regular WG meetings were realised in cooperation with the INOGATE Technical Secretariat.

The overall expected result of this area of work was:

- Progress towards greater harmonisation of policies, legislations and regulatory practices as well as energy investment frameworks in the Partner
Countries and more generally, towards setting up of a more integrated energy market in the region;

The project delivered substantial results under this objective. Below is a summary of how the project team developed the activities under this objective and achieved the intended results.

**Ad Hoc Expert Facility (AHEF): a new demand-driven approach**

The approach of the SEMISE project was innovative. For the first time, an INOGATE project developed a form of technical assistance that was demand-driven from the Partner Countries themselves. This approach involved establishing an expert facility (Ad Hoc Expert Facility referred to as “AHEF”) which could be activated by eligible stakeholder(s) from the Partner Country/ies submitting an application for support. Following an evaluation process involving the expert team, an approval by the European Commission and a “no objection” from the respective Country Coordinator, the applicant received an assistance package of between 20-50 expert days, responding to their request for technical assistance.

In terms of the assistance provided by SEMISE under the energy market convergence area, the area of support most requested by applicants was the area referred to as EMC2 “developing / reviewing tariff methodologies” (a total of 7 applications were received in this area, 5 were actually implemented while 2 were not implemented as the project’s resources were limited and these requests came later). The 2nd most requested area of support was in EMC1 “development / improvement of legislative frameworks” (a total of 5 applications were received in this area and all 5 were actually implemented). The area that received the least number of requests (i.e. 1 application) was EMC4 “establishment of independent energy regulators”. A more detailed overview of the results achieved under AHEF can be found in Annex 4.

Below are two tables depicting the distribution of the **22 AHEF applications implemented** in the area of energy market convergence under SEMISE by eligible area and by partner country.

<table>
<thead>
<tr>
<th>Comp A: Energy Market Convergence AHEF Projects implemented by eligible area</th>
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<tbody>
<tr>
<td>Implemented</td>
</tr>
<tr>
<td>Legislative Frameworks</td>
</tr>
<tr>
<td>EMC-1</td>
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<td>5</td>
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It is interesting to note that all partner countries applied and received at least one AHEF assistance during the life of the SEMISE project, with the exception of Turkmenistan.

The benefit of the AHEF approach was that it allowed individual partner countries to have targeted and rather quick-response assistance to their specific situation. The regional dimension of this type of assistance was ensured by either grouping similar requests into common “projects” so that beneficiaries could share their experiences or by the SEMISE team creating dissemination material, case studies or methodologies to be used by similar beneficiaries in other partner countries (e.g. EU best practice on tariff setting prepared for one applicant was then turned into a “methodology” for use by other partner countries). The following methodologies were developed under Component A:

1- European best practice regarding to the connection to the grid, connection tariffs
2- Recommendations in the implementation of electricity market model
3- Methodology For Electricity Tariff Calculation For Different Activities
4- Reduction of Non-technical Natural Gas Losses in Transmission Gas Pipelines System and Gas Distribution Network
5- Gas transport tariffs’ calculation
6- European best practice regarding to the licensing in the energy sector
7- Recommendations for support of electricity production from RES
8- EU practice in treatment of technical losses in the high voltage electricity grid

All final documents in English and Russian have been uploaded to the INOGATE web portal at the following link:

Feedback from Beneficiaries
The feedback from the assistance was also very positive. It was clear that from the beneficiary responses and the experience of the SEMISE experts that the most effective way to provide AHEF assistance was through the combined use of reports and seminars / trainings. It proved very useful to present and discuss the findings /
recommendations of the SEMISE report with all the relevant local stakeholders to ensure understanding as well as to create ownership at various levels within the beneficiary organisations.

Below are excerpts from letters received from beneficiaries following AHEF implementation:

**UZB47** “Reduction of nontechnical natural gas losses in transmission gas pipelines system and gas distribution networks” – Beneficiary Organisation: OJSC "Uztransgaz":

The administration of JSC “Uztransgaz” expresses its gratitude personally to you and to the experts of the project “Support to Energy Markets Integration and Sustainable Energy in the NIS (SEMISE)” funded by the European Commission, for the successful implementation of the application “Reduction of Non-technical Gas Losses in Transmission Gas Pipelines System and Gas Distribution Network” submitted to our Company.

The tasks assigned to the experts were fully implemented in line with the Terms of Reference. A high level of professionalism and competence of the project experts contributed to the development of a comprehensive approach to the solution of assigned tasks.

**MLD21** – Feasibility study on the level and timescale of renewable energy and biofuel tariffs for incorporation in the primary and secondary legislation - Beneficiary Organisation: National Agency for Energy Regulation

On behalf of the National Agency for Energy Regulation (ANRE) of the Republic of Moldova, I would like to thank you for the provided technical assistance and the efforts invested by your experts in analysing and identifying existing shortcomings and gaps in the regulatory framework on renewable energy in the Republic of Moldova.

The SEMISE project is of a great importance for us. The results obtained within this project will be used to design a more efficient regulatory framework that would lead to a successful deployment of the renewable energy market in our country. On the other hand, these deliverables will greatly contribute to the development of the legal framework and fulfill the commitments that Moldova has made regarding the harmonization of our legislation with the European acquis in the energy sector as a Contracting Party to the Energy Community Treaty.

In this context, I want to inform you that ANRE started to work on a feed-in system that would be implemented in the Republic of Moldova based on the recommendations proposed in the project report. An amendment act for the Renewable Energy Law will be prepared in order to implement this mechanism, as well as to enact some other regulatory measures in line with EU best practices and RE supporting schemes that were mentioned in the report.

I believe that the results of our cooperation will positively contribute to a further strengthening of EU-Moldova relations and foster the development of the legal framework in the energy sector and the economic growth of the Republic of Moldova.

**AZE15**: Recommendations of the tariff methodology in the area of renewable energy – Beneficiary Organisation: Ministry of Economic Development

On behalf of … the Tariff Council …I would like to say that, your reports are very timely for our staff to work in the field of renewable energy sector, as information about the
real situation in Azerbaijan and the methodology and practical examples.

**ARM49 – Development of tariff methodologies for gas sector – Beneficiary Organisation: CJSC “ArmRusGasProm”**

We would like to thank you for the submitted final report “Recommendations for improvement of the gas pricing methodology based on EU best practice”. The report contains very useful information regarding the EU experience in regulation of the gas prices. I am more than sure that recommendations provided in the report will certainly be taken into account while calculating the natural gas prices and developing the pricing methodology in the gas sector in Armenia. It can be said with confidence that the work with you was successful and we are very grateful to your experts for fruitful cooperation and for diligent work with “ArmRusGasProm”.

**UKR32 – Methodology of tariff forming for ancillary services market in Ukraine– Beneficiary Organisation: NEC UkrEnergo**

NEK “Ukrenergo” considered the submitted final report “Ancillary Services Pricing and Procurement in Ukraine”. We strongly believe that this report will be useful for the Ukrainian specialists while introducing the ancillary services in Ukraine. NEK “Ukrenergo” would like to express gratitude for the work accomplished by the international consultants under the SEMISE Project.

Again, a more detailed overview of the results achieved under the AHEF can be found in Annex 4.

**Capacity building: an approach that built on results**

Throughout the capacity building programme, the Partner Countries were split into the following 2 groups, according to the state of maturity of their energy market’s development:

- “More developed markets” – defined as those countries with somehow restructured electricity and gas markets and a separate energy regulatory agency – 5 countries were included in this group – i.e. Armenia, Georgia, Kazakhstan, Moldova and Ukraine
- “Less developed markets” – define as those countries with monopolies prevailing in electricity and gas sectors and no independent regulator – 6 countries were included in this group - i.e. Azerbaijan, Belarus, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

The concept for the SEMISE capacity building programme on the energy market convergence involved organising 2 regional training courses with 2 follow-up study tours. After each of training course, a follow-up study tour was organised for the best participants (based on their test results during the training course). The purpose of the study tour was to acquaint the participants with operation of electricity and gas markets in an EU Member State. The country visited was selected on the basis of having similar historical background to the group of countries as well as good experience in the restructuring of the sector.

The diagram showing the logic of the capacity building programme is set out below.
The innovation in the capacity building programme was the use of testing before and after the training course to see how participants' knowledge improved and then rewarding only the best "students" with allowing them to participate in the study tour as a practical follow-up. Importantly, the feedback from participants from both the training courses and study tours was that the training was that they were planning to use the knowledge gained in their daily work. The evaluations by participants of the capacity building programmes were very positive given their extremely practical nature.

2.1.2 Results under Objective 2: Investment Facilitation

**Objective 2: Investment Facilitation (Component B)**

Supporting energy investments, notably by contributing to creating a more conducive business environment for investments, helping in the development of regional energy infrastructure interconnections, establishing collaborative links with energy companies, lending institutions and representatives of the business sector, in conjunction with the ITS, identifying project opportunities and making project preparation services available to financing institutions such as the EIB and the EBRD, while paying the highest attention to sustainable development considerations.

The overall expected result of this area of work was:

- Facilitation of financing by the banking sector (regional or local) or international institutions, of energy-related infrastructure projects initiated by the public sector, energy companies and/or private investors, with a particular emphasis on energy efficiency, energy conservation, renewable energy projects and infrastructure of common regional interest (whenever possible with the available budget resources), through a project preparation facility.

The project delivered adequate results under this objective, with many lessons learned during the delivery of this assistance. Below is a summary of how the project team developed the activities under this objective and achieved the intended results.
The full scope of work was completed, as set out with the project inception report, as follows:

1. Cooperation and contacts for investment attraction were set up. As a result of the fact-finding missions, follow-up meetings and careful research, a comprehensive database of contacts for the SEMISE project including all IFIs and related local financial institutions was developed and updated regularly throughout the project. In this way, it proved a very useful tool for the smooth implementation of this component’s work.

2. An assessment the impact of the economic crisis was undertaken at the outset – A position paper assessing the impact of the economic crisis was prepared at the outset of the project in early 2009, just after the global economic crisis started, on how to take the impact into account in developing the technical assistance targeting investments.

Feedback was sought from both financing bodies and Partner Countries on the scope and mandate of the Project Preparation Facility (PPF) – This task took longer than originally foreseen as the original “beneficiary” of the assistance under this component was to be the IFIs (i.e. that had specific projects in the PCs that needed facilitation support); however, the feedback proved that the real needs were with local financial institutions (LFIs). The PPF concept targeted improving the capacity of the local banks to include loans for energy efficiency and renewable energy projects in their portfolio.

It should be noted that during the inception fact-finding missions and following various promotional events held in the Partner Countries in the first year of the project (2009-2010), it was clear that the demand/requests for capacity building support among the local bankers differed considerably across the INOGATE PCs. Specifically, three groups of countries emerged in terms of their demand/requests for support as follows:

a) High demand countries: Ukraine, Georgia and Moldova – these countries were selectively covered by the IFI’s technical assistance (e.g. by EBRD and/or IFC);

b) Relatively high demand, but not-yet-met demand: Belarus, Armenia, Uzbekistan, Kazakhstan, Tajikistan;

c) Very low or no demand: Kyrgyzstan, Azerbaijan and Turkmenistan. It should be noted that the political situation in Kyrgyzstan was also rather unstable at the time of implementation of the project.

Therefore, the PPF concentrated its activities on the first two groups of PCs.

3. The Project Preparation Facility (PPF) was set up and launched with several promotional events in the partner countries to encourage interested parties to apply for assistance.

4. Energy projects opportunity were reviewed to highlight needs – Following the PPF promotional activities, 41 project concepts were prepared in cooperation with applicants. The needs showed that the following types of assistance were most requested:

   o Preparation of raising investors’ awareness of EE and RES opportunities
   o Second opinion on EE & RES investment projects
   o Development and assessment of ESCO business
   o Development of special financial product for EE and RES
   o Assessment of prospects for facilitation of EE/RES Equipment/Material Manufacture
   o Leasing of energy efficient equipment
   o Capacity Building for local financial institutions (EE/RES Introductory Training Courses and On-job Training on EE/RES screening, evaluation and preparation)
o Capacity building of procurement providers
o Capacity building of consulting companies
o Strengthening Bank’s position in carbon credits generating and trading
o Financial Product and Capacity Building for Gas-fired CHP Investment Projects
o EE and RES impact on Macro-economy
o Grants in the financing schemes for investments
o Risks mitigation and insurance
o Donors’ Coordination and Advisory Scheme

After further negotiations and screening, a total of 9 projects were selected for implementation under the PPF.

5. PPF was implemented in 4 countries—i.e. Armenia, Belarus, Ukraine and Uzbekistan through the 9 projects—see chart below. In addition, a three-day capacity building training course for banks’ credit officers on the specifics of the EE/RES investment projects was implemented in Moldova in cooperation with the Moldovan Banks Association.

| Comp. B: Investment Facilitation PPF Projects implemented by Partner Country |
| Comp B/PPF |
| AM | AZ | BY | GE | KY | KZ | MD | TJ | TM | UA | UZ |
| 2  | 0  | 2  | 0  | 0  | 0  | 0  | 0  | 0  | 4  | 1  |

6. PPF & EE/RES investment opportunities were promoted through Information Events organised by the ITS in Moldova, Kazakhstan, Azerbaijan, Armenia, Georgia, Kyrgyzstan and Tajikistan but also through promotional events were organized by SEMISE in Georgia and Armenia Belarus, Uzbekistan and Moldova.

One of most prominent promotional events organized by the SEMISE on the issue of investments was the Round Table on “Investments in Energy Efficiency and Renewable Energy Sources in Eastern Europe” which took place on 10-11 March 2011 in Kiev. The round table was carried out in cooperation with the Ukrainian League of Industrialists and Entrepreneurs and aimed at reducing the barriers for EE and RES investment projects by facilitating a dialogue between the banks, the investors and the authorities.

The round-table was attended by representatives of business, industry, finance and authorities from Ukraine, Belarus and Moldova and received
considerable media attention, helping to raise awareness on the need for dialogue among lenders, project sponsors and authorities on how to de-block investments in energy efficiency and renewable energy projects.

In cooperation with Component C, an energy efficiency awareness raising joint action was undertaken with the INOGATE project “Energy Saving Initiative in the Building Sector in the Eastern European and Central Asian Countries (ESIB)” for the EU-EA (European-Ukrainian Energy Agency), an NGO that promotes links between European and Ukrainian companies and organizations in the field of renewable energy and energy efficiency. Key messages were developed for the financial institutions on gaining their interest to provide financing to EE/RES projects.

A more detailed overview of the results achieved under the PPF can be found in Annex 6.

Feedback from beneficiaries

**PPF.09.BY “Development of the financing product for EE & RES” - Beneficiary organisation: OSJC “Belgazprombank”, Belarus**

Belgazprombank is among the top 10 banks of the Republic of Belarus. Currently, one of the promising directions for the Bank’s lending activities is financing of projects in the sphere of energy efficiency. The SEMISE project under the INOGATE Programme is a new direction for our Bank. In 2011, Belgazprombank has financed several major projects thereunder.

The participation in the INOGATE Programme will help Belgazprombank to achieve a competitive advantage on the loan market of the Republic of Belarus. In 2012, Belgazprombank plans to actively develop loan products under various programmes of energy efficiency. .... Belgazprombank would like to offer sincere appreciation to the staff of the European Commission’s international energy cooperation programme for the shared experience.

**Round Table on “Investments in Energy Efficiency and Renewable Energy Sources in Eastern Europe” which took place on 10-11 March 2011 in Kiev – Media coverage**

**ЕС будет содействовать инвестициям в энергоэффективность Восточной Европы**

EC и Украинский союз промышленников и предпринимателей провели круглый стол "Инвестиции в энергоэффективность и возобновляемые источники энергии в Восточной Европе" с участием представителей Украины, Молдавии и Беларуси.

Круглый стол "Инвестиции в энергоэффективность и возобновляемые источники энергии в Восточной Европе" организовала комиссия по энергоэффективности Украинского союза промышленников и предпринимателей совместно с финансируемым Европейским проектом поддержки интеграции энергетических рынков и устойчивой энергетики в новых независимых странах - SEMISE. Этот проект является частью программы энергетического сотрудничества Евросоюза со странами-партнерами INOGATE.
2.1.3 Results under Objective 3: Sustainable Energy

**Objective 3: Sustainable Energy (Component C)**

Promoting the development of sustainable energy policies and assisting the Partner Countries in their implementation, with a particular focus on the promotion of demand-side management, energy efficiency in all pertinent sectors, renewable energies, and the mitigation of the negative impact of energy-related activities on the environment.

The overall expected result of this area of work was:

- Steps forward in terms of institutional strengthening, awareness-raising and capacity development in key energy areas, including in regard to sustainability strategies, policy formulation, regulation and tariff setting, legislation drafting, energy efficiency development and energy auditing.

The full scope of work was completed, as set out in the project inception report, as follows:

1) Strategic action plan on removal of obstacles on the way towards sustainable energy development was prepared as basis for the SEMISE interventions;
2) Guidelines for Applications for Ad-Hoc Expert Facility were developed;
3) Dissemination activities were carried out to launch the Ad-Hoc Expert Facility;
4) A series of Ad-Hoc Expert Facility (AHEF) support activities were implemented in a balanced manner across PCs and regions as appropriate – a total of 25 AHEF applications were implemented by SEMISE. The full list of projects can be found in Annex 1 and by partner country in Annex 3.
5) Regional Training Course & Study Visit on EE & RES was organised in Vienna in June 2011.
6) International awareness raising Event – Conference on the Covenant of Mayors goes East was organised to jump-start the Covenant’s uptake in cities of partner countries
7) Fact-finding missions and thematic events were carried out in the Partner Countries;
8) Coordination activities / participation in regular WG meetings were realised in cooperation with the INOGATE Technical Secretariat.
9) Networking actions and awareness raising actions were undertaken throughout the project duration.
The project delivered significant results under this objective. Below is a summary of how the project team developed the activities under this objective and achieved the intended results.

Ad Hoc Expert Facility (AHEF): a new demand-driven approach
As in Component A: Energy Market Convergence, Component C: Sustainable Energy also undertook activities as part of the innovative, demand-driven expert facility (Ad Hoc Expert Facility referred to as “AHEF”).

In terms of the assistance provided by SEMISE under the sustainable energy area, the most requested area of support was for development of energy auditing in the industrial sector (a total of 14 applications were received in this area, 11 were actually implemented while 3 were not implemented as the project’s resources were limited and these requests came later). The 2nd most requested area of support was in the determination of potential for EE/RES (a total of 5 applications were received in this area and all 5 were actually implemented). The area that received the least number of requests (i.e. 1 application) was the development/improvement of legislative frameworks. A more detailed overview of the results achieved under AHEF can be found in Annex 5.

Below are two tables depicting how the distribution of the 25 AHEF applications implemented in the area of sustainable energy under SEMISE by eligible area and by partner country.

<table>
<thead>
<tr>
<th>Comp C: Sustainable Energy AHEF Projects implemented by eligible area</th>
<th>Implemented C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislative Frameworks</td>
<td>SE-1</td>
</tr>
<tr>
<td>Energy Auditing/Industrial</td>
<td>11</td>
</tr>
<tr>
<td>Economic Instruments</td>
<td></td>
</tr>
<tr>
<td>SE Policies and Strategies</td>
<td></td>
</tr>
<tr>
<td>Establishment of Energy Agencies/ESOs</td>
<td></td>
</tr>
<tr>
<td>Determination of potential for EE/RES</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>
As described under Component A, the benefit of the AHEF approach was that it allowed individual partner countries to have targeted and rather quick-response assistance to their specific situation. In terms of dissemination materials, a Methodology for Conducting Energy Audits on Small Hydroelectric Power Plants (SHPPs) was developed under Component C.

Feedback from Beneficiaries
The feedback from the assistance was also positive under Component C. Below are excerpts from letters received from beneficiaries following AHEF implementation:

**ARM13 – Capacity building: industrial energy audit analysis for bankable projects in Armenia - Beneficiary Organisation: Renewable Resources and Energy Efficiency Fund "R2E2" Fund**

We would like to report to you that the SEMISE team has conducted its assignment entitled “Capacity building: Industrial Energy Audit Analysis for Bankable Projects” in Yerevan this week. This was a seminar to teach senior engineers and decision-makers how to design feasible projects in EE and RES. The seminar, that the SEMISE instructors delivered, has fulfilled all the requirements of its ToR. As a result of this seminar, our organisation, R2E2 Fund, has received the following benefits:

- Practical skills for life cycle analysis of such projects
- Feasibility analysis for energy efficiency projects with integrated renewable energy technologies
- Project presentation skills and tools necessary for provision of similar trainings for other beneficiaries
- Knowledge, skills and tools necessary for provision of similar trainings for other beneficiaries.

R2E2 Fund wishes to thank INOGATE-SEMISE for this technical assistance. I am sure the trainees will not only use the obtained knowledge in their practice, but also distribute their knowledge and information to other professionals increasing actual number of beneficiaries of this capacity building initiative.

**KAZ67 – Industrial energy audit analysis for bankable projects – Beneficiary organisation: JSC "KazakhEnergoExpertiza"**
Capacity building, networking and awareness raising
Under this area of activity, SEMISE carried out the following activities:

- The launch of the Covenant of Mayors initiative to cities in the Partner Countries through the organisation of an international conference in October 2010
- The organisation of a multi-dimensional capacity building event called the “Combo” course which featured an integrated training and site visit programme across two countries on the subject of sustainable energy and the creation / strengthening of energy agencies in the partner countries.
- Awareness raising and networking actions both through the above events but also through targeted actions such as the preparation of an energy efficiency campaign messaging template and the organisation of the SEMISE Final Conference at the close of the project with a view to disseminating the results and lessons learned.

Covenant of Mayors
Following Tbilisi's signature of the Covenant of Mayors in March 2010, the municipality contacted the EC and proposed to host an awareness raising workshop on the Covenant of Mayors initiative in Tbilisi, which could gather local/national authorities from INOGATE countries. They proposed to hold it back-to-back with the city’s annual festival, an event that traditionally gathers a number of cities of Georgia in Tbilisi during the last week of October, called Tbilisoba. The SEMISE project had already implemented three AHEF projects to assist the cities of Sumgayit(Azerbaijan), Tbilisi (Georgia) and Yerevan (Armenia) on the preparation for their membership in the Covenant of Mayors. Given the relevance to SEMISE’s scope of intervention under these AHEF Applications and the experience gained by the project, it was agreed with the EC that SEMISE organises the proposed Covenant of Mayors Conference in Tbilisi as part of its capacity building programme. This fit perfectly into the scope of SEMISE’s capacity building events in that this conference targeted the development of the capacity of local authorities in the INOGATE countries in initiating sustainable energy planning for their cities. Moreover, the conference provided wider awareness raising of sustainable energy opportunities on the municipal level.

In this context, SEMISE organized the “Covenant of Mayors goes East - International Conference on the Covenant of Mayors” on 21-22 October 2010 in Tbilisi. The conference had a total of 161 participants. A total of 47 cities from the Eastern Europe, Caucasus and Central Asia region were represented at the conference, either at the mayor or deputy mayor level. The conference showed that the cities from the region are interested in taking an active role in addressing the growing energy concerns that directly affect the lives of their citizens.
SEMISE helped organise a press conference with the support of the Press Officers of the EU Delegation Tbilisi and Tbilisi City. A total of 41 journalists participated in the press conference and significant news coverage was given to the event both in the print media and the TV.

Media coverage from the International Conference Covenant of Mayors goes East organised under SEMISE

Tbilisi ready to help reduce CO2 emissions

Tests refute allegations against Azersun

Family photo of representatives of more than 45 cities from the Partner Countries

Capacity building, awareness raising and networking

The “Combo” Course on Institutional Capacity Building for Sustainable Energy in NIS was organised in Bratislava, Slovakia and Vienna, Austria between 13 and 16
June 2011. With 23 participants from 10 Partner Countries: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Ukraine, and Uzbekistan – it provided an ideal networking opportunity. One of the featured topics of this combo event was to highlight the important role of awareness raising and communication in the work of EE/RES agencies. The result was not only helping them to understand its importance, but also providing them with the basic skills in undertaking sustainable energy promotion activities in their countries. The study tour also included a visit to the Vienna Energy House, which was a very practical example of how to showcase energy efficiency for the general public. The “combo” event was considered very successful by all participants and a great networking event for energy agencies across the partner countries. The key result of the training was increased awareness among the senior staff of energy efficiency and renewable energy agencies and their peers from the corresponding ministries on setting up and operating an EE/RES agency; and on developing effective policies, incentives and programmes for promotion EE and RES.

In cooperation with Component B (task B6), an energy efficiency awareness raising joint action was undertaken with the INOGATE project “Energy Saving Initiative in the Building Sector in the Eastern European and Central Asian Countries (ESIB)” for the EU-EA (European-Ukrainian Energy Agency), an NGO that promotes links between European and Ukrainian companies and organizations in the field of renewable energy and energy efficiency. EUEA plans to organize a public awareness campaign and requested support in developing campaign messages for their specific target groups:

- EUEA: schools, high schools, universities, house keepers
- ESIB: residential, commercial, and public buildings;
- SEMISE: industry, banks and other financial institutions

SEMISE delivered the concept of the awareness campaign including targeted messages to industry, banks and other financial institutions, messages which can be used also by other countries in preparing their awareness raising activities.

### 2.2 Summary of SEMISE activities in each Partner Country

To summarize, the SEMISE’s assistance was organised around a three-pronged approach featuring the three main areas of assistance:

1. **Ad Hoc Expert Facility (AHEF):** Country-specific needs with a regional dimension addressed through the support of experts specifically for energy market convergence and sustainable energy.
2. **Project Preparation Facility (PPF):** Targeted support provided for facilitating investments in the energy efficiency and renewable energy sectors, in cooperation with international financial institutions but aimed at local financial institutions.
3. **Capacity Building Activities:** Regional training events fostering transfer of know-how, experience exchange and networking among the Partner Countries organised to address specific common themes in energy market convergence and sustainable energy.

The first two “prongs” of the technical assistance were demand-driven while the capacity building activities were built on a clear needs assessment of the targeted beneficiaries. This allowed the SEMISE project to ensure that its delivery closely matched the needs of the Partner Countries.
The SEMISE project also undertook additional activities including awareness raising and networking; however the above three areas of assistance formed the bulk of work carried out by the SEMISE project.

The table below summarises the total technical assistance provided to each Partner Country under the 3 components / areas of the project:
- Ad Hoc Expert Facility applications implemented under Component A: Energy Market Convergence
- Ad Hoc Expert Facility applications implemented under Component C: Sustainable Energy
- Project Preparation Facility applications implemented under Component B: Investment Facilitation.

<table>
<thead>
<tr>
<th>Partner Country</th>
<th>AHEF Projects</th>
<th>PPF Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>AZ</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>BY</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>GE</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>KY</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>KZ</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>MD</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>TJ</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>TM</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>UA</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>UZ</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

It should be clear that each country received the maximum possible support given the applicability and timeliness of the applications made by the Partner Countries. In Annex 3, the individual assignments are presented by partner country and summarize the assistance carried out in all three components / areas of the project.

The final SEMISE project conference was organized on 14-15 December 2011 in Brussels, back-to-back with the ITS-organised Meeting of the Country Coordinators and Working Group 1 and 3 Members. The conference was organized in two half day sessions –i.e. the second half of 14 December and the first half of 15 December 2011. The conference allowed the SEMISE project to present its final results and showcase some specific relevant examples of technical assistance carried out under both AHEF and PPF, which both were considered a very useful way of implementing the INOGATE technical assistance.
3. LESSONS LEARNT & RECOMMENDATIONS FOR THE FUTURE

3.1 Lessons Learnt & recommendations regarding the Ad Hoc Expert Facility (AHEF)

The AHEF proved to be a very useful tool in responding to the Partner Countries’ needs and assisting them on short notice. Its demand-driven nature allowed for flexibility in assisting the PCs in moving forward on the implementation of the Astana Energy Road Map objectives.

AHEF allowed for:

✓ About 400 institutional stakeholders in the INOGATE Partner Countries were offered targeted demand-driven assistance as proven by the Stakeholders database implemented for AHEF/PPF contact points of which more than 100 (including PPF) applied for such assistance and almost 70 directly benefited as shown in the AHEF/PPF assignments registry (Annex 1 and 2). Through these assignments, more than 1,200 stakeholders from Partner Countries directly or indirectly benefitted.

✓ the European dimension to be disseminated – more than 50 EU experts involved in conveying best European practices.

Some constraints should be noted:

- Often poor responsiveness of a beneficiary to requests for clarifications of application points
- Often insufficient support from local INOGATE structures
- Selection of inadequate tasks (too large, too complicated) by potential beneficiaries
- Different terminologies used in the EU and Partner Countries so there is a need for verbal follow-ups, explanations and clarifications
- Unrealistic expectation of some beneficiaries to get a final product (methodology, rules, etc.)
- Sometimes not easy to find highly specialised expertise requested
- Risk of regional projects: Mostly motivated on the basis of real-life technical problems but heavily influenced by high-level policy status quo since the decision making in the PCs is still too vertical (top-down) to allow even peer cooperation on study-level.
- Commitment of beneficiaries’ own-resources: Although it can reasonably be assumed that the beneficiary organisations may have had some progress on the aspect in concern out of their own initiative and prior to applying for AHEF, previous (background) work or in-house specialists were rarely offered to the SEMISE team.

Recommendations for future work in the area of energy market convergence:

⇒ There is a clear need to assist the PC in the preparation of legal normative documents – this could be one of the tasks of the future INOGATE Programme.

⇒ Upcoming INOGATE projects should not only deal with the establishment of independent regulatory agencies in the PCs where they do not exist,
but also pay significant attention towards strengthening of the existing regulatory agencies.

⇒ Reduction of technical and non-technical losses, optimisation of costs and activities, in general, more efficient operation of companies should remain an important task for the future INOGATE Programme.

⇒ With the potential development of market reforms in the PCs demand for the EU experts’ advice on the market mechanisms should also increase.

⇒ Particularly in respect of certain counties of ENPI region, regional initiatives appear to open new opportunities for the regional integration of energy markets i.e. Energy Community, adhesion to Baltic countries to Nordpool.

**Lessons learned** to be taken into account in the future:
- For the future, overall performance indicators should be put in place at the outset setting out what the overall AHEF should achieve. Only beneficiaries who make clear commitments and specify how they will use the results should be supported; in this way, beneficiaries who are willing to take action will have priority for obtaining AHEF support.
- It is clear that sometimes a beneficiary realises additional support is needed as soon as the AHEF is completed. In this respect, it should be allowed to continue to provide assistance to the beneficiary if this is clearly linked to a concrete result that can be targeted and achieved.
- Beneficiaries - perhaps due to the spontaneous nature of AHEF - were found to submit applications for TA which may (perhaps with small alterations) be of a benefit for other PCs.
- Contribution of own-resources i.e. specialists, previous work carried out in the same area should be encouraged to be provided by the beneficiaries.
- Some of the AHEFs had built-in closing presentation where the results of the project were presented to the beneficiary. These presentations proved very helpful for the exchange of views between the beneficiary and the experts, allowing for the easier preparation of the final recommendations and helping, in many cases, to further disseminate the findings amongst other relevant stakeholders. These information meetings/workshops were very useful best practice for the AHEF assignments.

The following 8 eligible applications that were not implemented under the SEMISE project due to lack of resources could potentially be re-reviewed under new INOGATE projects for support. These applications include the following:

**Component A Applications**

1. **Application No. UZ.68**: “Presentation of the EU experience in attracting private companies into electricity supply activity” – Beneficiary organization: Uztransgas, Uzbekistan

2. **Application No. TJ.69**: “Recommendations on new tariff methodology in the gas sector taking into account peculiarities of the internal gas market in the Republic of Tajikistan” – Beneficiary organisation: Tajiktransgas, Tajikistan

3. **Application No. UZ.74**: “Development of a model of restructuring of the electricity sector towards creation of a wholesale market” - Beneficiary organisation: State Committee on Demonopolization and Support of Competition of the Republic of Uzbekistan

Component C Applications:


2. **KG.81**: “Technical audit at small hydropower plants (SHPPs) in Kyrgyzstan and proposals for financing rehabilitation actions” - Ministry of Energy of the Kyrgyz Republic and OJSC “Chakan HPP”

3. **UA.82**: “Capacity building: Analysis of industrial energy audit for bankable projects” - Ukrainian Association of Industrialists and Entrepreneurs

4. **UA.83**: “Capacity building: Analysis of industrial energy audit for bankable projects” - Closed JSC “Institute of Energy Audit and energy metering”.

3.2 Lessons Learnt & recommendations regarding the Project Preparation Facility (PPF)

Facilitating investments in renewables and especially energy efficiency by local financial institutions (banks) has been a challenge. Fundamentally it is because the financing market in most PCs is still not yet mature for this type of loan offering. Energy efficiency is a very special type of loan product where the return on investment comes from cost savings rather than increased revenue. That is why this new financial model requires a great deal of capacity building among bankers on how to provide financing for EE / RES projects. SEMISE provided such training to local financial institutions and this is strongly recommended to continue.

The most frequently sought support by banks was:

⇒ elaboration of second opinion
⇒ design of awareness campaign
⇒ design of a special financial product for the EE market.

A few banks have established a strategy to be the leader/pioneer in the country in this area of loan financing for energy efficiency. Only by working with the leading banks is there a chance to get tangible results in this phase.

Another lesson learned is that it is difficult to build a “trust” relationship with the banks. One way SEMISE helped resolve this was to sign confidentiality agreement; this helped give the banks the assurance that some of the work they considered confidential would indeed be kept confidential by the project team.

Even in countries where significant financial support instruments are in place (UKEEP in Ukraine, MOSEEF in Moldova), energy efficiency projects are rare. In the countries where the IFIs operate with their own credit facilities, they usually offer TA linked to these credit facilities. In these countries, facilities such as the PPF have no
chance to compete. Moreover, it is our clear observation that IFIs considered the SEMISE efforts as being somehow in competition to their technical assistance and despite declarations of willingness to cooperate, so no real cooperation was found during the life of the project.

Yet another lesson learned was that even though our assistance was free of charge, it required some in-kind contribution from the banks in terms of time and effort. It was observed that the banks were not always ready to do that until it was clear what they could expect to get as a result – so sometimes significant convincing efforts are necessary even to get the project started.

Building of banks’ capacity was the dominating request among all PCs. Here we have observed a possibility of using Bank Associations as an intermediary. Working with bank associations proved to be a good way to promote capacity building as the associations are well respected in the various PCs.

Overall the SEMISE project paved the way for a new demand-driven model in delivering technical assistance. Although improvements and streamlining of the models developed under SEMISE need to be made, it is clear that the demand-driven model linked to clearly defined results is the way of the future.
List of Annexes

Annex 1: Final AHEF Registry

Annex 2: Final PPF Registry

Annex 3: Final AHEF & PPF Registry by Partner Country

Annex 4: AHEF results in Energy Market Convergence

Annex 5: AHEF results in Sustainable Energy

Annex 6: PPF results in Investment Attraction
Annex 1: Final AHEF Registry
**SEMISE AHEF Application Registry as of February 3, 2012**

<table>
<thead>
<tr>
<th>Application Number, Date Received, Status and the SEMISE's Component</th>
<th>Application Title</th>
<th>Applicant</th>
<th>Notes</th>
</tr>
</thead>
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<tr>
<td><strong>KG.01 November 2009 C Approved</strong></td>
<td>Estimation of EE and RES potential in the utility's district heating boiler house(s)</td>
<td>State Enterprise &quot;Kyrgyzzhilkommunsoyuz&quot; at the Ministry of Energy, 88 Bokonbayeva Str., 720040, Bishkek, Kyrgyz Republic</td>
<td>Completed</td>
</tr>
<tr>
<td><strong>BY.02 November 2009 C Application not eligible</strong></td>
<td>Estimation of EE and RES potential in the utility's district heating boiler house(s)</td>
<td>UE &quot;MinskCommunTeploSet&quot;, 12 Volgogradskaya Str., 220049, Minsk, Republic of Belarus</td>
<td>Not considered</td>
</tr>
<tr>
<td><strong>UA.03 November 2009 C Application not eligible</strong></td>
<td>Feasibility study for building retrofits; energy audit and energy management training</td>
<td>State Ecology Academy for Post-graduate and Administrative Training of the Ministry of Environmental Protection, 35 Uritskogo Str., Kyiv, Ukraine</td>
<td>Transferred to INOGATE Project Energy Saving Initiative in Building ESIB</td>
</tr>
<tr>
<td><strong>UA.04 November 2009 A Application not eligible</strong></td>
<td>Overview (analysis) of efficiency of best practices on environmental levies/taxes and other incentives to improve companies' resources saving operating practices</td>
<td>State Ecology Academy for Post-graduate and Administrative Training of the Ministry of Environmental Protection, 35 Uritskogo Str., Kyiv, Ukraine</td>
<td>Not considered</td>
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<tr>
<td><strong>AZ.05 November 2009 A Application not eligible</strong></td>
<td>Impact assessemnt of Azerbaijan's energy system development (installation of new capacities and modernisation of energy generation and elec. networks ) towards GHG emissions reduction</td>
<td>Azerbaijan-Norway Cleaner Production and Energy Efficiency Centre, Zardabi ave., 94, AZ1012, Baku, Azerbaijan Republic</td>
<td>Not considered</td>
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<tr>
<td><strong>KZ.07 November 2009 A Approved</strong></td>
<td>Presentation of the EU experience regarding connection conditions and relevant charges for electricity customers</td>
<td>JSC &quot;Kazakhstan Electricity Grid Operating Company&quot; KEGOC, 7 Bogenbay-batyry Str., 010000, Astana, Republic of Kazakhstan</td>
<td>Completed</td>
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<tr>
<td>Application Number, Date Received, Status and the SEMISE's Component</td>
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<td>Applicant</td>
<td>Notes</td>
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<td>BY.08 November 2009 Approved</td>
<td>GHG projections for the Republic of Belarus to 2020 and 2050 and energy sector mitigation options</td>
<td>Ministry of Natural Resources and Environmental Protection , 10 Kollektornaya St., 220048, Minsk, Republic of Belarus</td>
<td>Completed</td>
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<tr>
<td>KG.09 November 2009 Approved</td>
<td>Estimation of EE and RES potential in the utility's district heating boiler house(s)</td>
<td>Ministry of Energy , 119 Ahunbaeva street, 720055, Bishkek, Kyrgyz Republic</td>
<td>Completed</td>
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<tr>
<td>KG.10 November 2009 Approved</td>
<td>TOR for creation of new technical committee due to the adoption of CEN standards in Kyrgyzstan's gas sector</td>
<td>Ministry of Energy , 119 Ahunbaeva street, 720055, Bishkek, Kyrgyz Republic</td>
<td>Completed</td>
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<tr>
<td>BY.11 November 2009 Application not eligible</td>
<td>Analysis and optimisation of joint operation of energy generation sources in Belarus' energy system with power units that do not belong to &quot;Belenergo&quot;</td>
<td>Energy Efficiency Department of the State Committee for Standardization , 17 Svobody Square, 220030, Minsk, Republic of Belarus</td>
<td>Not considered</td>
</tr>
<tr>
<td>BY.12 November 2009 Approved</td>
<td>Analysis and international experience overview on development of secondary legislation on alternative and renewable energy sources (RES) in the Republic of Belarus</td>
<td>Energy Efficiency Department of the State Committee for Standardization , 17 Svobody Square, 220030, Minsk, Republic of Belarus</td>
<td>Completed</td>
</tr>
<tr>
<td>AM.13 November 2009 Approved</td>
<td>Capacity building: industrial energy audit analysis for bankable projects in Armenia</td>
<td>Renewable Resources and Energy Efficiency Fund &quot;R2E2&quot; Fund, Proshyan Str., 1st Lane, Apt. 32, 0019, Yerevan, Republic of Armenia</td>
<td>Completed</td>
</tr>
<tr>
<td>AZ.14 November 2009 Approved</td>
<td>Recommendations based on the best practices of EU countries with respect to rules and procedures for connection to the grid, connection tariffs</td>
<td>Ministry of Economic Development, Division of regulation of transport, communication, industry and public utilities , House of Government, 10th Floor, 40 Uzeir Dadzhibekov, Az1000, Baku, Azerbaijan Republic</td>
<td>Completed</td>
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<tr>
<td>AZ.15 November 2009 Approved</td>
<td>Recommendations of the tariff methodology in the area of renewable energy sources</td>
<td>Ministry of Economic Development, Division of regulation of transport, communication, industry and public utilities , House of Government, 10th Floor, 40 Uzeir Dadzhibekov, Az1000, Baku, Azerbaijan Republic</td>
<td>Completed</td>
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<tr>
<td>UA.16 November 2010 Approved</td>
<td>Support to SE &quot;Energorynok&quot; in the stage of preparation to the market of bilateral agreement and balancing market implementations</td>
<td>The State Company &quot;Energorynok&quot;, 27 Kominterna Str., 01032, Kyiv, Ukraine</td>
<td>Completed</td>
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<tr>
<td>Application Number, Date Received, Status and the SEMISE's Component</td>
<td>Application Title</td>
<td>Applicant</td>
<td>Notes</td>
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| UA.17

Approved

November 2009 | Recommendation based on EU experience regarding practical implementation of the energy exchange | The State Company “Energorynok”, 27 Kominterna Str., 01032, Kyiv, Ukraine | Completed |
| AZ.18

Application not eligible

November 2009 | Auditing of energy efficiency building codes compared to those of the Russian Federation | Ministry of Ecology and Natural Resources, 100-A B.Aghayev str.; and 50 Heydar Aliyev Ave., Az1073, Baku, Azerbaijan Republic | Transferred to INOGATE Project Energy Saving Initiative in Building ESIB |
| KZ.19

Approved

November 2009 | Capacity building for the staff of the Energy Saving and RES Department of the Ministry of Energy per the new energy efficiency legislation | Ministry of Energy and Mineral Resources, 19 Kabanbai Batyr Ave., 010000, Astana, Republic of Kazakhstan | Completed |
| KZ.20

Approved

November 2009 | Business plan for creation of an energy auditor training centre | JSC "Kazakh Research Institute of Power Engineering named after Sh. Ch. Chokin", 85 Baltursynov Str., 050012, Almaty, Republic of Kazakhstan | Completed |
| MD.21

Approved

November 2009 | Feasibility study on the level and timescale of renewable energy and biofuel tariffs for incorporation in the primary and secondary legislation | National Agency for Energy Regulation ANRE, 90 Columna Str., MD-2012, Chisinau, Republic of Moldova | Completed |
| UA.22

Application not eligible

December 2009 | Increasing the operational efficiency of energy companies | OJSC “Svitlovodskpobut”, 2a Krupskoy Street, 27500, Svetlovodsk, Ukraine | Not considered |
| GE.23

Application not eligible

December 2009 | Development & improvement of legislative framework | LTD Centre “Energy Efficiency and Environmental Protection”, 18A Ateni Str., Tbilisi, Georgia | Transferred to INOGATE Project Energy Saving Initiative in Building ESIB |
| GE.24

Application not eligible

December 2009 | Support for development of energy savings in existing buildings | LTD Centre “Energy Efficiency and Environmental Protection”, 18A Ateni Str., Tbilisi, Georgia | Transferred to INOGATE Project Energy Saving Initiative in Building ESIB |
| GE.25

Approved

December 2009 | Development of ESCO business in Georgia | LTD Centre “Energy Efficiency and Environmental Protection”, 18A Ateni Str., Tbilisi, Georgia | Completed |
| GE.26

Approved

December 2009 | Capacity building: industrial energy audit analysis for bankable projects in Georgia | LTD Centre “Energy Efficiency and Environmental Protection”, 18A Ateni Str., Tbilisi, Georgia | Completed |
| GE.27

Application not eligible

December 2009 | Determination of potential for energy efficiency in urban buildings in Georgia | LTD Centre “Energy Efficiency and Environmental Protection”, 18A Ateni Str., Tbilisi, Georgia | Transferred to INOGATE Project Energy Saving Initiative in Building ESIB |
<table>
<thead>
<tr>
<th>Application Number, Date Received, Status and the SEMISE’s Component</th>
<th>Application Title</th>
<th>Applicant</th>
<th>Notes</th>
</tr>
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<tr>
<td>AM.28 December 2009 Approved</td>
<td>Development of guidelines for evaluation of mini hydro feasibility studies in the framework of licensing procedure of RES applications by the Regulator</td>
<td>Public Services Regulatory Commission PSRC, 22 Saryan Str., 0002, Yerevan, Republic of Armenia</td>
<td>Completed</td>
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<tr>
<td>GE.29 December 2009 Approved</td>
<td>Preparation of Municipality of Tbilisi for membership in the Covenant of Mayors</td>
<td>Tbilisi City Hall, 7 Shartava Str., 0160, Tbilisi, Georgia</td>
<td>Completed</td>
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<tr>
<td>AM.30 December 2009 Approved</td>
<td>Preparation of Municipality of Yerevan for membership in the Covenant of Mayors</td>
<td>Yerevan Municipality, City Hall of Yerevan, 1 Argishti Street, 0015, Yerevan, Republic of Armenia</td>
<td>Completed</td>
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<tr>
<td>AM.31 December 2009 Approved</td>
<td>Business plan for the improvement of competence of industries producing energy efficient building materials in Armenia</td>
<td>Ministry of Energy and Natural Resources, Republic Square, 2 Government House, 0010, Yerevan, Republic of Armenia</td>
<td>Completed</td>
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<tr>
<td>UA.32 December 2009 Approved</td>
<td>Methodology of tariff forming for ancillary services market in Ukraine</td>
<td>NEC UkrEnergo, 25 Kominterna Str., 01032, Kyiv, Ukraine</td>
<td>Completed</td>
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<tr>
<td>UA.33 December 2009 Approved</td>
<td>Main software specifications for balancing market and ancillary services functioning</td>
<td>NEC UkrEnergo, 25 Kominterna Str., 01032, Kyiv, Ukraine</td>
<td>Completed</td>
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<tr>
<td>UA.34 December 2009 Approved</td>
<td>Treatment of technical losses in the Ukrainian HV system with reference to the EU practice</td>
<td>NEC UkrEnergo, 25 Kominterna Str., 01032, Kyiv, Ukraine</td>
<td>Completed</td>
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<tr>
<td>UA.35 December 2009 Application not eligible</td>
<td>Proposal from Dneproenergo (area not clear)</td>
<td>OJSC “Dneproenergo”, 20 Dobrolyubova Str., 69006, Zaporizhia, Ukraine</td>
<td>Not considered</td>
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<tr>
<td>UA.36 December 2009 Application not eligible</td>
<td>Proposal from Kievenergo (on DSM)</td>
<td>NJSC “Energy Company of Ukraine” NJSC ECU, 34 Khreschatyk Str., 01601, Kyiv, Ukraine</td>
<td>Not considered</td>
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<tr>
<td>UA.37 December 2009 Approved</td>
<td>Technical audits in 3 small HPPs</td>
<td>Foreign Economical Association “NovoSvit” FEA “NovoSvit”, 16 Stanislavskogo Str., 21022, Vinnitsa, Ukraine</td>
<td>Completed</td>
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<tr>
<td>AM.38 December 2009 Application not eligible</td>
<td>Best practice knowledge transfer from the EU to the R2E2 Fund and Ministry of Energy and Natural Resources of Armenia on 2nd and higher Generation Cellulosic Bioethanol Production Technologies</td>
<td>Renewable Resources and Energy Efficiency Fund “R2E2” Fund, Proshyan Str., 1st Lane, Apt. 32, 0019, Yerevan, Republic of Armenia</td>
<td>Not considered</td>
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<tr>
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<td>Applicant</td>
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<td><strong>AZ.39</strong> December 2009</td>
<td>Preparation of Municipality of Sumgayit for membership in the Covenant of Mayors</td>
<td>Sumgayit City Executive Power, Sumgayit, Azerbaijan Republic</td>
<td>Approved, Completed</td>
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<tr>
<td><strong>MD.40</strong> December 2009</td>
<td>Audit of technical status of main pipelines</td>
<td>JSC “MoldovaGaz”, 38 Albisoara Str., MD-2005, Chisinau, Republic of Moldova</td>
<td>Application not eligible, Not considered</td>
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<tr>
<td><strong>MD.41</strong> December 2009</td>
<td>Operational efficiency of mechanisms and units</td>
<td>JSC “MoldovaGaz”, 38 Albisoara Str., MD-2005, Chisinau, Republic of Moldova</td>
<td>Application not eligible, Not considered</td>
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<tr>
<td><strong>MD.42</strong> December 2009</td>
<td>Reduction of technical and non-technical losses</td>
<td>JSC “MoldovaGaz”, 38 Albisoara Str., MD-2005, Chisinau, Republic of Moldova</td>
<td>Application not eligible, Not considered</td>
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<td><strong>MD.43</strong> December 2009</td>
<td>Rehabilitation of dispatching management system of gas pipeline transportation in MD</td>
<td>JSC “MoldovaGaz”, 38 Albisoara Str., MD-2005, Chisinau, Republic of Moldova</td>
<td>Application not eligible, Not considered</td>
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<td><strong>MD.44</strong> December 2009</td>
<td>Tariffs for gas transporting and transit</td>
<td>JSC “MoldovaGaz”, 38 Albisoara Str., MD-2005, Chisinau, Republic of Moldova</td>
<td>Approved, Completed</td>
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<td><strong>MD.45</strong> December 2009</td>
<td>Increasing payment collection rate</td>
<td>JSC “MoldovaGaz”, 38 Albisoara Str., MD-2005, Chisinau, Republic of Moldova</td>
<td>Approved, Completed</td>
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<tr>
<td><strong>MD.46</strong> December 2009</td>
<td>Survey of hydrocarbon stocks and construction of underground gas storage facilities</td>
<td>JSC “MoldovaGaz”, 38 Albisoara Str., MD-2005, Chisinau, Republic of Moldova</td>
<td>Application not eligible, Not considered</td>
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<tr>
<td><strong>UZ.47</strong> June 2010</td>
<td>Reduction of non-technical natural gas losses in transmission gas pipelines system and gas distribution networks</td>
<td>OJSC “Uztransgaz”, 31а Yusuf Khos Khojib, 100031, Tashkent, Republic of Uzbekistan</td>
<td>Approved, Completed</td>
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<tr>
<td><strong>UA.48</strong> January 2010</td>
<td>Implementation of 2003/30/EC directive on biofuel usage for transportation</td>
<td>Ministry of Energy and Coal Industry, 30 Kreshchatyk, 01001, Kyiv, Ukraine</td>
<td>Application not eligible, Not considered</td>
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<tr>
<td><strong>AM.49</strong> February 2010</td>
<td>Development of tariff methodologies for gas sector</td>
<td>CJSC “ArmRusGazProm”, Tbilisi Highway 43, 0091, Yerevan, Republic of Armenia</td>
<td>Approved, Completed</td>
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<tr>
<td><strong>AZ.50</strong> April 2010</td>
<td>Licensing business activities in energy sector</td>
<td>Ministry of Industry and Energy, 40, Uzeyir Hajibayov Str., House of Government, Az1000, Baku, Azerbaijan Republic</td>
<td>Approved, Completed</td>
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<tr>
<td><strong>AZ.51</strong> April 2010</td>
<td>Development of connection procedures for RES</td>
<td>Ministry of Industry and Energy, 40, Uzeyir Hajibayov Str., House of Government, Az1000, Baku, Azerbaijan Republic</td>
<td>Application not eligible, Rejected for duplication of a previous application</td>
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<tr>
<td>Application Number, Date Received, Status and the SEMISE's Component</td>
<td>Application Title</td>
<td>Applicant</td>
<td>Notes</td>
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<tr>
<td>AZ.52 April 2010</td>
<td>Development/review of tariff methodologies. RES price promotion scheme</td>
<td>Ministry of Industry and Energy, 40, Uzeir Hajibayov Str., House of Government, Az1000, Baku, Azerbaijan Republic</td>
<td>Rejected for duplication of a previous application</td>
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<tr>
<td>AZ.53 April 2010</td>
<td>Formulation of feed-in tariffs &amp; other support schemes for RES (e.g. guarantees of origin)</td>
<td>Ministry of Industry and Energy, 40, Uzeir Hajibayov Str., House of Government, Az1000, Baku, Azerbaijan Republic</td>
<td>Rejected for duplication of a previous application</td>
</tr>
<tr>
<td>TJ.56 April 2010</td>
<td>Development and improvement of legislation, particularly secondary legislation, on RES adopted in December 2009</td>
<td>Public Organization &quot;Association of Power Engineers of Tajikistan&quot; , Dushanbe, Republic of Tajikistan</td>
<td>Not considered</td>
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<tr>
<td>TJ.57 April 2010</td>
<td>Assistance in development and review of tariff methodologies</td>
<td>Public Organization &quot;Association of Power Engineers of Tajikistan&quot; , Dushanbe, Republic of Tajikistan</td>
<td>Not considered</td>
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<tr>
<td>TJ.58 April 2010</td>
<td>Assessment of CDM project potential for replacement of conventional energy sources with RES in order to raise investment attraction of the project</td>
<td>Public Organization &quot;Association of Power Engineers of Tajikistan&quot; , Dushanbe, Republic of Tajikistan</td>
<td>Not considered</td>
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<tr>
<td>TJ.59 May 2010</td>
<td>Feasibility study on coal gasification</td>
<td>OJSC &quot;TajikTransGas&quot;, 6 Rudaki Str., 734012, Dushanbe, Republic of Tajikistan</td>
<td>Not considered</td>
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<tr>
<td>UA.60 May 2010 Approved</td>
<td>Adaptation of the EC energy management legislation for Ukraine</td>
<td>State Agency on Energy Efficiency and Energy Conservation NAER, 12 Muzeyny Lane, 01601, Kyiv, Ukraine</td>
<td>Completed</td>
</tr>
<tr>
<td>UA.61 July 2010</td>
<td>Establishment and capacity building of a Sustainable Energy Agency of the Association EECU</td>
<td>Association of Energy Efficient Cities of Ukraine AEECU, 2 Pletenetskogo Str., Suite 1, 79020, Lviv, Ukraine</td>
<td>Not considered</td>
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<tr>
<td>UZ.62 August 2010</td>
<td>Methodology of studying wind potential in the regions of Uzbekistan</td>
<td>SJSC &quot;Uzbekenergo&quot;, 6 Khorezm St., 100000, Tashkent, Republic of Uzbekistan</td>
<td>Not considered</td>
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<tr>
<td>TJ.63 November 2010 Approved</td>
<td>Tariff methodology for generating plants, transmission and distribution networks</td>
<td>OJSHPC “Barki-Tojik”, 64 Ismoili Somoni Str., 734026, Dushanbe, Republic of Tajikistan</td>
<td>Completed</td>
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<tr>
<td>Application Number, Date Received, Status and the SEMISE's Component</td>
<td>Application Title</td>
<td>Applicant</td>
<td>Notes</td>
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<tr>
<td>---------------------------------------------------------------</td>
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<td><strong>UZ.64</strong> Approved November 2010 A</td>
<td>Determination of energy transit routes in energy systems with complicated network configuration</td>
<td>&quot;Energy&quot; Coordination and Dispatch Center of the Central Asia United Energy System INGNO CDC &quot;Energy&quot;, Mirzo-Ulugbeksky District, 6 Istiklol (former Khorezmskaya) Str., 100000, Tashkent, Republic of Uzbekistan</td>
<td>Completed</td>
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<tr>
<td><strong>TJ.65</strong> Approved November 2010 A</td>
<td>Improvement of the natural gas legislation</td>
<td>OJSC &quot;TajikTransGas&quot;, 6 Rudaki Str., 734012, Dushanbe, Republic of Tajikistan</td>
<td>Completed</td>
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<tr>
<td><strong>KZ.66</strong> Approved December 2010 C</td>
<td>Assistance in training energy management specialists according to ISO 50001</td>
<td>JSC &quot;KazakhEnergoExpertiza&quot;, 40 Kenesary Str., &quot;7th Continent&quot; Business Center (14th Floor), 010000, Astana, Republic of Kazakhstan</td>
<td>Suspended</td>
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<tr>
<td><strong>KZ.67</strong> Approved November 2010 C</td>
<td>Industrial energy audit analysis for bankable projects</td>
<td>JSC &quot;KazakhEnergoExpertiza&quot;, 40 Kenesary Str., &quot;7th Continent&quot; Business Center (14th Floor), 010000, Astana, Republic of Kazakhstan</td>
<td>Completed</td>
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<tr>
<td><strong>UZ.68</strong> Approved November 2010 A</td>
<td>Production of the materials on the EU experience in attracting private companies supplying and distributing electricity</td>
<td>SJSC &quot;Uzbekenergo&quot;, 6 Khorezm St., 100000, Tashkent, Republic of Uzbekistan</td>
<td>Suspended</td>
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<tr>
<td><strong>TJ.69</strong> Approved November 2010 A</td>
<td>Preparation of new tariff methodologies for implementation in the gas sector</td>
<td>OJSC &quot;TajikTransGas&quot;, 6 Rudaki Str., 734012, Dushanbe, Republic of Tajikistan</td>
<td>Suspended</td>
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<tr>
<td><strong>KZ.70</strong> Approved December 2010 C</td>
<td>Assistance in business plan developing for creation of a Single (Republican) Centre for Energy Auditors Certification</td>
<td>State Energy Supervision Committee of the Ministry of Industry and New Technologies GosEnergoNadzor, Left Bank, 8 Orynbora Str., Building of Ministers, Entrance 15, floor 7, 010000, Astana, Republic of Kazakhstan</td>
<td>Completed</td>
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<tr>
<td><strong>MD.71</strong> Approved February 2011 C</td>
<td>Preparation of Municipality of Cimişlia for membership in the Covenant of Mayors</td>
<td>Primaria (Town Hall) Cimişlia, 9 Decebeal Str., MD-4100, Cimişlia, Republic of Moldova</td>
<td>Suspended</td>
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<tr>
<td><strong>UZ.73</strong> Approved February 2011 A</td>
<td>Development of recommendations for separation of electricity and heat production costs in co-generation</td>
<td>State Committee on Demonopolization and Support of Competition, 18A Navoiy Str., 100011, Tashkent, Republic of Uzbekistan</td>
<td>Completed</td>
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<tr>
<td><strong>UZ.74</strong> Approved February 2011 A</td>
<td>Development of a model of restructuring of the electricity sector towards creation of a wholesale market</td>
<td>State Committee on Demonopolization and Support of Competition, 18A Navoiy Str., 100011, Tashkent, Republic of Uzbekistan</td>
<td>Suspended</td>
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<tr>
<td>Application Number, Date Received, Status and the SEMISE's Component</td>
<td>Application Title</td>
<td>Applicant</td>
<td>Notes</td>
</tr>
<tr>
<td>---------------------------------------------------------------------</td>
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<tr>
<td>TJ.75 Application not eligible</td>
<td>Development of a feasibility study on the large scale reconstruction and revamping of worn-out parts of gas pipelines in order to reduce gas losses in the urban gas distribution networks</td>
<td>OJSC &quot;TajikTransGas&quot;, 6 Rudaki Str., 734012, Dushanbe, Republic of Tajikistan</td>
<td>Not considered</td>
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<tr>
<td>AZ.76 Approved</td>
<td>Harmonization of electricity standards</td>
<td>Ministry of Industry and Energy , 40, Uzeyir Hajibayov Str., House of Government, Az1000, Baku, Azerbaijan Republic</td>
<td>Suspended</td>
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<tr>
<td>KZ.77 Approved</td>
<td>Capacity building: Analysis of industrial energy audit for bankable projects</td>
<td>JSC &quot;Kazakhstan Research Institute of Power Engineering named after Sh. Ch. Chokin&quot;, 85 Baitursynov Str., 050012, Almaty, Republic of Kazakhstan</td>
<td>Completed</td>
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<tr>
<td>KZ.78 Approved</td>
<td>Technical audit of Kazakhstan's small HPPs and development of proposals financing for rehabilitation of small HPPs</td>
<td>JSC &quot;Almaty Electric Stations&quot; JSC &quot;ALES&quot;, 7 Dostyk Ave., 050002, Almaty, Republic of Kazakhstan</td>
<td>Completed</td>
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<tr>
<td>KG.79 Approved</td>
<td>Support in creation of a training center for certified energy auditors</td>
<td>Center for Problems of RES Usage of the Ministry of Energy , 7 Elebeyev Str., 720031, Bishkek, Kyrgyz Republic</td>
<td>Completed</td>
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<tr>
<td>KG.80 Approved</td>
<td>Capacity audit of bankable projects</td>
<td>Ministry of Energy , 119 Ahunbaeva street, 720055, Bishkek, Kyrgyz Republic</td>
<td>Completed</td>
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<tr>
<td>KG.81 Approved</td>
<td>Kyrgyzstan's small HPPs technical audit and financing proposals development for their rehabilitation</td>
<td>Ministry of Energy , 119 Ahunbaeva street, 720055, Bishkek, Kyrgyz Republic</td>
<td>Suspended</td>
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<tr>
<td>UA.82 Approved</td>
<td>Capacity audit of bankable projects</td>
<td>Ukrainian League of Industrialists and Entrepreneurs ULIE, 34 Khreschatik Str., 3-rd floor, 01001, Kyiv, Ukraine</td>
<td>Suspended</td>
</tr>
<tr>
<td>UA.83 Approved</td>
<td>Support in creation of a training center for certified energy auditors</td>
<td>Institute of Energy Audit and Energy Carrier Accounting , 13 Myshyuh Str., 79034, Lviv, Ukraine</td>
<td>Suspended</td>
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<tr>
<td>GE.84 Application not eligible</td>
<td>LNG Projects Regulatory Framework</td>
<td>Georgian National Energy Regulatory Commission GNERC, 26 Chechelashvili St., 4600, Kutaiai, Georgia</td>
<td>Not considered</td>
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<tr>
<td>GE.85 Approved</td>
<td>Opportunity study for renewable energy trade with EU countries</td>
<td>Georgian National Energy Regulatory Commission GNERC, 26 Chechelashvili St., 4600, Kutaiai, Georgia</td>
<td>Completed</td>
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<tr>
<td>KG.86 Application not eligible</td>
<td>Crude oil production in highly waxy rings</td>
<td>OJSC &quot;KyrgyzNefteGaz&quot;, 44 Lenina Str., 721206, Kochkor-Ata, Kyrgyz Republic</td>
<td>Not considered</td>
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<tr>
<td>KG.87 Application not eligible</td>
<td>Estimate of the potential of lignite at Kavak basin</td>
<td>State Enterprise &quot;Karachoke&quot; of the Ministry of Energy , 119 Ahunbaeva street, 720040, Bishkek, Kyrgyz Republic</td>
<td>Not considered</td>
</tr>
<tr>
<td>Application Number, Date Received, Status and the SEMISE's Component</td>
<td>Application Title</td>
<td>Applicant</td>
<td>Notes</td>
</tr>
<tr>
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</tr>
<tr>
<td>KG.88</td>
<td>March 2011</td>
<td>Alternative schemes of water supply for the town of Kochkor-Ata</td>
<td>OJSC &quot;KyrgyzNefteGaz&quot;, 44 Lenina Str., 721206, Kochkor-Ata, Kyrgyz Republic</td>
</tr>
<tr>
<td>KG.89</td>
<td>March 2011</td>
<td>Chemical and Analytic Laboratory of OJSC &quot;KyrgyzNefteGaz&quot;</td>
<td>OJSC &quot;KyrgyzNefteGaz&quot;, 44 Lenina Str., 721206, Kochkor-Ata, Kyrgyz Republic</td>
</tr>
<tr>
<td>BY.90</td>
<td>March 2011</td>
<td>Capacity building: Energy audit of bankable projects</td>
<td>Energy Efficiency Department of the State Committee for Standardization, 17 Svobody Square, 220030, Minsk, Republic of Belarus</td>
</tr>
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</table>

**Notes:**
- Application not eligible
- Approved
- Completed
Annex 2: Final PPF Registry
<table>
<thead>
<tr>
<th>Concept Number, Date Initiated, Status and the SEMISE's Component</th>
<th>Concept / Project Title</th>
<th>Country of Implementation</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>PPF.08.BY Approved</td>
<td>Capacity building: Specifics of Investment Projects in Energy Efficiency and Renewable Energy Sources</td>
<td>Republic of Belarus</td>
<td>Completed</td>
</tr>
<tr>
<td>PPF.09.BY Approved</td>
<td>Development of financial product for EE investment</td>
<td>Republic of Belarus</td>
<td>Completed</td>
</tr>
<tr>
<td>PPF.17.AM Approved</td>
<td>Strengthening Bank’s Position in Emissions Reduction Projects Investment and Carbon Credits Generating and Trading</td>
<td>Republic of Armenia</td>
<td>Completed</td>
</tr>
<tr>
<td>PPF.18.AM Approved</td>
<td>Second opinion for small HPP investment project</td>
<td>Republic of Armenia</td>
<td>Suspended</td>
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<tr>
<td>PPF.34.UZ Approved</td>
<td>Support to development of a leasing scheme for energy saving equipment in Uzbekistan</td>
<td>Republic of Uzbekistan</td>
<td>Completed</td>
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<tr>
<td>PPF.35.MD Approved</td>
<td>Opportunity for wind energy development in the Republic of Moldova</td>
<td>Republic of Moldova</td>
<td>Suspended</td>
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<tr>
<td>PPF.37.UA Approved</td>
<td>Capacity building in development of EE and RES projects</td>
<td>Ukraine</td>
<td>Completed</td>
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<tr>
<td>PPF.38.AM Approved</td>
<td>Strengthening Bank’s Position in Emissions Reduction Projects Investment and Carbon Credits Generating and Trading</td>
<td>Republic of Armenia</td>
<td>Completed</td>
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<tr>
<td>PPF.39.UA Approved</td>
<td>EE investment promotion</td>
<td>Ukraine</td>
<td>Completed</td>
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<tr>
<td>PPF.40.UA Approved</td>
<td>Technical assistance for E5P Fund in Ukraine</td>
<td>Ukraine</td>
<td>Completed</td>
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<tr>
<td>PPF.41.UA Approved</td>
<td>Capacity building of lessors</td>
<td>Ukraine</td>
<td>Completed</td>
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</table>
Annex 3:

Final AHEF & PPF Registry by Partner Country
## Component A: Energy Market Convergence

<table>
<thead>
<tr>
<th>SEMISE's AHEF and PPF Assignments, Republic of Armenia</th>
</tr>
</thead>
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<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
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<th>Details</th>
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<tbody>
<tr>
<td>AHEF.28.AM</td>
<td>Development of guidelines for evaluation of mini hydro feasibility studies in the framework of licensing procedure of RES applications by the Regulator</td>
<td>Approved</td>
<td>Public Services Regulatory Commission PSRC, 22 Saryan Str., 0002, Yerevan, Republic of Armenia</td>
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<tr>
<td>AHEF.49.AM</td>
<td>Development of tariff methodologies for gas sector</td>
<td>Approved</td>
<td>CJSC &quot;ArmRusGazProm&quot;, Tbilisi Highway 43, 0091, Yerevan, Republic of Armenia</td>
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## Component B: Investment Facilitation

<table>
<thead>
<tr>
<th>SEMISE's AHEF and PPF Assignments, Republic of Armenia</th>
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<tr>
<th>Component</th>
<th>Description</th>
<th>Status</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>PPF.17.AM</td>
<td>Strengthening Bank’s Position in Emissions Reduction Projects Investment and Carbon Credits Generating and Trading</td>
<td>Approved</td>
<td>CJSC “InEcoBank”, 17 Tumanyan Str., 0001, Yerevan, Republic of Armenia</td>
</tr>
<tr>
<td>PPF.18.AM</td>
<td>Second opinion for small HPP investment project</td>
<td>Approved</td>
<td>Suspended</td>
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</table>
### Component C: Sustainable Energy

<table>
<thead>
<tr>
<th>AHEF.13.AM</th>
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<tr>
<td>Development of Energy Auditing in the Industrial Sector</td>
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<tr>
<td><strong>Capacity building: industrial energy audit analysis for bankable projects in Armenia</strong></td>
<td></td>
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<tr>
<td>Renewable Resources and Energy Efficiency Fund &quot;R2E2&quot; Fund, Proshyan Str., 1st Lane, Apt. 32, 0019, Yerevan, Republic of Armenia</td>
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<tr>
<th>AHEF.30.AM</th>
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<tbody>
<tr>
<td>Development of Sustainable Energy Policies and Strategies</td>
<td></td>
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</tr>
<tr>
<td><strong>Preparation of Municipality of Yerevan for membership in the Covenant of Mayors</strong></td>
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<tr>
<td>Yerevan Municipality, City Hall of Yerevan, 1 Argishti Street, 0015, Yerevan, Republic of Armenia</td>
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<th>AHEF.31.AM</th>
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<tr>
<td>Development of Economic Instruments</td>
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<tr>
<td><strong>Business plan for the improvement of competence of industries producing energy efficient building materials in Armenia</strong></td>
<td></td>
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<tr>
<td>Ministry of Energy and Natural Resources, Republic Square, 2 Government House, 0010, Yerevan, Republic of Armenia</td>
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## Component A: Energy Market Convergence

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<tr>
<td>Competition Promotion and Third Party Access</td>
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<tr>
<td>Recommendations based on the best practices of EU countries with respect to rules and procedures for connection to the grid, connection tariffs</td>
<td></td>
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<tr>
<td>Ministry of Economic Development, Division of regulation of transport, communication, industry and public utilities, House of Government, 10th Floor, 40 Uzeir Dadzhibekov, Az1000, Baku, Azerbaijan Republic</td>
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<tr>
<th>AHEF.15.AZ</th>
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<tr>
<td>Development/Improvement of Legislative Frameworks</td>
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<tr>
<td>Recommendations of the tariff methodology in the area of renewable energy sources</td>
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<tr>
<td>Ministry of Economic Development, Division of regulation of transport, communication, industry and public utilities, House of Government, 10th Floor, 40 Uzeir Dadzhibekov, Az1000, Baku, Azerbaijan Republic</td>
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<tbody>
<tr>
<td>Development/Improvement of Legislative Frameworks</td>
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<tr>
<td>Licensing business activities in energy sector</td>
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<tr>
<td>Ministry of Industry and Energy, 40, Uzeyir Hajibayov Str., House of Government, Az1000, Baku, Azerbaijan Republic</td>
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<th>AHEF.76.AZ</th>
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<tr>
<td>Competition Promotion and Third Party Access</td>
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<td>Harmonization of electricity standards</td>
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<tr>
<td>Ministry of Industry and Energy, 40, Uzeyir Hajibayov Str., House of Government, Az1000, Baku, Azerbaijan Republic</td>
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## Component C: Sustainable Energy

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<thead>
<tr>
<th>AHEF.06.AZ</th>
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<tr>
<td>Determination of Potential for EE / RES</td>
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<tr>
<td>Identification of offshore wind energy potential in the Caspian Sea aquatorium of the Republic of Azerbaijan</td>
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</tr>
<tr>
<td>Ministry of Industry and Energy, 40, Uzeyir Hajibayov Str., House of Government, Az1000, Baku, Azerbaijan Republic</td>
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<tr>
<td>Development of Sustainable Energy Policies and Strategies</td>
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<tr>
<td>Preparation of Municipality of Sumgayit for membership in the Covenant of Mayors</td>
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<tr>
<td>Sumgayit City Executive Power, Sumgayit, Azerbaijan Republic</td>
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<thead>
<tr>
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<tbody>
<tr>
<td>Establishment of Energy Agencies/ESCOs</td>
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<tr>
<td>Support for capacity building of newly created of State Agency on Alternative and Renewable Energy</td>
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</tr>
<tr>
<td>Ministry of Industry and Energy, 40, Uzeyir Hajibayov Str., House of Government, Az1000, Baku, Azerbaijan Republic</td>
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<tr>
<td>Determination of Potential for EE / RES</td>
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<tr>
<td>Mapping human resources for and further professional development of the Agency of Alternative and Renewable Energy of the Azerbaijan Republic</td>
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</tr>
<tr>
<td>Ministry of Industry and Energy, 40, Uzeyir Hajibayov Str., House of Government, Az1000, Baku, Azerbaijan Republic</td>
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SEMISE’s AHEF and PPF Assignments, Republic of Belarus

<table>
<thead>
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<th>Component A:</th>
<th>Energy Market Convergence</th>
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</table>
| **AHEF.12.BY** | Approved  
Completed | Analysis and international experience overview on development of secondary legislation on alternative and renewable energy sources (RES) in the Republic of Belarus  
Energy Efficiency Department of the State Committee for Standardization , 17 Svobody Square , 220030, Minsk, Republic of Belarus |

<table>
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<tr>
<th>Component B:</th>
<th>Investment Facilitation</th>
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</table>
| **PPF.08.BY** | Approved  
Completed | Capacity building: Specifics of Investment Projects in Energy Efficiency and Renewable Energy Sources  
OJSC ”Belgazprombank”, 60/2 Pritytskogo St., 220121, Minsk, Republic of Belarus |
| **PPF.09.BY** | Approved  
Completed | Development of financial product for EE investment  
OJSC ”Belgazprombank”, 60/2 Pritytskogo St., 220121, Minsk, Republic of Belarus |

<table>
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<tr>
<th>Component C:</th>
<th>Sustainable Energy</th>
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</table>
| **AHEF.08.BY** | Approved  
Completed | GHG projections for the Republic of Belarus to 2020 and 2050 and energy sector mitigation options  
Ministry of Natural Resources and Environmental Protection , 10 Kollektornaya St., 220048, Minsk, Republic of Belarus |
| **AHEF.90.BY** | Approved  
Completed | Capacity building: Energy audit of bankable projects  
Energy Efficiency Department of the State Committee for Standardization , 17 Svobody Square , 220030, Minsk, Republic of Belarus |
### Component A: Energy Market Convergence

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<tr>
<th>AHEF.85.GE</th>
<th>Approved</th>
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<tr>
<td>Energy Market Mechanisms</td>
<td>Completed</td>
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<tr>
<td><strong>Opportunity study for renewable energy trade with EU countries</strong></td>
<td>Georgian National Energy Regulatory Commission GNERC, 26 Chechelashvili St., 4600, Kutaisi, Georgia</td>
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### Component C: Sustainable Energy

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<th>AHEF.25.GE</th>
<th>Approved</th>
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<tr>
<td>Development of Economic Instruments</td>
<td>Completed</td>
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<tr>
<td><strong>Development of ESCO business in Georgia</strong></td>
<td>LTD Centre &quot;Energy Efficiency and Environmental Protection&quot;, 18A Ateni Str., Tbilisi, Georgia</td>
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<th>AHEF.26.GE</th>
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<tr>
<td>Development of Energy Auditing in the Industrial Sector</td>
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</tr>
<tr>
<td><strong>Capacity building: industrial energy audit analysis for bankable projects in Georgia</strong></td>
<td>LTD Centre &quot;Energy Efficiency and Environmental Protection&quot;, 18A Ateni Str., Tbilisi, Georgia</td>
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<tbody>
<tr>
<td>Development of Sustainable Energy Policies and Strategies</td>
<td>Completed</td>
</tr>
<tr>
<td><strong>Preparation of Municipality of Tbilisi for membership in the Covenant of Mayors</strong></td>
<td>Tbilisi City Hall, 7 Shartava Str., 0160, Tbilisi, Georgia</td>
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</table>
## Component A: Energy Market Convergence

<table>
<thead>
<tr>
<th>Project Code</th>
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<tr>
<td>AHEF.07.KZ</td>
<td>Approved, Completed</td>
<td>Presentation of the EU experience regarding connection conditions and relevant charges for electricity customers</td>
<td>JSC “Kazakhstan Electricity Grid Operating Company” KEGOC, 7 Bogenbay-batyr Str., 010000, Astana, Republic of Kazakhstan</td>
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## Component C: Sustainable Energy

<table>
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<tr>
<td>AHEF.19.KZ</td>
<td>Approved, Completed</td>
<td>Capacity building for the staff of the Energy Saving and RES Department of the Ministry of Energy per the new energy efficiency legislation</td>
<td>Ministry of Energy and Mineral Resources, 19 Kabanbai Batyr Ave., 01000, Astana, Republic of Kazakhstan</td>
</tr>
<tr>
<td>AHEF.20.KZ</td>
<td>Approved, Completed</td>
<td>Business plan for creation of an energy auditor training centre</td>
<td>JSC “Kazakh Research Institute of Power Engineering named after Sh. Ch. Chokin”, 85 Baitursynov Str., 050012, Almaty, Republic of Kazakhstan</td>
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<tr>
<td>AHEF.66.KZ</td>
<td>Approved, Suspended</td>
<td>Assistance in training energy management specialists according to ISO 50001</td>
<td>JSC “KazakhEnergoExpertiza”, 40 Kenesary Str., “7th Continent” Business Center (14th Floor), 010000, Astana, Republic of Kazakhstan</td>
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<tr>
<td>AHEF.67.KZ</td>
<td>Approved, Completed</td>
<td>Industrial energy audit analysis for bankable projects</td>
<td>JSC “KazakhEnergoExpertiza”, 40 Kenesary Str., “7th Continent” Business Center (14th Floor), 01000, Astana, Republic of Kazakhstan</td>
</tr>
<tr>
<td>AHEF.70.KZ</td>
<td>Approved, Completed</td>
<td>Assistance in business plan developing for creation of a Single (Republican) Centre for Energy Auditors Certification</td>
<td>State Energy Supervision Committee of the Ministry of Industry and New Technologies GosEnergoNadzor, Left Bank, 8 Orynbora Str., Building of Ministers, Entrance 15, floor 7, 010000, Astana, Republic of Kazakhstan</td>
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<tr>
<td>AHEF.77.KZ</td>
<td>Approved, Completed</td>
<td>Capacity building: Analysis of industrial energy audit for bankable projects</td>
<td>JSC “Kazakh Research Institute of Power Engineering named after Sh. Ch. Chokin”, 85 Baitursynov Str., 050012, Almaty, Republic of Kazakhstan</td>
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<tr>
<td>AHEF.78.KZ</td>
<td>Approved, Completed</td>
<td>Technical audit of Kazakhstan’s small HPPs and development of proposals financing for rehabilitation of small HPPs</td>
<td>JSC “Almaty Electric Stations” JSC “ALES”, 7 Dostyk Ave., 050002, Almaty, Republic of Kazakhstan</td>
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</table>
### Component A: Energy Market Convergence

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>AHEF.10.KG</td>
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<td>TOR for creation of new technical committee due to the adoption of CEN standards in Kyrgyzstan’s gas sector</td>
<td>Ministry of Energy, 119 Ahunbaeva street, 720055, Bishkek, Kyrgyz Republic</td>
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<td>Other</td>
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### Component C: Sustainable Energy

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<tr>
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<tr>
<td>AHEF.01.KG</td>
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<td>Estimation of EE and RES potential in the utility’s district heating boiler house(s)</td>
<td>State Enterprise “Kyrgyzhilkommunsoyuz” at the Ministry of Energy, 88 Bokonbayeva Str., 720040, Bishkek, Kyrgyz Republic</td>
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<tr>
<td>AHEF.09.KG</td>
<td>Approved</td>
<td>Estimation of EE and RES potential in the utility’s district heating boiler house(s)</td>
<td>Ministry of Energy, 119 Ahunbaeva street, 720055, Bishkek, Kyrgyz Republic</td>
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<tr>
<td>AHEF.79.KG</td>
<td>Approved</td>
<td>Support in creation of a training center for certified energy auditors</td>
<td>Center for Problems of RES Usage of the Ministry of Energy, 7 Elebavev Str., 720031, Bishkek, Kyrgyz Republic</td>
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<tr>
<td>AHEF.80.KG</td>
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<td>Capacity building: Energy audit of bankable projects</td>
<td>Ministry of Energy, 119 Ahunbaeva street, 720055, Bishkek, Kyrgyz Republic</td>
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<tr>
<td>AHEF.81.KG</td>
<td>Approved</td>
<td>Kyrgyzstan’s small HPPs technical audit and financing proposals development for their rehabilitation</td>
<td>Ministry of Energy, 119 Ahunbaeva street, 720055, Bishkek, Kyrgyz Republic</td>
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### Notes
- **KYRGYZ REPUBLIC**
- Details on SEMISE's AHEF and PPF Assignments, Kyrgyz Republic
- Sanctioned by the European Commission's Neighbouring Policy Unit
- Implementing organization: ECO (Energy Co-operation Organization)
- Contributions to the implementation of the Neighbouring Policy Unit's energy cooperation strategies in the Kyrgyz Republic
- Activities focus on energy market convergence, sustainable energy, and capacity building.
## Component A: Energy Market Convergence

<table>
<thead>
<tr>
<th>AHEF.21.MD</th>
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<tr>
<td>AHEF.44.MD</td>
<td>Approved</td>
<td>Development/Review of Tariff Methodologies</td>
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<tr>
<td>AHEF.45.MD</td>
<td>Approved</td>
<td>Energy Companies' Performance Improvement</td>
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### Feasibility study on the level and timescale of renewable energy and biofuel tariffs for incorporation in the primary and secondary legislation

- National Agency for Energy Regulation ANRE, 90 Columna Str., MD-2012, Chisinau, Republic of Moldova

### Tariffs for gas transporting and transit

- JSC “MoldovaGaz”, 38 Albisoara Str., MD-2005, Chisinau, Republic of Moldova

### Increasing payment collection rate

- JSC “MoldovaGaz”, 38 Albisoara Str., MD-2005, Chisinau, Republic of Moldova

## Component B: Investment Facilitation

| PPF.35.MD | Approved | EE & RES Project Support, Project Preparation |

### Opportunity for wind energy development in the Republic of Moldova

- BC “Mobiasbanca – Groupe Société Générale” S.A., 81 A Stefan cel Mare si Sfant Ave., MD-2012, Chisinau, Republic of Moldova

## Component C: Sustainable Energy

| AHEF.71.MD | Approved | Development of Sustainable Energy Policies and Strategies |

### Preparation of Municipality of Cimişlia for membership in the Covenant of Mayors

- Primaria (Town Hall) Cimişlia, 9 Decebal Str., MD-4100, Cimişlia, Republic of Moldova
<table>
<thead>
<tr>
<th>Component A:</th>
<th>Energy Market Convergence</th>
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<tr>
<td><strong>AHEF.63.TJ</strong></td>
<td><strong>Approved</strong>&lt;br&gt;Completed</td>
</tr>
<tr>
<td>Development/Review of Tariff Methodologies</td>
<td>Tariff methodology for generating plants, transmission and distribution networks</td>
</tr>
<tr>
<td><strong>AHEF.65.TJ</strong></td>
<td><strong>Approved</strong>&lt;br&gt;Completed</td>
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<tr>
<td>Development/Improvement of Legislative Frameworks</td>
<td>Improvement of the natural gas legislation</td>
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<tr>
<td><strong>AHEF.69.TJ</strong></td>
<td><strong>Approved</strong>&lt;br&gt;Suspended</td>
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<tr>
<td>Development/Review of Tariff Methodologies</td>
<td>Preparation of new tariff methodologies for implementation in the gas sector</td>
</tr>
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<td>Component C: Sustainable Energy</td>
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<tr>
<td>-------------------------------</td>
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<tr>
<td>AHEF.91.TM Approved Completed</td>
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<tr>
<td>Determination of Potential for EE / RES</td>
<td></td>
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<tr>
<td>&quot;TurkmenEnergo&quot; State Electricity Concern, 2022 (Alisher Navoi) Str. 55, 744000, Ashgabad, Turkmenistan</td>
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**SEMISE's AHEF and PPF Assignments, Ukraine**

**Component A: Energy Market Convergence**

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<tr>
<td>AHEF.16.UA</td>
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<td>Support to SE “Energorynok” in the stage of preparation to the market of bilateral agreement and balancing market implementations</td>
<td>The State Company “Energorynok”, 27 Kominterna Str., 01032, Kyiv, Ukraine</td>
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<tr>
<td>AHEF.17.UA</td>
<td>Approved</td>
<td>Recommendation based on EU experience regarding practical implementation of the energy exchange</td>
<td>The State Company “Energorynok”, 27 Kominterna Str., 01032, Kyiv, Ukraine</td>
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<tr>
<td>AHEF.32.UA</td>
<td>Approved</td>
<td>Methodology of tariff forming for ancillary services market in Ukraine</td>
<td>NEC UkrEnergo, 25 Kominterna Str., 01032, Kyiv, Ukraine</td>
</tr>
<tr>
<td>AHEF.33.UA</td>
<td>Approved</td>
<td>Main software specifications for balancing market and ancillary services functioning</td>
<td>NEC UkrEnergo, 25 Kominterna Str., 01032, Kyiv, Ukraine</td>
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<tr>
<td>AHEF.34.UA</td>
<td>Approved</td>
<td>Treatment of technical losses in the Ukrainian HV system with reference to the EU practice</td>
<td>NEC UkrEnergo, 25 Kominterna Str., 01032, Kyiv, Ukraine</td>
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**Component B: Investment Facilitation**

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<td>PPF.37.UA</td>
<td>Approved</td>
<td>Capacity building in development of EE and RES projects</td>
<td>OJSC “Erste Bank”, 33-V Dehtiarivska St., 03057, Kyiv, Ukraine</td>
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<tr>
<td>PPF.39.UA</td>
<td>Approved</td>
<td>EE investment promotion</td>
<td>OJSC “Erste Bank”, 33-V Dehtiarivska St., 03057, Kyiv, Ukraine</td>
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<td>PPF.40.UA</td>
<td>Approved</td>
<td>Technical assistance for E5P Fund in Ukraine</td>
<td>Delegation of the European Union to Ukraine, 10 Kruhlo-Universytetska St., 01024, Kyiv, Ukraine</td>
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<tr>
<td>PPF.41.UA</td>
<td>Approved</td>
<td>Capacity building of lessors</td>
<td>Ukrainian Union of Lessors UUL, 1/32 Telmana Str., 03150, Kyiv, Ukraine</td>
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<td>Component C:</td>
<td>Sustainable Energy</td>
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<td><strong>AHEF.37.UA</strong></td>
<td><strong>Technical audits in 3 small HPPs</strong></td>
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<td><strong>AHEF.60.UA</strong></td>
<td><strong>Adaptation of the EC energy management legislation for Ukraine</strong></td>
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<td><strong>AHEF.82.UA</strong></td>
<td><strong>Capacity building: Energy audit of bankable projects</strong></td>
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<td><strong>AHEF.83.UA</strong></td>
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<td>Development of Energy Auditing in the Industrial Sector</td>
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Foreign Economical Association "NovoSvit" FEA "NovoSvit", 16 Stanislavskogo Str., 21022, Vinnitsa, Ukraine

State Agency on Energy Efficiency and Energy Conservation NAER, 12 Muzeyny Lane, 01601, Kyiv, Ukraine

Ukrainian League of Industrialists and Entrepreneurs ULIE, 34 Khreschatik Str., 3-rd floor, 01001, Kyiv, Ukraine

Institute of Energy Audit and Energy Carrier Accounting, 13 Myshuhy Str., 79034, Lviv, Ukraine
### Component A: Energy Market Convergence

<table>
<thead>
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<td>AHEF.47.UZ</td>
<td>Approved</td>
<td>Reduction of non-technical natural gas losses in transmission gas pipelines system and gas distribution networks</td>
<td>OJSC &quot;Uztransgaz&quot;, 31a Yusuf Khos Khojib, 100031, Tashkent, Republic of Uzbekistan</td>
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<tr>
<td>AHEF.64.UZ</td>
<td>Approved</td>
<td>Determination of energy transit routes in energy systems with complicated network configuration</td>
<td>&quot;Energy&quot; Coordination and Dispatch Center of the Central Asia United Energy System INGNCO CDC &quot;Energy&quot;, Mirzo-Ulubeksky District, 6 Istiklol (former Khorezmskaya) Str., 100000, Tashkent, Republic of Uzbekistan</td>
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<td>AHEF.68.UZ</td>
<td>Approved</td>
<td>Production of the materials on the EU experience in attracting private companies supplying and distributing electricity</td>
<td>SJSC &quot;Uzbekenergo&quot;, 6 Khorezm St., 100000, Tashkent, Republic of Uzbekistan</td>
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<td>AHEF.73.UZ</td>
<td>Approved</td>
<td>Development of recommendations for separation of electricity and heat production costs in cogeneration</td>
<td>State Committee on Demonopolization and Support of Competition, 18A Navoiy Str., 100011, Tashkent, Republic of Uzbekistan</td>
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<td>AHEF.74.UZ</td>
<td>Approved</td>
<td>Development of a model of restructuring of the electricity sector towards creation of a wholesale market</td>
<td>State Committee on Demonopolization and Support of Competition, 18A Navoiy Str., 100011, Tashkent, Republic of Uzbekistan</td>
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### Component B: Investment Facilitation

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<th>Responsible Party</th>
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<tbody>
<tr>
<td>PPF.34.UZ</td>
<td>Approved</td>
<td>Support to development of a leasing scheme for energy saving equipment in Uzbekistan</td>
<td>JSC &quot;UzbekLeasing International&quot;, International Banking and Finance Center, 1 Turab Tula Str., 100003, Tashkent, Republic of Uzbekistan</td>
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Annex 4:

AHEF results in Energy Market Convergence
SUMMARY OF AD HOC EXPERT FACILITY PROJECTS IMPLEMENTED UNDER COMPONENT A: ENERGY MARKET CONVERGENCE

Contents

1. INTRODUCTION ............................................................................................................................................. 2

2. PROJECTS IMPLEMENTED IN THE ENERGY MARKET CONVERGENCE THEME .................................................. 5
   2.1 DEVELOPMENT/IMPROVEMENT OF LEGISLATIVE FRAMEWORK (EMC-1) ............................................................. 5
   2.2 DEVELOPMENT/REVIEW OF TARIFF METHODOLOGIES (EMC-2) ........................................................................... 6
   2.3 COMPETITION PROMOTION AND THIRD PARTY ACCESS (EMC-3) .......................................................................... 7
   2.4 ESTABLISHMENT OF INDEPENDENT REGULATORS (EMC-4) .............................................................................. 8
   2.5 ENERGY COMPANIES’ PERFORMANCE IMPROVEMENT (EMC-5) ........................................................................... 9
   2.6 ENERGY MARKET MECHANISMS (EMC-6) ............................................................................................................ 10
   2.7 OTHER, CROSS-CUTTING ISSUES (EMC-7) ........................................................................................................... 11

3. CONCLUSIONS ............................................................................................................................................. 11
1. Introduction
This document aims at reviewing the assignments implemented by the SEMISE project under Component A (Energy Market Convergence). The main tasks of the project under component A were to identify the gaps and the obstacles impeding progress towards regional energy market convergence as well as ways of improving and accelerating the convergence process at regional and sub-regional levels. Further to that, the tasks were supporting the development of stable and secure energy relationships between Partner Countries (PCs) and between these and the EU by encouraging the adoption of compatible legislation and regulatory practices, common technical standards as well as statistical data collection and forecasting systems (in relation, for example, to energy demand and energy balance).

Through the Ad-hoc Expert Facility (AHEF), Component A implemented 22 applications for support from the PCs. Implemented projects under AHEF are classified according to these themes and by country in the Table below.

**Table 1. Applications implemented by PC, under Component A: Energy Markets Convergence**

<table>
<thead>
<tr>
<th>EMC-1: development/improvement of legislative framework</th>
<th>AM</th>
<th>AZ</th>
<th>BY</th>
<th>GE</th>
<th>KG</th>
<th>KZ</th>
<th>MD</th>
<th>TJ</th>
<th>TM</th>
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<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

| EMC-2: development/review of tariff methodologies        | 1  | 1  | 1  | 1  | 1  | 1   | 1  | 1  |     |    |    | 5      |

| EMC-3: competition promotion and third party access     | 1  | 1  | 1  | 1  | 1  |     | 1  | 1  |     |    |    | 2      |

| EMC-4: establishment of independent regulators,         | 1  | 1  | 1  | 1  | 1  |     | 1  | 1  |     |    |    | 2      |

| EMC-5: energy companies’ performance improvement        | 1  | 1  | 1  | 1  | 1  |     | 1  | 1  |     |    |    | 2      |

| EMC-6: energy market mechanisms                         | 1  | 1  | 1  | 1  | 1  |     | 1  | 1  |     |    |    | 4      |

| EMC-7: Other (cross-cutting, EIA, etc.)                 | 1  | 1  | 1  | 1  | 1  |     | 1  | 1  |     |    |    | 3      |

**Totals**                                               | 2  | 3  | 1  | 1  | 1  | 1   | 3  | 2  |     | 5  | 3  | 22     |

As an overview of the Partner Countries’ activity in getting Technical Assistance through SEMISE’s AHEF, it can be observed that the primary drivers for requesting and eventually getting AHEF assistance, reflected upon the respective priorities of key stakeholders in each of the PCs. Indicatively, these drivers comprised a good mix of developing/improving market-
related legal and regulatory instruments (i.e. Ukraine, Armenia); increasing the efficiency of infrastructure and improving certain aspects pertinent to the exploitation of abundant energy resources (i.e. Uzbekistan, Azerbaijan); but also ensuring and enhancing the level of security of supply and mitigating the risk and adverse effects of energy shortages (i.e. Tajikistan). It is also worthwhile to be mentioned that irrespectively of the aforementioned drivers, good working relations and self-motivation of the relevant Country Coordinators, Working Group Members as well as the respective representatives of the applicant organisations, played a role in following up tightly with the clarifications, evaluation and planning stages the application has had to undergo prior to its implementation. The following chart illustrates the country activity in Component A’ AHEF:

Looking from a different angle the interest of the applicants (as expressed in implemented under Component A AHEF assignments) was also biased to certain priority areas. Understandably, policy making (EMC-1) and tariff formulation (EMC-2) were equally the most important areas of cooperation with the PCs but there is still a lot of work to be done in the areas related to Third Party Access, Independence of the Energy Regulatory Authorities, energy market mechanisms and energy companies performance improvements. The following chart illustrates the thematic priories in Component A’ AHEF:
As a cornerstone of the approach followed for the provision of TA offered to the PCs via AHEF it is worthwhile to be mentioned that prior to looking into the specific situation in a PC that has submitted an application, a projection of the requested topic into what is the EU best practice was also given in the response. For instance, legislation is always country-specific, based on the traditions of those countries and on the existing legal framework. Nevertheless, when a specific request for review and improvement of energy-related legislation was submitted the country was exposed also to what is considered to be the European best practices as well as the relevant EU Acquis Communautaire. This approach was universally accepted with positive reactions by all PCs.

Going further into matching the interest of each PC to the seven thematic priorities in Component A’ AHEF, the following chart shows the number of assignments implemented by PC and thematic area:
2. Projects implemented in the energy market convergence theme

2.1 Development/improvement of legislative framework (EMC-1)

**Rationale:**
There were five small-scale projects implemented under this topic. Three of the projects were related with the establishment of regulatory framework for renewable energy sources, one dealt with the development of a new gas law and one with licensing in the energy sector.

There were applications from Azerbaijan, Belarus and Moldova asking for SEMISE assistance in development of primary and secondary legislation promoting renewable energy use. In the absence of gas sector organisation in Tajikistan, there was a request filled under SEMISE’s AHEF in order to help with recommendations in drafting a new law. SEMISE also advised the Ministry of Industry and Energy of Azerbaijan in respect to a possible introduction of licensing for the business activities in the energy sector.

**Implementation:**
SEMISE prepared a separate report on the EU best practice in promotion of electricity generation using renewable energy sources. Country specific recommendations on development (revision) of the legal framework promoting renewable energy sources were prepared for Belarus, Azerbaijan and Moldova.

In the case of the development of the Tajik gas law, the main principles were devised in order to comply with the EU legal framework and take into account specific features of the national legislation and those of the sector. In general, if even some primary legislation exists in Partner Countries there is a lack of secondary legislation (this was noticed mainly in Central Asia and Caucasus).

**Results-follow up:**
Although well-documented European experience exists in the area of RES market development, every country is trying on its own approach which in turn results in certain shortcomings. Therefore it is highly recommended to follow up this process coordinate with other international donors and offer TA to the Partner Countries in order for the EU best practices and lessons learnt to be clearly understood.
The gas law in Tajikistan is following the legislation preparation procedure but there is still a need to assist the Partner Countries in preparation of implementing regulators that would make the new law work.

It seems as if licensing is still a new instrument in regulation of energy sectors in Partner Countries and there is a great need for assistance, first of all, in Central Asian countries in developing licensing procedures as soon as they have been defined in their primary legislation.

2.2 Development/review of tariff methodologies (EMC-2)

**Rationale:**
Tariffs appeared to be equally important to legislation for Partner counties and there were five assignments completed by SEMISE in this area.

The Armenian gas company “Armrugsazprom” asked SEMISE to review the gas tariff calculation methodology applied in the country. The Moldovan gas company “Moldovagaz” wanted to become acquainted with the EU best practice and receive some recommendations on the gas transit tariffs calculation. The Tajik electricity company “Barki Tojik” asked for recommendations in developing separate tariffs for different activities in the sector (generation, transmission, distribution and supply). Furthermore, the State Committee on Demonopolisation and Support of Competition in Uzbekistan has requested assistance in the justification of thermal and electricity costs of Cogeneration of Heat and Power (CHP) plants. The Ukrainian National Power Company Ukrenergo acting as the national TSO sought assistance in order to determine a methodology under which the technical electricity losses may be treated under the proposed new market model.

**Implementation:**
SEMISE experts provided the international approach in electricity and gas tariff calculation, explained the latest developments in electricity and gas pricing in the EU member countries related with the implementation of the third energy market package and discussed various approaches in the transit tariff calculation (within the EU member countries transit is treated the same way as transmission, consequently, the same tariff calculation methodology is used).

For the case of allocating transmission losses in Ukraine a review of the EU practices with respect to the treatment of technical losses has been performed and recommendations on possible options were developed for Ukrenergo. The experts found some discrepancies in the
definition and treatment of losses in Ukraine and the EU and proposed a plan for elimination of these deviations.

In reality, detailed, sophisticated, modern gas tariff calculation methodologies were found to be approved by the national regulators in Moldova and Armenia but the problem of subsequent implementing regulations was found to be also persistent in this case.

**Results-follow up:**
As also mentioned above, implementation of the existing legislation, including normative documents, like tariff methodologies, is lagging behind in many Partner Countries. Future TA is required to put increased effort in building the capacities of the RAs and in improving the legislative consciousness of the countries. Moreover, direct assistance is considered necessary for developing the secondary legislation, implementing it and monitoring of the results.

### 2.3 Competition promotion and third party access (EMC-3)

TPA found to be lagging as a priority since it requires the basic elements of primary legislation for a liberalised sector operation to be already set forth by primary legislation. There were two applications implemented in this area which under different conditions looked at connection of customers to the electricity grid.

**Rationale:**
Connection of new consumers to the electricity network was the issue raised by the Azerbaijan regulator (Tariff Council) and Kazakh Transmission System Operator (KEGOC). Rules and procedures with regard to connection of consumers to the electricity grid and connection fees are still not sufficiently developed and implemented in many Partner Countries. In several countries it is left to the monopolistic distribution company to decide. The connection of power plants using renewable energy resources is a new important issue in many countries.

**Implementation:**
SEMISE experts provided information on the best practices of the EU countries with respect to rules, terms and cost of connection of new customers to the electric grid, analysed the current legislative and regulatory framework of Azerbaijan and Kazakhstan and developed some preliminary recommendations based on the aforementioned overview. Generally, several approaches to pricing for grid connection of new consumers are applied in the EU member-states. Depending on how the limits of financial responsibilities between consumers and grid companies are settled, the following connection techniques may be used: deep, shallow and
hybrid connection. Though the EU countries lack harmonised procedure for the connection of new customers, the European Regulators Group for Electricity and Gas (ERGEG) made an important step to tackle this issue, it published the Guidelines of Good Practice on Electricity Grid Connection and Access which were proposed by the SEMISE experts as a basis when developing rules for connection of new customers to the grid in Azerbaijan. KEGOC wanted just to be acquainted with different approaches and, by becoming acquainted with their positive and negative sides, to come to some conclusions of their own.

**Results-follow up:**
It is still not quite clearly understood by the Partner Countries that connection arrangements (i.e. technical conditions and charging methodology) cannot be treated separately from the rest of progress that needs to be made on the part of unbundling, competition, RES-E access to grid, etc. Yet even in a fragmented manner the level of understanding is getting bigger and should be rigorously supported in order to cover the full spectrum of interrelated aspects.

**2.4 Establishment of independent regulators (EMC-4)**
Perhaps the most underrated priority in Component A in spite the crucial role the independence of the energy regulatory authorities ought to play in energy sector restructuring.

**Rationale:**
Central Asian INOGATE Partner Countries (with the exemption of perhaps Kazakhstan), and also Belarus and Azerbaijan, have no independent energy regulatory authorities. SEMISE therefore expected to receive a number applications from these countries in assisting the establishment of independent regulatory agencies. Unfortunately, there were no applications on this topic, though some developments towards creation of a separate energy regulatory agency were noticed in Tajikistan, and Azerbaijan was analysing the option of establishment of a separate energy regulatory agency (now it is a part of the general Tariff Council, which is responsible for regulation of tariffs of all monopolies in the country).

SEMISE received only one application on the strengthening of the existing regulator when the Armenian Public Service Regulatory Commission (PSRC) asked for some assistance on development of guidelines for the evaluation of small hydropower feasibility studies and proposals on the licensing procedure for renewable energy applications.

**Implementation:**
The main tasks under this particular AHEF assignment were to identify the possible problems, issues, omissions and limitations on the quality of the feasibility studies and the efficiency of the
exploitation and provide recommendations on the evaluation procedures and the data that should be provided in the feasibility studies submitted by potential developers to the PSRC as part of the licensing procedure.

**Results-follow up:**
TA is equally important for the establishment of independent regulatory agencies in the Partner Countries as well as to the PCs where such RAs do not exist at all. Significant attention towards strengthening of the existing regulatory agencies is required - in both the early stages but also when the market players are gaining serious market power - for assuring the RA’s enjoy real independence and improving their abilities to take independent well-grounded decisions.

### 2.5 Energy companies’ performance improvement (EMC-5)

Contrary to the expectation energy companies performance improvement was not the focus of the Partner Countries as expressed in the AHEF applications. Nevertheless, Improvement of the energy companies’ performance in the INOGATE Partner Countries is a task well understood and less politically sensitive. One may discuss if private companies operate more efficiently or if companies in the liberalised market act more efficiently, in all cases improvement of efficiency is a clear goal.

**Rationale:**
SEMISE received applications from Moldova and Uzbekistan asking for advice on improvement of operation of different companies in different aspects.

The Moldovan gas company “Moldovagaz” was in search of EU best practices in respect to payment collection approaches and received some advice on how to improve the payment collection rates. Uzbek gas company Uztransgaz received advice on the reduction of non-technical gas losses.

**Implementation:**
Taking into account the complexity of the tasks which should be solved dealing with gas areas SEMISE experts provided recommendations to Moldovagaz on measures which are under direct control of the gas company but also for those where the Government and municipalities intervention is required. The problem was mostly beyond the direct competence of the company as the main indebted customer was the district heating sector.
For Uztransgaz, the experts proposed a range of technical, procedural and administrative measures that either has been tested in other countries or otherwise may be considered by the company. These were further analyses as components of a draft of measures for the development of an Action Plan aim to a gradual reduction the level of non-technical losses.

**Results-follow up:**
Reduction of technical and non-technical losses, optimisation of costs and activities, in general comprise activities with tangible results. Implementation of the recommendation (in full or in part) as well as the monitoring and verification of the expected benefits is in the direct interest of the energy companies and moreover are reflected in their balance sheets.

**2.6 Energy market mechanisms (EMC-6)**
This particular area was dominated by Ukraine which comprises one of the most mature energy markets in the INOGATE partner countries. What was difficult to be justified was the modest participation of Moldova (which is also part of the Energy Community) but also Kazakhstan.

**Rationale:**
Restructuring and liberalisation of electricity and gas markets is going in a different speed in the partner countries. Countries with more developed market reforms had a heavy agenda on different market models and mechanisms. SEMISE received three applications from Ukraine (one from the National Power Company “Ukrenergo” and two from the market operator “Energorynok”) as this country is restructuring its electricity market with the goal of creating a fully competitive wholesale market in line with EU Electricity Directives. One novel application was also received from Georgia, which had to do with the cooperation mechanisms provided in the Renewables Directive.

**Implementation:**
SEMISE experts advised the Ukrainian power company “Ukrenergo” in development of rules pertinent to pricing and procurement of ancillary services – both items are very important in a liquid wholesale market. Market operator “Energorynok” received from SEMISE experts a good understanding on how energy exchanges are operated in Europe followed with some recommendations on how it could be implemented in Ukraine.

The Georgian energy Regulatory Authority is in the process of evaluation of alternative options in respect of the mechanisms that will be developed on trading of electricity produced using renewable energy sources (RES-E) with the EU countries as stipulated the recent EU Directive.
Results-follow up:
With the exemption of Ukraine, which is well on course of developing the necessary market mechanisms for compliance to the Energy Community Treaty requirements, the participation of the PC was relatively modest. The request from Georgia on the other hand was quite forward-thinking and would potential be of an interest of many ENPI countries. Both applicants are reportedly underway in developing the relevant regulations taking into account the recommendations provided by SEMISE.

2.7 Other, Cross-cutting issues (EMC-7)
Though more flexible in its definition this priority didn’t even manage to surpass the interest on legislation and tariff setting.

Rationale:
A diversity of thematic areas involving a standards Technical Committee organisation for Kyrgyzstan, a balancing market IT system specification for the Transmission System Operator and the Market Operator in Ukraine and a regional Central Asian cross-border electricity exchange workshop was cover by Component’s A AHEF.

Implementation:
For the Kyrgyz and Central Asia cases workshops in which the country experts could express their positions but also exchange view with EU experts was selected as the preferable approach. In respect of the technical specification and quotation for an integrated IT system dealing with wholesale market and its segments (balancing, ancillary services, etc) a pre-feasibility study has been prepared in order to assist the beneficiary in procuring the system.

Results-follow up:
Standards harmonisation and creation of regional energy markets are still high in the agenda of assistance offer by the EU to the Partner Countries. These pilot projects are considered a good starting point for enhancing the cooperation and improve the plurality in participants for the common benefit of ensuring affordable, reliable and sustainable energy resources in the long run.

3. Conclusions
There are certain clear messages deriving for the AHEF implementation experience which could be summarised as follows:
• There is a certain need for demand-driven TA to be provided to the INOGATE Partner Countries;

• The plurality in participation (depending on the actual needs and commitments under the Baku Initiative) should be enhanced. This is particularly relevant to “more advanced” Partner Counties that may have also undertaken other commitments such as the Energy Community Treaty as well as to the “less advanced” countries which may have a genuine interest in getting access to energy resources and/or markets or even have bilateral co-operation agreements with the EU (MOUs);

• Thematic priorities are still valid but establishment of new and strengthening the capacity of existing independent RAs should be promoted;

• Responses from the beneficiaries and experience of the experts have shown that there are true merits in combining EU and local expertise as well as providing assistance to beneficiaries in the form of combination of studies, seminars or trainings;

• Applications implemented so far may be used as a model for the future in order to help the PCs understand better their needs and come up with time-tested solutions for their country-context.
Annex 5: AHEF results in Sustainable Energy
SUMMARY OF AD HOC EXPERT FACILITY PROJECTS IMPLEMENTED UNDER COMPONENT C: SUSTAINABLE ENERGY

Contents

1. INTRODUCTION........................................................................................................................................ 2

2. PROJECTS IMPLEMENTED IN THE SUSTAINABLE ENERGY THEME ............................................................. 2
   2.1 DEVELOPMENT OF ENERGY AUDITING SKILLS..........................................................................................2
   2.2 ENERGY AUDITORS TRAINING....................................................................................................................3
   2.3 ENERGY AUDIT TRAINING CENTRES .............................................................................................................4
   2.4 EE AND RES IN ENERGY SUPPLY STATIONS ..............................................................................................5
   2.5 DEVELOPMENT AND IMPLEMENTATION OF NATIONAL AND LOCAL GHG REDUCTION PLANS ......................6
   2.6 DEVELOPMENT OF ENERGY AGENCIES .......................................................................................................7
   2.7 DEVELOPMENT OF EE/RES INDUSTRIES .....................................................................................................8
   2.8 DEVELOPMENT OF ESCOs.........................................................................................................................10
   2.9 ENERGY MANAGEMENT STANDARDS........................................................................................................11

3. CONCLUSIONS........................................................................................................................................ 12
1. Introduction

The objective of this document is to review the assignments implemented by the SEMISE project under Component C (Sustainable energy). The main tasks of the project under component C were promoting the development of sustainable energy policies and assisting the Partner Countries in their implementation, focusing on energy efficiency in all pertinent sectors, renewable energies, and the mitigation of the negative impact of energy-related activities on the environment.

Particularly referring to the Ad-hoc Expert Facility (AHEF), component C implemented 25 applications for support from the PCs. Implemented projects under AHEF (tasks) are classified according to these themes and by country in the Table below.

Table 1: Implemented applications, by PC, under sustainable energy topics

<table>
<thead>
<tr>
<th>Key areas</th>
<th>AM</th>
<th>AZ</th>
<th>BY</th>
<th>GE</th>
<th>KG</th>
<th>KZ</th>
<th>MD</th>
<th>TJ</th>
<th>TM</th>
<th>UA</th>
<th>UZ</th>
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</thead>
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<tr>
<td>Development of energy auditing skills</td>
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<td>1</td>
<td>4</td>
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<tr>
<td>National/local GHG reduction plans</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
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<td>2</td>
<td>13</td>
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<tr>
<td>Development of energy agencies</td>
<td>2</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Development of EE/RES industries</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
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<tr>
<td>Development of ESCOs</td>
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<td></td>
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<td>1</td>
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<td>2</td>
<td></td>
<td></td>
<td></td>
<td>25</td>
</tr>
</tbody>
</table>

2. Projects implemented in the sustainable energy theme

2.1 Development of energy auditing skills

There were 13 small-scale tasks implemented under this topic, indicating that building energy auditing skills accounted for a substantial part of technical assistance provided under this component due to: a) strong demand for this theme during fact finding missions in 2009 and after; and b) new legislation in many PCs requires industrial energy audits. Requests can be grouped into 3 major categories:

a. Direct energy auditors training,
b. Assistance in establishing auditor training centres,

c. Assistance in assessing and demonstrating the potential for EE and RES in energy supply stations.

Approach and results for each one of these specific areas addressed are shown below:

2.2 Energy Auditors training

**Rationale:**
At present the capacity for energy auditing among engineers and other professionals is strongly lacking in most Partner Countries (PCs). Most energy audit training by other international donors and sponsors misses the point of life cycle cost (LCC) feasibility and bankability. In that context, training on energy audit analysis was the most demanded technical assistance (TA) in SEMISE, with applications coming from 8 entities (Ministries, Institutes, Agencies, EE centres etc), with demand being even more than SEMISE could fulfil in its time span.

**Implementation:**
SEMISE designed and delivered a workshop-seminar course named, “Energy audit analysis for bankable projects”, aiming to train engineers on how to present feasible EE/RES project proposals to investors, including the ability to conduct a LCC analysis to obtain key financial parameters of an investment (net present value (NPV) and internal rate of return (IRR)).

*Participants presenting their work (Almaty, KZ – left; Bishkek, KG - right)*

Course materials included spread sheets with instructions and practical examples of how to conduct the analysis. Participants learned by doing, by forming groups and carried out
workshop exercises to analyse audit data for potential EE and RES projects and made presentations to “investors” (rest of the class) to convince them to invest in the projects they had developed. In that context the communication component in this work was emphasized.

Participants working in groups, analyzing an ECM (Minsk, BY – left; Yerevan, AM - right)

Results-follow up:

More than 160 energy professionals in five countries gained expertise and know how in analysing and promoting energy efficiency investments, within a train-the-trainers scheme that will allow for replicability and sustainability of results. Out of these courses new skills have been created which if effectively transferred to top national decision makers, will facilitate the make rational business decisions about implementation of EE/RES.

As a result the customised workshop-seminar is fully developed, and the package may be delivered to any applicant under any INOGATE project in the future.

2.3 Energy Audit Training Centres

Rationale:
Training centres for energy auditors are a pressing need in countries that have recently mandated industrial audits but have no trained cadre to conduct them. Two technical institutes and one state enterprise requested business plans to establish and operate training centres for professional energy auditors in Kazakhstan and Kyrgyzstan.

Implementation:
SEMISE responded by developing business plans for the new energy audit centres, through the exploitation of expertise from Ukraine where through experts operating such a centre successfully for a decade. The SEMISE business plans projected sustainable operations with IRRs between 30% and 60%.
**Results-follow up:**

Capacity building and concrete proposals for *operation and financial sustainability of energy audit centres* were provided by SEMISE for training centres in Kazakhstan and Kyrgyzstan. Increased institutional strengthening will facilitate efficient operation of these centres and also ensure financial sustainability and offering of effective services.

As an example for one applicant which is a state enterprise that licensed engineers to perform energy audits and other engineering services in Kazakhstan, in the spirit of serving citizens, SEMISE proposed a range of services that this authority could offer to its certified engineers in return for the licensing fee, which will result in improving its public apprehension.

**2.4 EE and RES in energy supply stations**

**Rationale:**

Small energy producers for electricity and heat in PCs often lack expertise to assess and analyse energy efficiency and RES projects. In that context, producers in three PCs requested advice on how to improve their operations by employing EE and RES, and more specifically TA was requested for two district heating boiler houses in Kyrgyzstan and 5 small hydro-power plants (SHPPs), three in Ukraine and two in Kazakhstan.

**Implementation:**

The way to identify opportunities for such improvements is through an energy audit. Therefore, SEMISE retained international energy audit specialists and local process specialists to conduct the audits and present opportunities for EE improvement.

*SEMISE energy auditors above dam taking depth measurements*
Results-follow up:
SEMISE identified important opportunities for sustainable energy investments. All recommendations were feasible by life cycle cost (LCC) analysis, showed a positive net present value (NPV), and had an internal rate of return (IRR) greater than the prevailing discount rate. In addition, local experts were provided on the job training on the analysis and assessment of EE and RES projects through LCC analysis. The Ukrainian beneficiary is using the audit reports to implement SEMISE’s recommended plant improvements.

At the request of the Ukrainian Ministry of Fuel & Energy, SEMISE produced a methodology for SHPP energy audits that may be used by SHPP operators in all PCs.

2.5 Development and implementation of national and local GHG reduction plans
SEMISE implemented four small-scale tasks under this theme, in two discrete areas:

Area 1: Preparation of Municipalities for the Covenant of Mayors

Rationale:
A major area of interest in reducing greenhouse gas (GHG) emissions came to SEMISE in the form of membership in the Covenant of Mayors (CoM) initiative. Municipalities in three PCs, Sumgayit AZ, Yerevan AM and Tbilisi GE, applied for TA to begin participation in the CoM, under which they will commit to reducing their GHG emissions 20% from a baseline year to 2020.

Implementation
To each city, SEMISE delivered training and a comprehensive report with appendices on how to get started, especially in the first critical year of membership. One appendix was
terms of reference (ToR) for retaining a GHG specialist, a firm requirement for GHG accounting.

For Tbilisi, being the only city out of the three whose mayor had already signed the Covenant before SEMISE started implementing SEMISE a) conducted a workshop, and b) gathered potential donors at a round table with Tbilisi and other Georgian municipalities.

**Results:**
Cities received comprehensible advice on how to prepare for successful inclusion within the CoM and particularly how to develop Sustainable Energy Action Plans (SEAP), through dedicated methodologies. As a result of the project and follow up assistance from USAID, the Tbilisi Municipality submitted its SEAP within the deadline, which is very important and therefore credit should be given to Tbilisi Municipality for managing the process and taking advantage of available assistance to meet the first major commitment.

**Area 2: GHG Projections**

**Rationale:**
One application was submitted from the Ministry of Natural Resources and Environmental Protection in Belarus to project greenhouse gas (GHG) emissions in the energy sector until 2050.

**Implementation:**
SEMISE GHG experts assessed the current situation and analysed future prospects using the LEAP model, software designed for this purpose and delivered a comprehensive report.

**Results:**
The Ministry of Natural Resources and Environmental Protection has received an updated and clear estimation on the possible scenarios for GHG emission reduction options in the energy sector. The SEMISE report was very well received and is being used as the basis for further work by the Ministry.

**2.6 Development of energy agencies**
SEMISE implemented three small-scale tasks under this theme. Namely:

**Rationale:**
Recent or upcoming legislation in many PCs envisages the creation of new entities within or close to the Ministries of Energy that deal exclusively with promoting EE and RES policies. In
most cases TA and capacity building is needed toward these entities, in order to achieve appropriate organisational setup and cope with their additional functions that will arise out of the new Legislation. Within SEMISE assistance was required in 3 applications by the following entities:

- Kazakhstan- Divisions of Energy Efficiency and Renewable Energy Sources
- Azerbaijan-State Agency for RES

**Implementation**
SEMISE provided on-the-job capacity building to the staff of these Agencies including program ideas to comply with the new energy legislation, as well as structure and qualifications of personnel. In Azerbaijan, SEMISE implemented two sub-projects to assist the new Agency, with the first stage focusing on its structure and a communication strategy to promote its aims and role among the population. The second TA built on the first TA by offering professional profiles of required technical staff and developing communication tools.

**Results**
Two EE/RES Agencies improved their capacity in terms of mapping human resources and implementing effectively the most suitable organisational and technical set up so as to fulfil their role according to the new regulatory context. In addition the Agencies received tools for communication operations. Moreover, for Azerbaijan’s ABEMDA, the website text and communication materials prepared by SEMISE were used in the final website launched www.abemda.az.

### 2.7 Development of EE/RES industries

**Activity in this theme consisted of one TA task for EE, one for RES, and one for energy services companies (ESCOs).**

**EE buildings industry in Armenia**

**Rationale:**
According to recent EU experience, the new regulatory context on buildings energy performance demands a competent industrial sector producing energy efficient materials. This was particularly encountered in Armenia where demand for local EE materials for buildings is arising from new regulation that poses stricter demands for energy performance.
In that context R2E2 fund in Armenia requested assistance in formulating a strategy for the development of the local industries on EE materials.

**Implementation:**
SEMISE performed a SWOT analysis and assessed the feasibility of improving the manufacturing sector that can produce energy efficient building materials and found that intellectual and physical capacity exists in Armenia for this development, but the small market lacks enforcement of standards, which need to be improved, together with the culture of energy conservation.

**Results-follow up:**
SEMISE drafted a multi-step approach in order to improve the regulatory and market context so that the EE buildings materials industry is developed.

**Wind potential estimations**

**Rationale:**
Despite high wind energy potential in many PCs, wind energy development has not been significantly exploited. Particularly for offshore areas, awareness of the actual potential including site measurements is lacking. Requests came from the Ministry of Energy in Azerbaijan and Turkmenistan, referring to TA in defining at a pre-feasibility level, the potential for wind energy generation near the Absheron Peninsula and preliminary work regarding a wind atlas respectively.

**Implementation**
In Azerbaijan, SEMISE made a technical evaluation of offshore wind power potential on the basis of recalculated weather data, excluding areas with interest on oil and gas exploration, navigation and high visual impact, based on information regarding local conditions, which showed excellent potential. For one selected area of the Caspian Sea a prefeasibility study was carried out to show the technical elements of a potential wind park and financial viability including key parameters that influence benefits.
Results-Follow up
The Ministries possess effective tools for planning further actions in defining wind energy potential for onshore or offshore areas. In particular for Azerbaijan, the Ministry of Energy possesses a preliminary assessment of offshore wind potential and pre-selection of locations for the construction of offshore wind parks, as well as a roadmap for follow up actions including a feasibility analysis. In addition local experts enhanced their expertise on wind energy analysis and modern simulation tools for identifying wind resource. A more detailed feasibility study at a procedure proposed by SEMISE will be the needed subsequent stage.

2.8 Development of ESCOs

Rationale:
Regulatory and institutional framework on ESCOs is generally lacking in most PCs. There is hence a desire to exploit experience from relevant success stories already implemented. A request from Georgia focused on the provision of know-how and expertise from the operation of ESCOs in similar environments.

Implementation
SEMISE developed and presented a seminar on the operation of ESCOs in Georgia. Two of the lecturers were from Ukresco, the Ukrainian ESCO that has operated successfully for more than a decade. Besides explaining the principles and practices from the experience of Ukresco in Ukraine, the seminar also included a round table with bankers participating.

In Turkmenistan, ToR for a follow up work regarding the set up of an an intergated wind measurement campaign were produced.
**Results**

Institutional capacity on ESCO development in Georgia was improved by training Georgian experts on the approach and steps in developing ESCO market.

### 2.9 Energy management standards

**Rationale:**
Legal and institutional capacity on energy management is missing in the PCs. The adoption/implementation of the newly introduced standard will gradually demand TA in developing capacities in that respect. A request from National Agency on Rational Use of Energy Resources - Ukrainian Union of Industrialists and Entrepreneurs focused on TA on of energy management standards. The beneficiary specifically requested an expert from Ireland or Denmark because these two countries are most advanced in implementing energy management standards.

**Implementation**
SEMISE recruited a foremost expert on energy management standards from Ireland, and provided up-to-date information on ISO 50001, through a specially developed training course. TA consisted of a two day seminar and a report with advice to organizations on getting started with implementation of the standard and improvement of the regulatory context in Ukraine.

*SEMISE Expert Ian Boylan delivering a lecture on Energy Management System Standard*

**Results-follow up**
Staff form governmental, education and other institutions, and other stakeholders increased their capacity on energy management standards and means to implement them.
In addition, through the produced report the administration possesses **guidance on how the barriers to implementation of the EM standards can be overcome** and how the use of the standard can **integrate into the laws** governing the country.

### 3. Conclusions

With the 25 tasks accomplished in Component C, SEMISE provided a number of tools to conduct sustainable energy policy. They are all replicable. INOGATE now has a ‘menu’ of TA tools to offer the 11 PCs. As examples:

a) **Seminars on energy audits**: The materials have been prepared, and the experts are identified and experienced to repeat the multi-day seminars (energy audit analysis, ESCO operation, ISO 15001 Energy Management Standard).

b) **Business plans**: Since three business plans for energy auditing centres have already been written, more may be written with minimum effort.

c) **EE/RES energy audits**: Uncovering EE and RES potential in energy producing plants still requires field work in every case, but SEMISE developed the methodology well, and the experts are experienced to repeat the tasks with less effort.

d) **Assistance to Agencies**: SEMISE has provided targeted assistance on organisation, communication and management tools to newly created Agencies. Since similar existing or to be created entities will be in demand for such TA, respective assistance can be provided under a well-established approach.

All SEMISE tasks had successful conclusions and may be replicated. Based on the past, INOGATE now has something concrete and beneficial to offer PCs in the future.
Annex 6:

PPF results in Investment Attraction
SUMMARY OF PROJECT PREPARATION FACILITY PROJECTS
IMPLEMENTED UNDER COMPONENT B: INVESTMENT ATTRACTION

Contents
1. INTRODUCTION ........................................................................................................................................ 2
2. PROJECTS IMPLEMENTED IN THE INVESTMENT ATTRACTION THEME ...................................................... 3
   2.1 SPECIFIC ASSISTANCE .......................................................................................................................... 3
   2.2 CAPACITY BUILDING ............................................................................................................................ 4
   2.3 DONOR COORDINATION ....................................................................................................................... 6
3. CONCLUSIONS .......................................................................................................................................... 7
1. Introduction

The objective of this document is to review the assignments implemented by the SEMISE project under Component B (Investment attraction). The main task of the project under component B was the facilitation of financing by the banking sector (regional or local) or international institutions, of energy-related projects initiated by the public sector, energy companies and/or private investors, with a particular emphasis on energy efficiency, energy conservation, renewable energy projects and infrastructure of common regional interest (whenever possible with the available budget resources), through a project preparation facility.

Through the Project Preparation Facility (PPF), component B implemented 9 applications for support from the PCs. In the table below, the projects implemented under PPF are classified by country and according to the three main types of support provided (i.e. specific assistance, capacity building and donor coordination).

*Table 1: PPF Implemented applications, by PC, by type of support*

<table>
<thead>
<tr>
<th>No.</th>
<th>PPF No.</th>
<th>Title</th>
<th>Country</th>
<th>Type of support</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>08</td>
<td>Capacity building in development of EE and investment projects</td>
<td>Belarus</td>
<td>Capacity building</td>
</tr>
<tr>
<td>2</td>
<td>09</td>
<td>Development of the financial product for Belgazprombank</td>
<td>Belarus</td>
<td>Specific assistance</td>
</tr>
<tr>
<td>3</td>
<td>17</td>
<td>Strengthening Bank’s position in carbon credits generating and trading</td>
<td>Armenia</td>
<td>Capacity building</td>
</tr>
<tr>
<td>4</td>
<td>34</td>
<td>Development of a leasing scheme for energy efficient equipment</td>
<td>Uzbekistan</td>
<td>Specific assistance</td>
</tr>
<tr>
<td>5</td>
<td>37</td>
<td>Capacity building in development of EE and RES investment projects</td>
<td>Ukraine</td>
<td>Capacity building</td>
</tr>
<tr>
<td>6</td>
<td>38</td>
<td>Strengthening Bank’s position in carbon credits generating and trading</td>
<td>Armenia</td>
<td>Capacity building</td>
</tr>
<tr>
<td>7</td>
<td>39</td>
<td>EE investment promotion</td>
<td>Ukraine</td>
<td>Specific assistance</td>
</tr>
<tr>
<td>8</td>
<td>40</td>
<td>TA for the E5P Fund</td>
<td>Ukraine</td>
<td>Donor coordination</td>
</tr>
<tr>
<td>9</td>
<td>41</td>
<td>Capacity building for lessors in EE and RES</td>
<td>Ukraine</td>
<td>Capacity building</td>
</tr>
</tbody>
</table>
2. Projects implemented in the investment attraction theme

2.1 Specific Assistance

Three (3) applications implemented targeted the concrete investment process of a local financial institution. Given the confidential nature of specific banking dossiers, the final reports produced under the specific assistance area of support are not disseminated beyond the beneficiary; however, the main ideas have been prepared in a wider dissemination document or the project fiche which has been uploaded to the INOGATE web portal.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Title</th>
<th>Country</th>
<th>Deliverable</th>
<th>Type of support</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPF.09.BY</td>
<td>Development of financial product for EE investment</td>
<td>Belarus</td>
<td>Final Report (confidential to beneficiary)</td>
<td>Specific assistance</td>
</tr>
<tr>
<td>PPF.34.UZ</td>
<td>Support to development of a leasing scheme for energy saving equipment in Uzbekistan</td>
<td>Uzbekistan</td>
<td>Final Report (confidential to beneficiary)</td>
<td>Specific assistance</td>
</tr>
<tr>
<td>PPF.39.UA</td>
<td>EE investment promotion</td>
<td>Ukraine</td>
<td>Final Report: EE Credit Process Decision Flow (confidential to beneficiary)</td>
<td>Specific assistance</td>
</tr>
</tbody>
</table>

In the first assignment, PPF.09.BY, the SEMISE team elaborated an approach for selecting energy efficient technical solutions and based on these, proposed the financial scheme the bank may offer potential investors. The project work involved assessing a suitable strategy for EE project finance justifying the Beneficiary’s involvement; identifying EE pilot project(s) with high environmental positive impact to be financed by the Beneficiary in local market conditions; and assisting the Beneficiary to design innovative and affordable EE “Special Financial Product” (SFP) to be targeted at corporate clients.

The second assignment, PPF.34.UZ, aimed at developed a new means to introduce energy efficient equipment – i.e. through leasing. The innovative assignment involved the SEMISE team analysing the energy saving potential of four industrial branches selected by the Beneficiary – namely, poultry farming, pulp and paper, textile industry and building materials industry. For each of these industries, some common energy efficiency equipment was
selected: CHP sets, small boilers, compressors, variable speed drives and solar panels. Then, leasing schemes for these types of equipment were developed which combined the Western model of leasing pattern with the scheme used by the Beneficiary.

The third assignment, PPF.39.UA, was by far the most comprehensive (from the EE investment process point-of-view) assignment implemented for the Beneficiary under the PPF. SEMISE had a unique opportunity to undertake the mapping of the internal decision-making process in the bank and propose several incorporations into the process aiming at promotion of projects with substantial energy efficiency component. Once the SEMISE advice is introduced by the bank – i.e. meaning once the basics of energy efficiency (energy baseline, energy audit, monitoring and verification of energy savings) are introduced into the decision making process - the bank will be able to evaluate energy investment projects in a high quality manner. This SEMISE advice, when fully implemented, may pave the way for other banks to adapt their procedures in a similar mode.

### 2.2 Capacity Building – PPF-related

Five (5) applications were implemented under this topic. The approach and results for each one of these applications is set out below.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Title</th>
<th>Country</th>
<th>Deliverable</th>
<th>Type of support</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPF.08.BY</td>
<td>Capacity building: Specifics of Investment Projects in EE and RES</td>
<td>Belarus</td>
<td>Training Course Manual</td>
<td>Capacity building</td>
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<td></td>
<td></td>
<td></td>
<td>(on INOGATE Web portal)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Investment and Carbon Credits Generating and Trading</td>
<td></td>
<td>Banks role</td>
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<td></td>
<td></td>
<td></td>
<td>(on INOGATE Web portal)</td>
<td></td>
</tr>
<tr>
<td>PPF.37.UA</td>
<td>Capacity building in development of EE and RES projects</td>
<td>Ukraine</td>
<td>Training Course Manual</td>
<td>Capacity building</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(on INOGATE Web portal)</td>
<td></td>
</tr>
<tr>
<td>PPF.38.AM</td>
<td>Strengthening Bank’s Position in Emissions</td>
<td>Armenia</td>
<td>Toolkit (Generic) - Carbon Credits</td>
<td>Capacity building</td>
</tr>
</tbody>
</table>
Assignments PPF.08.BY and PPF.37.UA aimed at supporting investments in EE and RES by providing general training to banks’ personnel on energy and sustainable energy issues. The training was based on a specially prepared manual which was given to the participants (i.e. middle-level bank managers, credit officers) and provided for a fundamental understanding of energy efficiency as a technical process and also as an area of business. SEMISE recommendations to participants focused mostly on the removal of barriers for investment projects that contained a significant energy efficiency component. With the reference to various instruments, the SEMISE team explained typical investment schemes for EE and RES projects and the ways the risks of these projects may be mitigated.

Assignments PPF.17.AM and PPF.38.AM were dedicated to facilitating the investment climate in Armenia by training Armenian beneficiary bank personnel on the principles of using Clean Development Mechanisms (CDM) as a means to developing investment projects. SEMISE also assisted beneficiaries in preparatory work aiming at achieving profit from carbon trading. A toolkit describing the CDM mechanism was developed by SEMISE and introduced in the form of training to the banks participating in the projects.

The PPF.41.UA was an assignment promoting energy efficient equipment for the Ukrainian leasing companies associated in the Union of Ukrainian Lessors. The compendium presenting more than 10 widely used equipment was prepared by the SEMISE and submitted to the Union’s office, while being uploaded to the INOGATE web portal for further dissemination.
2.3 Capacity Building – Other

As a rule, there are well-established national banks associations in the INOGATE PCs, and provision of capacity building services to the member banks is one of their statutory duties. Therefore, the SEMISE’s initiated organization of the Training Courses “Specifics of Investment Projects in EE and RES” taking advantage of the support by the respective national banks associations.

Since the solid and broadly recognised Moldovan Banks Association (MBA) (http://www.abm.md) already declared their support to such an initiative in writing, it was proposed to organize the Training Course in Chisinau, Moldova, while using the MBA’s support and, in particular, that of the "ABM Consulting" Financial-Banking Centre thereof, mainly for the contacts with the interested participants and further dissemination of the information.

The Training Course was successfully implemented in Chisinau, Moldova, and 7 representatives of five (5) Local Finance Institutions plus 2 representatives of the MBA attended thereto.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Title</th>
<th>Country</th>
<th>Deliverable</th>
<th>Type of support</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPF.CB.MD</td>
<td>Capacity building: Specifics of Investment Projects in EE and RES</td>
<td>Moldova</td>
<td>Training Course Manual (on INOGATE Web portal)</td>
<td>Capacity building</td>
</tr>
</tbody>
</table>

2.4 Donor coordination

One application was implemented under this topic as follows:

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<tr>
<th>Assignment</th>
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<th>Type of support</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPF.40.UA</td>
<td>Technical assistance for E5P Fund in Ukraine</td>
<td>Ukraine</td>
<td>Final Report (confidential to beneficiary)</td>
<td>Donor coordination</td>
</tr>
</tbody>
</table>
This assignment was different from the others in that it involved helping the set-up of a coordinated fund of several international donors (led by the EU). The fund is called “E5P Fund” targets EE projects in Ukraine. SEMISE elaborated an independent assessment of the existing rules, principles and procedures of the Fund and gave recommendations on how the basics of the Fund can be significantly improved in order to raise the robustness, stability and transparency of the Fund. In parallel to this task, the SEMISE individual experts provided evaluations, twice, on the Fund’s project portfolio, giving recommendations on concrete project proposals.

Moreover, the SEMISE team produced a comprehensive report with recommendations on how to streamline the management process and on how to assess and approve applications which has been the subject of productive discussion with the Beneficiary and by Fund’s Contributors. By introducing the proposed changes and corrections, the Fund will operate more optimal and safe.

3. Conclusions
With the 9 applications accomplished in Component B, SEMISE provided a number of tools and means to supporting investments in sustainable energy in four Partner Countries.

In all Partner Countries, the market for financing of EE/RES projects is still premature. Even in countries where some significant financial support instruments are in place (GEEP in Georgia, UKEEP in Ukraine, MOSEFF in Moldova), these kind of projects (EE/RES) are still rare.

In the countries where the IFIs operate with credit facilities, IFIs usually offer technical assistance linked to these credit facilities and therefore smaller facilities like the PPF has no chance to compete.

LFIs definitely need capacity building in the area of EE and RES. A few banks have established a strategy to be the leader/pioneer in the country in this area. Only working with these leaders there is a chance to get tangible results in future INOGATE projects.

All SEMISE tasks had successful conclusions and have left materials in place to be largely replicable. The experience of the PPF can be used as a basis for building on the trust gained with the financial sector in the Partner Countries.