(Contract No. INCO – CT – 2006 - 31444)

PROMITHEAS -2

THE EU-BSEC ENERGY AND CLIMATE POLICY NETWORK

Specific Support Actions (SSA)
for Multilateral co-ordination of national RTD policies and activities
FP6-2002-INCO-COMultilatRTD/SSA-5

D14. Final Conference report

Prepared by
Energy Policy and Development Centre (KEPA)

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Project Coordinator Name: Prof. Dimitrios Mavrakis
Project Coordinator organization name: NKUA-KEPA

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National and Kapodistrian University of Athens (NKUA)
Energy Policy and Development Centre (KEPA)

Contact details

Nikolaos Kontinakis
Panepistimiopolis, KEPA Building
157 84 Athens, Greece
Tel.: +30-210-727-5732, Fax: +30-210-727-5828
e-mail: epgsec@kepa.uoa.gr, URL: http://www.kepa.uoa.gr

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Summary

Work package 4 of PROMITHEAS-2 contained two Tasks (*Task 4.1: Ad-hoc visits* and *Task 4.2: Final Conference*). Task 4.2 concerned the organisation of a Final Conference, aiming to the enhancement of regional and trans-regional cooperation with the approval of a Memorandum of Cooperation in the perspective of the network activities. It also aimed to the dissemination of network outcomes.

This report regarding "***Task 4.2: Final Conference***" contains detailed information about the work for this task that was launched in September 2007 and was completed in October 2008. The Final Conference titled "**International Black Sea Energy Policy Conference - *Energy Investments and Trade Opportunities***" was held on 8-9 October 2008 in Athens, Greece with the participation of more than one hundred (100) policy makers, stakeholders and scientists. The event was under the auspices of BSEC and was included as a BSEC event in the agenda of the Albanian Chairmanship. The Final Conference was divided into three main groups of sessions: Policy and Business, Scientific and Exclusive activities sessions.

List of participants

#	Last Name	First Name	Country	Organization	Position
1	ABULASHVILI	George	Georgia	Energy Efficiency Centre	Director
2	AFEZOLLI	Naske	Switzerland	EGL AG	Head Gas & Power SEE
3	ALEKSIDZE	Zurap	Greece	Embassy of Georgia	Deputy Head of Mission, Minister-Counsellor
4	ALESTA	Katerina	Greece	Ministry of Economy and Trade	Department of International Development Projects & Cooperation
5	ALIYEVA	Z.	Azerbaijan	GPOGC	Professor
6	AMBROS	Tudor	Moldova	Technical University of Moldova	Professor
7	ANDRIANESIS	Panagiotis	Greece	University of Thessaly	Ph. D. Candidate
8	ANDRIANOPOULOU-DASKALAKI	Erica	Greece	IENE	Member of the IENE Committee for “Energy and Environment”
9	ANTONIOU	Margarita	Greece	Ministry of Economy and Finance	Head of Department for International Development Projects &Cooperation
10	ASIMAKOPOULOS	Dimosthenis	Greece	NKUA	Vice Rector
11	AVLONITIS	Andreas	Greece	Technical Chamber of Greece	Chemical Engineer
12	BALAN	Gheorghe	Romania	Wec-Romanian National Committee	Executive Director
13	BARDICI	Anca Simona	Romania	ISPE	Power Systems Project Manager
14	BREDNEV	Vladimir	Greece	Embassy of Russian Federation	Second Secretary, Economic Affairs
15	CAL	Sedat	Belgium	Energy Charter Secretariat	Senior Expert-Department of Energy Efficiency
16	CARLEA	Filip	Romania	Wec-Romanian National Committee	Advisor of the chair
17	CHADASON	Mark	Greece	United States Embassy	Councellor for Regional Affairs
18	CHAMPAKIS	Markos	Greece	Public Power Cooperation	Assistant Director-Department of Energy Management
19	CHIORSAC	Mihail	Moldova	Institute of Power Engineering Academy of Science (IPE)	Professor
20	CHRISTODOULOS	Charisios	Greece	NKUA-KEPA	Ph.D. Candidate
21	CHRONOPOULOS	Dimitrios	Greece	Ministry of Foreign Affairs	Ambassador
22	CHRYSANTHOPOULOS	Leonidas	Turkey	BSEC (PERMIS)	Secretary General
23	CIAMBA	George	Greece	Embassy of Romania	Ambassador
24	CLAUDY	Marius	Ireland	Dublin Institute of Technology	PhD Researcher
25	COPACI	Tudor	Moldova	Ministry of Economy and Trade	Deputy Minister
26	CZEREWACZ	Katarzyna	Poland	Bialystok Technical University, Faculty of Management, Department of Economics on Social Sciences	Adiunkt, Vice-Chair of Economics and Social Sciences
27	DAGOUMAS	Athanasios	UK	Cambridge Centre for University of Climate Change Cambridge Mitigation Research (4CMR)	Research Associate
28	DASKALAKIS	Ioannis	Greece	HTSO	Director of System Equipment Maintenance
29	DESAEGER	Muriel	Belgium	Toyota Motor Europe	Senior Principal Technologist
30	DIALYNAS	Evangelos	Greece	National Technical University of Athens	Professor
31	DOUKAS	Petros	Greece	Ministry of Foreign Affairs	Deputy Minister

#	Last Name	First Name	Country	Organization	Position
32	DRITSA-DOSCHORI	Olga	Greece	Ministry of Economy and Finance	Head of Department International Economic Organizations
33	FLESSA	Anna	Greece	NKUA-KEPA	Secretariat of Conference
34	FOKIANOU	Teresa	Greece	FLOW	Chairman & M.D.
35	FOLIAS	Christos	Greece	Ministry of Development	Minister
36	FUNCK	Goetz	Greece	German-Greek Chamber Of Industry and Commerce	Director General
37	GASIOREK	Jan	Poland	Institute of Natural Fibres	Associate Professor
38	GENNIMATAS	Panagiotis	Greece	AGP Energy	Vice President
39	GIACALONE	Giuseppe	Greece	Italian Embassy	First Commercial Secretary
40	GIANNAKOPOULOS	Christos	Greece	National Observatory of Athens, Institute of Environmental Research and Sustainable Development	Senior Researcher
41	GOURZIS	Michael	Greece	TERNA ENERGY S.A.	Technical Manager
42	GRAMMATIKOPOULOS	Athanasios	Greece	NKUA-KEPA	Ph.D. Candidate
43	GRATSIA	Eleni	Greece	Ministry of Development	Head of Energy Policy Directorate
44	HILMIOGLU	Bilgin	Turkey	TUBITAK Marmara Research Center, Chemistry and Environment Institute	Research Fellow
45	HOROZOV	Georgi	Greece	BSTDB-Banking Division	Energy & Infrastructure Director
46	INSHEKOV	Evgenij	Ukraine	ESEMI	Professor
47	KARAGIANNOPOULOS	Constantinos	Greece	National Technical University of Athens, Electrical and Computer Engineering Department	Professor
48	KARAKOSTAS	Ioannis	Greece	NKUA	Vice rector
49	KARAMITSOS	Vassilis	Greece	DEPA	Director Regulatory Affairs
50	KARIDOYANNIS	Elias	Greece	EGL Hellas	Vice-president and Directing Adviser
51	KASSINIS	Solon	Cyprus	Ministry of Commerce, Industry and Tourism	Director of Energy Service
52	KONIDARI	Popi	Greece	NKUA-KEPA	Head of Climate Change Policy Unit
53	KONTINAKIS	Nikolaos	Greece	NKUA-KEPA	Ph.D. Candidate
54	KONTOPOULOS	Savvas	Greece	Ministry of Economy and Finance	Technical Advisor-PPP
55	KOVACHEV	Milko	Bulgaria	EBRD	Power & Energy Utilities
56	KUCHER	Maksym	Ukraine	National Power Company UKRENERGO	Head of Foreign Economic Relations Dep.
57	KUL	Yavuz	Greece	Embassy of Turkey	First Secretary
58	LAMANI	Andonaq Londo	Albania	Polytechnic University of Tirana	Professor-Dean of Mechanical Engineering Faculty
59	LEKATSAS	Evangelos	Greece	HTSO	Chairman of the Board of Directors
60	LIARMAKOPOULOS	Spyros	Greece	NKUA-KEPA	Ph.D. Candidate
61	LIVERIS	Vassilis	Greece	Ministry of Foreign Affairs	Attache for Economic and Commercial Affairs
62	MADOYAN	Torgom	Armenia	Ministry of Energy and Natural Resources	General Director of "Settlement Center"
63	MAGALEAS	Iulian	Greece	Embassy of Moldova	Ambassador
64	MALYSHEFKY	Taras	Greece	Embassy of Ukraine	Deputy Head of Mission
65	MAMEI	Marian	Moldova	Ministry of Economy & Trade	Deput Head of Division for Investment Policy

#	Last Name	First Name	Country	Organization	Position
66	MANIATOPOULOS	Constantinos	Greece	IENE	Former EU Director General of Energy, President of IENE
67	MANTELOS	Christos	Greece	Ministry of Foreign Affairs	Director of B2 Directorate for Bilateral Economic Relations with Balkan, CIS & OCBS countries
68	MARINAKIS	Antonios	Greece	HTSO	Consultant
69	MASMANIDIS	Konstantinos	Turkey	BSEC-Business Council	Business Counsil
70	MATHIOUDAKIS	-	Greece	Ministry of Development	Ambassador
71	MAVRAKI	Aliki-Nefeli	Greece	NKUA-KEPA	Secretariat of Conference
72	MAVRAKI	Eleni-Danai	Greece	NKUA-KEPA	Secretariat of Conference
73	MAVRAKIS	Dimitrios	Greece	NKUA-KEPA	Director
74	MELIKOV	Haji	Azerbaijan	GPOGC	Associate Professor
75	MEZIANI	Tarik	Belgium	European Commission, Directorate General for Research	Director,Research Programme Officer
76	MIHAILESCU	Florentina	Romania	ANRE	Expert of Transmission Tariffs Office
77	MINAROLLI	Vili Shefki	Greece	Albanian Embassy	Ambassador
78	NAKOPOULOS	Yannis	Greece	STANTON CHASE	Principal Consultant
79	NALPANTIDOU	Sonia	Greece	Ministry of Economy and Finance	Expert of Directorate of International Trade Policy
80	NETCORA	Oleksandr	Ukraine	National Power Company UKRENERGO	Head of Prospective Development Dep.
81	NIA	Bogdan	Romania	Romanian Embassy	Counsellor
82	NICOLAU	Irina	Romania	Romanian Agency for Energy Conservation	Programs Department
83	NIKITAKOS	Nikitas	Greece	University of the Aegean	Professor-Head of Department of Shipping Trade and Transport
84	NIKOLOPOULOS	Vassilis	Greece	Intelen (ICCS-NTUA)	PhD Candidate-Researcher
85	NTROUKAS	Ioannis	Greece	NKUA-KEPA	Ph.D. Candidate
86	OSTOJIC	Dejan	USA	World Bank-ECA	Lead Energy Specialist, Europe&Central Asia Region
87	OVAGHIM	Stroe	Greece	Embassy of Romania	Counsellor for economic and commercial affairs
88	PALAIOKRASSAS	Ioannis	Greece	-	Former EU Commissioner
89	PALEOYANNIS	Spyros	Greece	IENE	Deputy Chairman
90	PANOPOULOU	Lisa	Greece	CRES	Architect, Division of Development Programs
91	PAPADOPOULOS	Agis	Greece	Aristotle University of Thessaloniki	Associate Professor
92	PAPALEXANDRI	Katerina	Greece	BP Hellas	Senior Strategy Advisor
93	PAPANDREOU	Vasilis	Greece	CRES	MSc, Mechanical Engineer
94	PAPASTEFANAKIS	Dimitrios	Greece	Centre of Renewable Energy Sources	Head of Address of Developmental Programs
95	PASSARI	Eugenia	Greece	NKUA-KEPA	Secretariat
96	PATSOULES	Marios	Greece	ELPE	-
97	PEJANYAN	Serob	Greece	Embassy of Armenia	Counsellor
98	PERRAKIS	Kostis	Greece	Regulatory Authority for Energy, Energy Systems Analysis	Systems Analysis Department
99	PETROU	Dimitrios	Greece	SIEMENS	Renewable Resources Engineer
100	POPESCU	Anca	Romania	ISPE	Division Director

#	Last Name	First Name	Country	Organization	Position
101	POULOPOULOS	Petros	Greece	Energy point	Journalist
102	PRICE	Woodward Clark	Greece	Embassy of USA	Economic Counsellor
103	PSILOGLOU	Basil	Greece	National Observatory of Athens, Institute of Environmental Research and Sustainable Development	Associate Researcher
104	PSYRRI	Alexandra	Greece	Public Power Cooperation	Head of Contracts Section-Department of Energy Management
105	RABADJIEVA	Diana	Bulgaria	Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences	Professor Assistant
106	RADULOV	Lulin	Bulgaria	BSREC	Director
107	RAMAZANOVA	Elmira	Azerbaijan	GPOGC	Director
108	RAMPIDIS	Ilias	Greece	NTUA/Laboratory of Innovative Environmental Technologies (LIET)	Ph.D. Candidate
109	RULI	Genc	Albania	Ministry of Economy, Trade and Energy	Minister (BSEC acting chairman)
110	RZAYEV	Telman	Azerbaijan	GPOGC	Senior Researcher
111	SAKELLARIS	Kostis	Greece	Regulatory Authority for Energy, Markets and Competition Department	Electricity Market Expert
112	SCHULTHEISS	Wolfgang	Greece	German Embassy	Ambassador
113	SIGALAS	Floros	Greece	Peking University	Visiting Professor
114	SKYLAKAKIS	Theodoros	Greece	Ministry of Foreign Affairs	Secretary General
115	SOFIANOS	Nicholas	Greece	IENE	Scientific Coordinator
116	STRATIS	Nikolaos	Greece	National Bank of Greece	Senior Project Finance Officer
117	SYKJA	Bashkim	Albania	Business Promotion Directorate-Ministry of Economy, Trade and Energy	Director
118	TARANENKO	Mikola	Greece	Embassy of Ukraine	Chief of Economics and Trade
119	TAVARTKILADZE	Irakli	Greece	Embassy of Georgia	Ambassador
120	THEODOROPOULOS	Eustathios	Greece	EGL	-
121	THOMAIDIS	Fotis	Greece	NKUA-KEPA	Ph.D. Candidate
122	TIRIS	Mustafa	Turkey	TUBITAK-MRC	Director of Energy Institute
123	TSIATSIAMIS	Vassilis	Greece	Ministry of Foreign Affairs	Special counsellor
124	TSIPOURIDIS	Yannis	Greece	Energy point	Director
125	TSIRAKOPOULOU	Tatiana	Greece	ENDESA HELLAS S.A.	Chief Legal Officer
126	TSOSKOUNOGLOU	Miltos	Greece	Toyota Hellas	Director of Sector of Protection of Environment
127	TUGU	Fatjon	Albania	Ministry of Economy, Trade and Energy	Director of Energy Policies
128	TYPAS	Miltos	Greece	National Technical University of Athens, Biology Department	Professor
129	VAKALIDIS	Ioannis	Greece	TERNA ENERGY S.A.	Finance and Business Development manager
130	VARDANYAN	Levon	Armenia	Ministry of Energy and Natural Resources	Head of Development Department
131	VASILA	Alexandra	Greece	NKUA-KEPA	Head of the Administration and Promotion Unit
132	VASILE	Camelia	Romania	ISPE, Power Systems Division	Head of Energy Policy Team
133	VASSOS	Spyros	Greece	Public Power Cooperation	Director of Department of Energy Management

#	Last Name	First Name	Country	Organization	Position
134	VAVAROUTSOS	Georgios	Greece	Ministry of Economy and Finance	Expert of Directorate of International Trade Policy
135	VLACHOS	Andreas	Greece	Regulatory Authority for Energy	Dr., Electricity Market Expert
136	VOGIATZIS	Pantelis	Greece	ENDESA HELLAS S.A.	Project Manager-Institutions and Regulations
137	XANTHOPOULOU	Galina	Greece	Institute of Materials Science NCSR "Demokritos"	Senior Researcher
138	ZAFIROPOULOS	Konstantinos	Greece	STANTON CHASE	Partner
139	ZAHARIADIS	Nikolaos	Greece	Hellenic Petroleum SA	Technical Services Manager
140	ZAIMIS	Andreas	Greece	-	Former Minister
141	ZAIMIS	Konstantinos	Turkey	BSEC-PERMIS	Project Coordinator
142	ZAKATAEV	Oleg	Finland	RAO Nordic	Deputy Managing Director
143	ZUCHAN	Knut	Greece	Embassy of Germany	Economic Counsellor and Head of Protocol

Work description

Initial work programme

In the following table (layout derived from Annex I of the Contract), the identity of Task 4.2 (Final Conference) is outlined. Assumed or suggested information, in Annex I, has been replaced by the actual information of the accomplished task.

Task name	**Final conference**						
Task number	4.2	**Start date or starting event**			October 8, 2008		
Host of meeting	KEPA	**Duration of meeting**			October 9, 2008		
Activity Type	Support action						
Participant id	1	2	3	4	5	6	**Total**
Person-months per participant	2.45	0.3	0.3	0.3	0.3	0.3	**3.95**
Objective: Enhancement of regional and trans-regional cooperation.							
Description of work: The network activities (seminar, publication, bestowal of awards, website, ad hoc visits) and final outcomes of the project (awarded articles, new participants, means of future funding, common research areas, network objectives and plans) are presented to the network participants, national stakeholders and to potential partners from the Western Balkans, BSEC, Mediterranean and EU countries. Indicative national stakeholders from Greece will include members of the Greek Parliament, representatives from the Ministries of Development, Environment, Foreign Affairs, Economy, Physical Planning and Public Works, Finance, Regulatory Authority of Energy, Hellenic Transmission System Operator, the energy sector (Power Public Cooperation, DEPA, Hellenic Petroleum, Motor Oil, TITAN, ASPROFOS, PROMITHEAS Gas, etc), research centres and universities (Technical University of Athens, CRES, University of Aegean, NTUA, National Observatory of Athens, etc). A Memorandum of Cooperation will be signed by authorized participants. Authorized participants of *institutions from Russia (Centre for strategic Energy Research and Geopolitics of the International Institute of Energy Policy and Diplomacy), Turkey (Bogazici University), Georgia (Energy Efficiency Centre), Armenia (Energy – Ecology – Economy E3), France (OME, Observaitoire Mediterraneen de l' Energie), Tunisia (ANME, National Agency foe Energy Conservasion), Greece (Centre for Renewable Energy Sources, School of Electrical and Computer Engineering of the National Technical University of Athens) will be invited to participate. New and initial network members will be asked to recommend partners from Albania, Serbia and Montenegro, Croatia, Bosnia, Cyprus and Spain. The PC will also attempt to contact entities from these countries (such as University of Cyprus, ESCAN S.A.) that are handling similar research issues to those of the network and are willing to participate.* Efforts will be made to attract donations in order to increase the number of participants of the conference. ***Participants:*** Project participants, stakeholders and potential partners from the BSEC, Western Balkan, Mediterranean and EU countries. ***Location:*** Athens.							
***Deliverable*:** Conference report.							
Milestones and expected results: Enrichment of the network with additional research centres from the BSEC, Caspian Region, Western Balkans, Mediterranean and EU countries.							

Effort: The organization of the conference will require 0.5 person-months. 0.15 person-months (three (3) days of visit) will be needed for each of the twenty three (23) participants (six (6) members of the Steering Committee, seven (7) members of the Groups of Experts, nine (9) visitors from Mediterranean, Western Balkans, BSEC and EU countries and one (1) representative of BSEC - PERMIS). Thus, this activity requires 3.95 person-months.

Task 4.2 – Final Conference

Task objectives

The objectives of the event that were re-defined during the 3rd Steering Committee meeting in Kiev (November 2008), were the:

- Enhancement of regional and transregional cooperation;
- Presentation of project's final scientific outcomes;
- Building of awareness regarding energy and climate policy issues;
- Promotion of cooperation with market stakeholders;
- Signature of a Memorandum of Cooperation among authorized participants.

The Task Leader was KEPA.

Starting and ending point of work

Preparations for the Conference actually started in September 2007, two months before the initially planning. This was decided by KEPA, the Coordinator of the network, due to the earlier scheduling of the 3rd Steering Committee meeting. The Task was finally completed in October 2008.

Progress towards objectives

Preparations

During the 3rd Steering Committee meeting in Kiev on November 8th, 2007, a draft presentation of the forthcoming Final Conference was made and in the discussion that followed between the participants it was agreed to upgrade the event into a BSEC two-day Conference under the title ***"International Black Sea Energy Policy Conference – Energy Investments and Trade Opportunities"***.

The Final Conference was initially scheduled –according to the PROMITHEAS-2 Contract - for the end of August 2008. This was a rather inconvenient period of time, for the targeted groups of participants, since most of them were going to return from their summer holidays. The members of the PROMITHEAS-2 Steering Committee agreed that the Conference will have better success if it was organized two months later, in the early days of October 2008. On December 14th, 2007, KEPA-NKUA send a letter to the Contracting Authority asking for an extension at the PROMITHEAS-2 Contract (Annex I). The Contracting Authority responded positively on February 27th, 2008 (Annex I).

KEPA contacted the Hellenic Ministry of Foreign Affairs and BSEC – PERMIS and succeeded in having the event under the BSEC auspices and, specifically, in the calendar of the Albanian Chairmanship of BSEC.

Once the consortium had these decisions the first announcement of the Conference was released at the nineth issue (January – February 2008) of the newsletter. This issue was

released on March 12th, 2008 and was distributed to three thousand two hundred (3,200) recipients. The Final Conference was divided into three (3) main groups of sessions: Policy and Business, Scientific and Exclusive activities sessions. The recipients could find attached the draft version of the Conference broschure, the first open call for abstracts and papers for the Scientific Sessions of the Conference and the respective abstract cover sheet.

After that first announcement each member of the PROMITHEAS Network started contacts and discussions with national policy makers and stakeholders so as to secure their participation as speakers and as audience.

KEPA also contacted the pertinent authorities of the National and Kapodistrian University of Athens (NKUA) so as to make the necessary arrangements for the venue of the event and its sessions.

On April 4th, 2008 Prof. Dim. MAVRAKIS invited Prof. A. PRAKHOVNYK (Ukraine), Prof. C. KARAGIANNOPOULOS (Greece), Prof. D. HARALAMBOPOULOS (Greece), Prof. E. INSHENKOV (Ukraine), Prof. E. RAMAZANOVA (Azerbaijan), Prof. I. KARAKOSTAS (Greece), Prof. M. CHIORSAK (Moldova), Prof. N. KALOYANNOV (Bulgaria) and Prof. P. BOURKAS (Greece) to join the Scientific Committee of the Conference. This Committee was going to be responsible for reviewing and accepting abstracts and papers for presentation at the respective sessions of the Conference (Annex II).

Scientists interested to present their research work at the Scientific Sessions of the Conference had to send an abstract (in English) and to fill out the abstract cover sheet. The abstracts and their cover sheets were forwarded by KEPA to two (2) members of the Scientific Committee. If both of them accepted the abstract then the author (or authors) were notified and asked to submit the full paper until a certain date. Some of these submitted papers were reviewed and published at the PROMITHEAS scientific journal. More details are quoted at the report for the high level scientific awards (submitted to the Contracting Authority in November 2008) and the Progress Activity Report (submitted to the Contracting Authority in November 2008).

Prof. Dim. MAVRAKIS and Mr. Nikolaos KONTINAKIS visited Tirana (Albania) on May 5-6, 2008. The purpose of this visit was to invite and define details regarding the participation of the Albanian Minister of Economy, Trade and Energy, Mr. Genc RULI, at the Conference since the Final Conference was included as a BSEC event in the agenda of the Albanian Chairmanship (Annex II). Prof. Dim. MAVRAKIS and Mr. Nikolaos KONTINAKIS met - during the first day of their visit at Tirana - the Greek Ambassador Mr. Konstantinos KOKOSIS at the Greek embassy. They discussed about the Conference, the PROMITHEAS Network and the next day meeting with the Albanian Minister. The Ambassador arranged also a meeting with Prof. J. KACANI, Rector of the Polytechnic University of Tirana and members of its Senate. During the meeting Prof. Dim. MAVRAKIS invited them to join the network and participate actively in the Conference.

On May 6th, 2008 Prof. Dim. MAVRAKIS, Mr. Nikolaos KONTINAKIS and Ambassador Mr. Konstantinos KOKOSIS met the Albanian Minister of Economy, Trade and Energy, Mr. Genc RULI, and discussed with him about the Conference and the network.

On May 19th, 2008, KEPA sent invitations for participation at the Conference to the embassies of the BSEC Countries in Athens (Annex II).

On May 29th, 2008, the 2nd open call for the Scientific Sessions was released to the recipients of the PROMITHEAS Newsletter. Announcements for the Conference were hosted at the newspaper “KAPODISTRIAKO”, that is circulated inside NKUA.

At the end of May KEPA started contacting several companies activated in the energy sector asking them to sponsor some of the activities of the Conference that were not covered by the EU PROMITHEAS-2 funding.

KEPA made contacts with hotels located close to the venue of the Conference and secured special offers for the participants. The names of these hotels and their prices for the conference participants were included in the brochure and the web-site of the conference.

In mid of June 2008, KEPA sent invitations to embassies (France, Germany, Italy and USA) that had expressed their interest in the past to participate in PROMITHEAS activities. At the beginning of July 2008, KEPA sent invitations and contacted several distinguished personalities known for their work in the energy and climate policy areas to participate as speakers at the Conference (Annex II).

On June 27, 2008, KEPA released the third open call for the Scientific Sessions to the recipients of the PROMITHEAS Newsletter.

By the end of June 2008, the first chairpersons for the Policy and Business Sessions and the Scientific Sessions were nominated (Annex II).

By the end of July 2008, the Scientific Committee was enlarged. Prof. E. DIALYNAS (Greece), Prof. A. PAPADOPOULOS (Greece), Prof. M. A. TYPAS (Greece) and Prof. M. TIRIS (Turkey) accepted Prof. Dim. MAVRAKIS' s invitation to participate. The new synthesis was presented on the web-site of the PROMITHEAS – 2 project and at the next (fourth) open call.

On August 4th, 2008 KEPA released the fourth (last) open call for the Scientific Sessions to the recipients of the PROMITHEAS Newsletter. After the expiration of this last open call on September 8th, 2008 the outcome was: ***fifty three (53) submitted abstracts***. The abstracts were from Azerbaijan, Belgium, Bulgaria, France, Georgia, Greece, Ireland, Kazakhstan, Moldova, Poland, Romania, Russia, Tajikistan, Turkey, Uganda, Ukraine and United Kingdom. From these abstracts, ten (10) were rejected by the members of the Scientific Committee, one (1) was withdrawn and three (3) were forwarded to the Policy and Business Sessions.

Prof. Dim. MAVRAKIS and Mrs. Alexia VASILA, Head of the administration and promotion Unit of KEPA visited on 5 – 10 September 2008, BSEC, TUBITAK (Turkey) and GPOGC (Azerbaijan). The purpose of these visits was to discuss about the forthcoming PROMITHEAS-2 Conference with the officials of BSEC - Amb. L. CHRYSANTHOPOULOS, Mr. K. ZAIMIS and Mr. C. MASMANIDIS - and about their contribution for the success of this event. Prof. Dim. MAVRAKIS visited TUBITAK and met Prof. Mustafa TIRIS for the same purpose and for the future cooperation of TUBITAK with the PROMITHEAS Network as one of its new members.

The visit at Azerbaijan had two objectives. The first one was to encourage Azeri stakeholders and scientists to participate at the network and the Conference. The result of these discussions was the inclusion of the Azeri Academy of Sciences to the network. The second one was the participation of the Coordinator of PROMITHEAS network at the International Conference "Oil and gas potential in Azerbaijan and Turkmenistan: Energy, Economy, partnership strategy".

During the month before the Conference, KEPA continued its contacts with Ministers, embassies and national stakeholders activated in the energy and climate areas of the BSEC and Central Asia regions. Responses for participating or not being able to participate were arriving daily at KEPA (Annex IX).

KEPA proceeded also with all the necessary arrangements for the proper preparation of the venue, the parallel social events and the preparations of the Conference material. Guidelines on how the participants could reach their hotel once arriving at the Eleutherios Venizelos airport were provided to them by e-mail fifteen (15) days before the Conference. Each participant coming from abroad received when arriving at his/her hotel a folder containing material for the Conference venue, the parallel social events and the city of Athens.

KEPA disseminated also information for the Conference through the PROMITHEAS newsletter and the KEPA newsletter. The KEPA Newsletter is a weekly document containing information regarding the latest developments in the energy and climate policy areas at an international and national level. The KEPA Newsletter is disseminated to the scientists,

stakeholders, companies, ministries and research institutes in Greece. Information was also disseminated through the NKUA e-mail announcement mechanism.

By the end of September KEPA *had secured sponsorships* from EGL Hellas, the Black Sea Trade & Development Bank (BSTDB), the Public Power Cooperation (PPC) and the Hellenic Ministry of Education and Religious Affairs. These funds covered part of the upgraded event and allowed the better organization of the event (translation for the opening session, parallel social events, printed material etc).

For the organization of the RIEO exclusive meeting KEPA invited major international financing organizations (World Bank, EIB, EBRD, BSTDB), eight (8) banks from Greece, three (3) from Armenia, seven (7) from Azerbaijan, four (4) from Bulgaria, five (5) from Georgia, four (4) from Moldova, one (1) from Romania, six (6) from Russia, one (1) from Turkey, three (3) from Ukraine, the eleven (11) embassies from the BSEC countries (Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Moldova, Romania, Russia, Serbia, Turkey, Ukraine), the BSEC Business Council, Albanian Ministry of Economy, Trade and Energy, the Hellenic Ministry of Finance and Financing and energy stakeholders from the BSEC region (BSREC, EGL, ENDESA, Hellenic Transmission System Operator, Hellenic Public Power Company, GPOGC).The final list of participants included sixteen (16) representatives.

The event

Introduction

1. The ***Final Conference*** was organized by KEPA with some organizing contribution by the Albanian BSEC Chairmanship and BSEC-PERMIS.
2. The event took place on October 8th and 9th, 2008 at the Historical and the Kostis Palamas buildings of the National and Kapodistrian University of Athens (NKUA).
3. A Welcome Reception was held on October 7th at the Museum of NKUA History in Plaka area.
4. A Farewell Dinner was held on October 9th at "Stamatopoulos Old Tavern" in Plaka area.
5. The Final Programme was printed and circulated during the event (Annex III). Due to a number of last-minute changes, the actual, ex post facto, agenda is also included in Annex IV.
6. The event was finally financed by the PROMITHEAS-2 programme and a number of donors, namely, the NKUA, EGL SA, BSTDB, PPC SA and the Greek Ministry of Education and Religious Affairs.
7. The participants of the Policy and Business Sessions received a folder containing material for the session and a copy of the "***Energy View of BSEC countries - 2006***" publication.
8. The participants of the Scientific Sessions received a folder containing material for the session and a copy of the first issue of the "***Euro-Asian Journal of Sustainable Energy Development Policy***".

9. The Conference Plan follows:

<table>
<tr><th>Tuesday 7/10</th><th colspan="2">Wednesday 8/10</th><th colspan="3">Thursday 9/10</th></tr>
<tr><td rowspan="6">Welcome reception
Museum of NKUA History
20:00</td><td colspan="2" rowspan="2">Session A.1
NKUA Ceremonial Hall
09:15 – 13:00
Opening addresses
Keynote speech</td><td rowspan="3">Session B.2
I. Drakopoulos Hall
09:15 – 11:00
Regional Energy Projects

Session B.3
I. Drakopoulos Hall
11:30 – 14:00
Renewables & Energy Efficiency</td><td rowspan="3">Session C.3
Kostis Palamas building
09:15 – 14:00
Electricity</td><td rowspan="3">Session D.
Kostis Palamas building
10:00 – 12:00
RIEO Exclusive meeting</td></tr>
<tr><td colspan="2">Registration
I. Drakopoulos Hall
13:00 – 14:00</td></tr>
<tr><td colspan="2">Lunch buffet
Kostis Palamas building
14:00 – 15:00</td></tr>
<tr><td rowspan="2">Session B.1
I. Drakopoulos Hall
15:00 – 18:00
Energy Project Financing – Investment and Trade Opportunities</td><td rowspan="2">Session C.1
Kostis Palamas building
15:00 – 17:00
Conventional Fuels

Session C.2
Kostis Palamas building
17:00 – 18:00
Climate Change Policy</td><td rowspan="2">Session B.4
I. Drakopoulos Hall
15:00 – 17:00
Climate Change Challenges</td><td>Session C.4
Kostis Palamas building
15:00 – 16:30
Environment – Biofuels

Session C.5
Kostis Palamas building
16:30 – 17:30
Energy Efficiency and Conservation</td></tr>
<tr><td colspan="2">Session A.2
I. Drakopoulos Hall
17:30 – 19:30
Roundtable discussion</td></tr>
<tr><td colspan="2">Dinner
Kostis Palamas building
20:30</td><td colspan="3">Farewell Dinner
“Stamatopoulos Old Tavern”
21:00</td></tr>
</table>

Welcome Reception

10. Prof. Dimitrios MAVRAKIS invited the participants of the Conference at the Museum of NKUA history patio, in the old city of Athens, for a welcome reception. In-between the reception, participants had the opportunity to be toured in the rooms of the museum of NKUA history (1837-2008).

Session A.1: Conference Opening

Introduction

11. Session A.1 took place on October 8th, 2008, between 09:15 and 13:00, at the Ceremonial Hall of the Historical building of the National and Kapodistrian University of Athens.

12. The meeting was chaired by Prof. Ioannis KARAKOSTAS, Vice Rector of the National and Kapodistrian University of Athens. The chair also consisted of Prof. Dimitrios MAVRAKIS, Director of NKUA-KEPA and HE, Ambassador Mr. Leonidas CHRYSANTHOPOULOS, Secretary General of BSEC.

Content

13. Prof. I. KARAKOSTAS, on behalf of the NKUA, welcomed all participants to the Conference and denoted the important role that academic institutes can play in promoting regional cooperation and especially environmental protection (Annex V).

14. Prof. Dimitrios MAVRAKIS, on behalf of both the PROMITHEAS network and the Conference’s organizing committee, welcomed all participants to the Conference and,

in particular, its distinguished speakers. He reviewed the history of PROMITHEAS network and PROMITHEAS-2 programme and emphasized on the added value that they both brought to regional cooperation in the BSEC region. Finally, he called for further political and financial support of such initiatives in order to promote scientific and commercial collaboration in the energy and environment sectors (Annex V).

15. Mr. Christos FOLIAS referred to the ongoing development of the BSEC region and linked regional prosperity to the values of economic cooperation, energy security and environmental protection. To this end, he displayed the advantages of implementing a number of regional projects in the energy sector and the role of Greece in the promotion of development and stability (Annex V).
16. Mr. Genc RULI analyzed the continuous efforts of the Albanian government to reform the national energy market and to integrate Albania in the regional energy market calling, also, for less trade barriers and more investments and business cooperation in the region (Annex V).
17. Mr. Tudor COPACI analyzed the continuous efforts of the Moldovan government to reform the national energy market and to integrate Moldova in the regional energy market calling, also, for more cooperation in the region (Annex V).
18. Mr. Petros DOUKAS depicted the priorities of the Greek energy policy with an emphasis on the international energy projects that are planned in the region with the participation of Greece (Annex V).
19. A short coffee break took place at the foyer of Ioannis Drakopoulos Hall.
20. Mr. Theodoros SKYLAKAKIS, Secretary General of the Greek Ministry of Foreign Affairs took the place of Prof. Ioannis KARAKOSTAS in the Session's chair.
21. Mr. Theodoros SKYLAKAKIS talked about the effect of human development on the environment and especially about the climate change and its implications. He mentioned the relevant initiatives of the Greek Ministry of Foreign Affairs and called for the intensification of policies and means towards climate change mitigation (Annex V).
22. HE, Ambassador Dr. Wolfgang SCHULTHEISS talked about the interests of EU and Germany (as an EU member state) on collaboration and prosperity in the BSEC region. He displayed the need for closer EU – BSEC cooperation and implementation of regional energy and environment projects (Annex V).
23. HE, Ambassador Mr. Irakli TAVARTKILADZE (Annex V).
24. HE, Ambassador Mr.George CIAMBA referred to the role of Romania as both an EU and a BSEC member state and its effort to reform and liberalize its energy market. He depicted the Romanian approach to a new regional energy policy and its priorities and presented the international initiatives and projects that involve Romania towards this end (Annex V).
25. HE, Ambassador Mr. Leonidas CHRYSANTHOPOULOS (Annex V).

Memorandum of Cooperation

26. During the short coffee break a Memorandum of Cooperation (MoC) for energy issues was signed between the Hellenic and Moldavian government at NKUA.
27. More specifically, the Hellenic Deputy Minister of Foreign Affairs Mr. Petros DOUKAS and the Moldavian Deputy Minister of Energy and Natural Resources Mr. Tudor COPACI signed a Memorandum of Cooperation for energy issues and particularly for renewable energy resources issues.
28. This MoC for the implementation of a co-funding programme in the energy sector is the continuation of the Memorandum of Understanding among the Hellenic Aid of the Hellenic Ministry of Foreigh Affairs, USAID and the Organization of International

Development of the USA forco-funding several economic sectors such as tourism, culture, business and energy.

29. More information about the event are quoted at http://www.mfa.gr/www.mfa.gr/Articles/el-GR/081008_K_1727.htm

Registration

30. After completion of Session A.1, all participants of Sessions B and C of the Conference registered at the foyer of Ioannis Drakopoulos Hall.

Lunch buffet

31. After completion of the registration, Prof. Dimitrios MAVRAKIS invited the participants of the Conference at the Kostis Palamas building for the lunch buffet.

Session B.1: Energy Project Financing – Investment and Trade Opportunities

Introduction

32. Session B.1 took place on October 8th, 2008, between 15:00 and 18:00, at the Ioannis Drakopoulos Hall of the Historical building of the National and Kapodistrian University of Athens.
33. The meeting was chaired by Dr. Lulin RADULOV, Director of BSREC. The chair also consisted of Mr. Konstantinos MANIATOPOULOS, Former EU Director General on Energy and Dr. Dejan OSTOJIC, World Bank.

Content

34. Mr. Konstantinos MANIATOPOULOS made an introduction of the current situation in energy project financing, especially in the context of the ongoing global financial crisis, and emphasized on the opportunities that have emerged in the Black Sea countries for trade and investments regarding energy and climate projects.
35. Mr. Konstantinos MASMANIDIS made the presentation *"Investing in the Black Sea region"* in which he presented the investments climate and opportunities in the BSEC region and displayed the functions and role of BSEC – Business Council in promoting these investments (Annex VI).
36. Mr. Georgi HOROZOV presented the structure and functions of the Black Sea Trade and Development Bank (BSTDB) and displayed its role in the promotion of investments in the BSEC region.
37. Mr. Milko KOVACHEV presented the structure and functions of the European Bank for Reconstruction and Development (EBRD) and displayed its role in the promotion of investments in the BSEC region.
38. Mr. Bashkim SYKJA made the presentation *"Favorable business environment – an increasing potential for trade and investments in energy sector"* in which he presented the extensive reforms of the Albanian energy investments environment and the emerging opportunities for foreign investors in the country (Annex VI).
39. Dr. Sedat CAL made the presentation *"Energy Charter Treaty as a Multilateral Framework for Energy Investments: Legal Aspects of Investment Promotion and Protection"* in which he presented the Energy Charter process and its importance for regional investment promotion and protection (Annex VI).
40. Mr. Marian MAMEI made his presentation.
41. Mr. Fatjon TUGU made the presentation *"Prospective investment in Albanian power sector"* in which he presented, on the one hand, the current status of the Albanian power sector and, on the other hand, respective projects that are either on the planning or in the implementation stage (Annex VI).

42. Mr. Konstantinos ZAIMIS analysed the importance of energy in the coherence of the BSEC region and, taking PROMITHEAS network as a successful example, called for more cooperation in the institutional and scientific sectors in order to achieve both energy security and sustainable development.

43. Dr. Dejan OSTOJIC concluded the session by summing up the common points of the previous presentations, adding the perspective of a global institution (World Bank) that is actively involved in regional initiatives and projects regarding energy, environment and climate change mitigation.

Session C.1: Conventional Fuels

Introduction

44. Session C.1 took place on October 8th, 2008, between 15:00 and 16:30, at the Kostis Palamas building of the National and Kapodistrian University of Athens.

45. The meeting was chaired by Prof. Evgenij INSHEKOV, ESEMI and Prof. Konstantinos KARAGIANNOPOULOS, National Technical University of Athens.

Content

46. Dr. Tarik MEZIANI welcomed the participants of the Scientific Sessions and expressed his satisfaction for the high level organization of the Conference. He congratulated the consortium for the substantial work that they have done in the frame of the PROMITHEAS-2 project. He commented also positively the maximization of the results of the project through its dissemination mechanisms. He referred also to the concrete effort of the network members to bring together the scientific community, the market stakeholders and the governmental policymakers of the BSEC region.

47. Mr. George ABULASHVILI made the presentation *"Georgian electricity and gas market models – comparison with the EU models"* in which he presented the Georgian electricity and gas market models, after a series of recent reforms, and compared them to the respective EU market models (Annex VII).

48. Dr. Katarzyna CZEREWACZ made the presentation *"The Influence of Fossil Fuels on the Eurasian Economic Community Members' Foreign Economic Policies"* in which she supported the thesis that possesing fuel reserves is the most important factor determining the integration on the teritory of Eurasian Economic Community member countries as well as the foreign economic policies of these countries (Annex VII).

49. Dr. Haji MELIKOV, GPOGC made the presentation *"Modern methods of pipeline condition's neural diagnostics and registration of leakages from magistral oil-pipelines"* in which he presented the development of self-training artificial neural networks for diagnosing complications in oil and gas pipelines (Annex VII).

Session C.2: Climate Change Policy

Introduction

50. Session C.2 took place on October 8th, 2008, between 16:30 and 18:00, at the Kostis Palamas building of the National and Kapodistrian University of Athens.

51. The meeting was chaired by Prof. Evgenij INSHEKOV, ESEMI and Prof. Konstantinos KARAGIANNOPOULOS, National Technical University of Athens.

Content

52. Dr. Popi KONIDARI made the presentation *"Analysis of climate change mitigation tools in Ukraine"* in which he presented the Ukrainian climate policy framework and climate change mitigation mechanisms and applied a methodology to assess the efficiency of three types of national policies (Annex VII).

53. Dr. Bilgin HILMIOGLU made the presentation "*Current situation and opportunities of Turkey in energy sector related to climate change*" in which he presented the current legislation and GHG production levels in Turkey as well as future trends and policies (Annex VII).
54. Dr. Popi KONIDARI made the presentation *"Evaluating the implementation of Kyoto Protocol at the BSEC countries"* in which she reviewed the climate policy in the BSEC countries applied a methodology to assess the efficiency of the Kyoto mechanisms in them (Annex VII).

Official Dinner

55. After completion of the Sessions B.1 and C.2, Prof. Dimitrios MAVRAKIS invited the participants of the Conference at the Kostis Palamas building for the official dinner.

Session B.2: Regional Energy Projects

Introduction

56. Session B.2 took place on October 9th, 2008, between 09:15 and 11:00, at the Ioannis Drakopoulos Hall of the Historical building of the National and Kapodistrian University of Athens.
57. The meeting was chaired by Mrs. Teresa FOKIANOU, Chairman & M.D. of FLOW SA. The chair also consisted of Prof. Elmira RAMAZANOVA, Director of GPOGC.

Content

58. Prof. Elmira RAMAZANOVA made the introductory remarks.
59. Dr. Evangelos LEKATSAS made the presentation "*Electricity transmission projects in the BSEC region*" in which he presented the electricity technical and market models of the region and analyzed the prerequisites for a successful integration of the electricity systems in the BSEC region (Annex VI).
60. Mr. Woodward Clark PRICE (Annex VI).
61. Mr. Naske AFEZOLLI, TAP AG made the presentation "*TAP – Opening the Eurasia gas corridor*" in which he presented every aspect of the Trans-Adriatic-Pipeline (TAP) project (rationale, sources of supply, intermediate and final markets, pipeline routing and infrastructure, cost analysis and implementation schedule) (Annex VI).
62. Mr. Spyros PALEOYANNIS made the presentation "*The forth corridor puzzle*" in which he tried to evaluate all parameters and considerations that affect the implementation of a "forth gas corridor" that will supply European markets with natural gas from the Middle East and the Caspian Sea (Annex VI).

Session B.3: Renewables & Energy Efficiency

Introduction

63. Session B.3 took place on October 9th, 2008, between 11:30 and 14:00, at the Ioannis Drakopoulos Hall of the Historical building of the National and Kapodistrian University of Athens.
64. The meeting was chaired by Prof. Mustafa TIRIS, TUBITAK – MRC.

Content

65. Mr. Levon VARDANYAN presented the policy trends in the areas of renewables and energy efficiency in Armenia (Annex VI).
66. Mr. Solon KASINIS made the presentation "*Renewable Energy Sources & Energy Efficiency in Cyprus*" in which he presented the legislative framework, policies and measures of Cyprus in the areas of renewable energy sources and energy efficiency (Annex VI).

67. Mr. Pantelis VOGIATZIS made the presentation "*Large Scale Thermoelectrical* Cogeneration – *334 MW CHP – Its contribution to enhanced energy efficiency*" in which he presented the current status in European Community regarding the cogeneration technologies and presented, in particular, the 334 MW CHP plant of Endesa Hellas at St. Nicholas, Viotia (Annex VI).
68. Mrs. Irina NICOLAU made the presentation "*Recent Developments in promoting EE & RES in Romania*" in which she presented the legislative framework, the potential and current developments of RES and energy efficiency applications in Romania (Annex VI).
69. Mr. George ABULASHVILI made the presentation "*Development of the Georgian electricity and gas markets in line with the EU energy policy*" in which he analyzed the Georgian electricity and gas markets in the context of the respective EU markets (Annex VI).
70. Mr. Vasileios PAPANDREOU made the presentation "*RES opportunities in South East Europe*" in which he presented the common USAid – HellasAid SYNENERGY programme and the RES current state and opportunities in each country of South East Europe (Annex VI).
71. Prof. Evgenij INSHEKOV made the presentation "*Building of Sustainable Energy System in Ukraine (acitivities and prospects)*" in which he presented the energy system of Ukraine and the prospects of building a sustainable energy system either by creating distributed generation and smart distribution systems, or by creating Eco-Smart buildings (Annex VI).
72. Mrs. Camelia VASILE made the presentation "*Potential and Opportunities for Green Energy in Romania*" in which she presented the actual Romanian energy structure, the potential for RES deployment as well as the respective institutional and financial promotion mechanisms closing with the RES investment opportunities in the country (Annex VI).
73. Prof. Mustafa TIRIS concluded the session by referring to the RES potential and the progress made by each of the South East Europe countries and summed up the investment opportunities for RES and energy efficiency in the region.

Session C.3: Electricity

Introduction

74. Session C.3 took place on October 9th, 2008, between 09:15 and 14:00, at the Kostis Palamas building of the National and Kapodistrian University of Athens.
75. The meeting was chaired by Prof. Michail CHIORSAK, IPE, Prof. Evangelos DIALYNAS, National and Technical University of Athens and Prof. Anca POPESCU, ISPE.

Content

76. Prof. Michail CHIORSAK made the presentation "*Moldova Power Sources Development options in the context of Regional Electricity System Evolution*" in which he presented and analyzed a number of scenarios for meeting the growing demand of Moldova for electricity, in the context of high natural gas prices and large capital costs needed for new plants (Annex VII).
77. Prof. Tudor AMBROS made the presentation "*Synchronous generators with permanent magnets for stabilization the output voltage of the power wind mill installations*" in which he analyzed and proposed a new design for generators used in wind mills (Annex VII).
78. Mr. Panagiotis ANDRIANESIS made the presentation "*Impacts of Reserve and Fixed Costs on Greece's Day-Ahead Scheduling Problem*" in which he presented the Greek

electricity day-ahead market and analyzed the impacts of reserve and fixed costs in the participating power units' costs recovery (Annex VII).

79. Mrs. Anca Simona BARDICI made the presentation "*Security of electricity supply in the framework of sustainable development in Romania*" in which she presented the balance that needs to be obtained between sustainable development and supply of security in the future Romanian electricity system (Annex VII).

80. Mrs. Florentina MIHAILESCU made the presentation "*Incentive scheme for investment and quality of supply on transmission tariffs in Romania*" in which she proposed a new regulatory regime for cost allocations, tariffs and price control in the Romanian electricity market (Annex VII).

81. Dr. Kostis PERRAKIS made the presentation "*Simulator for the Hellenic Wholesale Electricity Market*" in which he presented the development of a simulator of the Greek wholesale electricity market (Annex VII).

82. Prof. Anca POPESCU made the presentation "*Vulnerability of European Energy Users to an Energy Crisis*" in which she analyzed the energy use characteristics of the European market concluding that European energy users are vulnerable to a global energy crisis (Annex VII).

83. Dr. Basilis PSILOGLOU made the presentation "*Comparison of Electricity Load Characteristics in Athens, Greece and London, UK*" in which he analyzed climate and electricity demand historical data for Athens, GR and London, UK and presented common and varying characteristics in the demand side behaviour of the two cities (Annex VII).

84. Mr. Ilias RAMPIDIS made the presentation "*Analysis of the Greek electric sector and investigation of various energy scenarios in the post Kyoto period*" in which he presented a model that analyzed a number of scenarios for the Greek electricity sector and its fuel mix in the post-2012 period (Annex VII).

85. Prof. Nikitas NIKITAKOS made the presentation "*Fighting water scarcity in small Aegean islands using renewable energies*" in which he presented the design and Implementation of an environmental friendly floating desalination plant using renewable energies in order to support the fresh water demand of isolated Greek islands (Annex VII).

Session D: RIEO Exclusive Meeting

Introduction

86. Session D took place on October 9th, 2008, between 10:00 and 12:00, at the Kostis Palamas building of the National and Kapodistrian University of Athens.

87. The meeting was chaired by Prof. Dimitrios MAVRAKIS, Director of NKUA-KEPA.

88. The participants were authorized representatives from Banks operating in the BSEC countries and other international institutions/organizations with great interest and action in the energy policy of the region.

89. Documents that were disseminated before and during the meeting to the participants along with the list of participants are included in Annex VIII.

Content

90. The subject of the meeting was the discussion over the possibility and use of the establishment of a Regional Intermediary Energy Organization (RIEO). This Organization is expected to convene local, regional and international energy stakeholders and financing institutions and provide a forum for ongoing dialogue and decision making on objectives of joined importance.

91. The majority of the participants recognized the lack of cooperation and information regarding the energy financing in the region and found the idea of this Organization positive. The discussion resulted to the need for a detailed study and a business plan towards the usefulness and operation of such an Organization.

Lunch buffet

92. After completion of Sessions B.3, C.3 and D, Prof. Dimitrios MAVRAKIS invited the participants of the Conference at the Kostis Palamas building for a lunch buffet.

Session B.4: Climate Change Challenges

Introduction

93. Session B.4 took place on October 9th, 2008, between 15:00 and 17:00, at the I. Drakopoulos Hall of the Historical building of the National and Kapodistrian University of Athens.
94. The meeting was chaired by Prof. Dimosthenis ASIMAKOPOULOS, Vice Rector of the National and Kapodistrian University of Athens. The chair also consisted of Mr. Ioannis PALAIOKRASSAS, Former EU Commisioner.

Content

95. Mr. Ioannis PALAIOKRASSAS made an introduction to the session with the presentation "*Can we meet the challenge?*" in which he commented on the size of the challenge that climate change poses on humankind, the developments and alternatives towards climate change mitigation and concluded with the test case of the BSEC region (Annex VI).
96. Mr. Miltos TSOSKOUNOGLOU made the presentation "*The end of the era of cheap oil – A decisive factor in climate change*" in which he presented the basics of the peak oil theory and extended its conclusions to climate change challenges proposing a number of substitutes for current practices (Annex VI).
97. Mrs. Teresa FOKIANOU made the presentation "*Climate Change – a new Challenge for Energy Business*" in which after displaying the imminence of the climate change called for a new model in the energy business (Annex VI).
98. Dr. Popi KONIDARI made the presentation "*Climate Change Challenges at the BSEC countries*" in which she presented the current state of climate policy in each of the BSEC countries (Annex VI).

Session C.4: Environment – Biofuels

Introduction

99. Session C.4 took place on October 9th, 2008, between 15:00 and 16:00, at the Kostis Palamas building of the National and Kapodistrian University of Athens.
100. The meeting was chaired by Prof. Anca POPESCU, ISPE and Prof. Miltos A. TYPAS, National and Kapodistrian University of Athens.

Content

101. Mr. Jan GASIOREK made the presentation "*Production of bioethers of glycerol (fuel second generation) from crude glycerol – the by-product of biodiesel manufacture*" in which he presented an innovative procedure and system for bio-ethers of glycerol from crude glycerol wastes (Annex VII).
102. Dr. Diana RABADJIEVA made the presentation "*Thermodynamic Modeling of Inorganic Chemical Speciation in River Waters Affected by Mine Water Discharges*" in which she presented the determination of the inorganic chemical species in mining

polluted surface waters by chemical analyses and thermodynamic modeling of the systems (Annex VII).

103. Mrs. Galina XANTHOPOULOU made the presentation "*Prevention of radioactive and some other contaminants propagation into the grounds by SHS-method*" in which she presented a new method of processing of greater amounts of polluted components for utilization of radioactive and chemically dangerous wastes and neutralization of polluted materials, for prevention their migration into the soil and to adjacent ambiences (atmosphere and hydrosphere) (Annex VII).

104. Mrs. Galina XANTHOPOULOU made the presentation "*Composite materials on the basis of silica-modified systems with high sorption activity for water surface cleaning*" in which she presented the development of a novel mechanical-chemical treatment of silica-rich raw minerals and wastes to synthesize, in a single stage, magnetic sorbents for heavy oil collecting and for cleaning waste water (Annex VII).

105. Mrs. Galina XANTHOPOULOU made the presentation "*Environmental protection and remediation using SHS*" in which she presented the importance and uses of the SHS (Self-propagating high-temperature synthesis) method for the synthesis and processing of materials (Annex VII).

Session C.5: Energy Efficiency and Conservation

Introduction

106. Session C.5 took place on October 9th, 2008, between 16:00 and 17:00, at the Kostis Palamas building of the National and Kapodistrian University of Athens.

107. The meeting was chaired by Prof. Agis PAPADOPOULOS, Aristotle University of Thessaloniki and Dr. Haji MELIKOV, GPOGC.

Content

108. Mr. Marius CLAUDY made the presentation "*Beyond Economics – A behavioural approach to energy efficiency in domestic buildings*" in which he presented the *"Technological Sector Research (2006) Strand III - Energy Policy Research in Domestic Building"* programme related to domestic energy consumption (Annex VII).

109. Mr. Vassilis NIKOLOPOULOS made the presentation "*Optimal Energy and Demand-side Management with Location-based Services and Adaptive Data Mining Algorithms using an innovative web-based Energy Information System (EMIR)*" in which he presented a web-based Energy Information System for remote energy data mining and analysis and energy system monitoring and control (Annex VII).

110. Dr. Athanassios DAGOUMAS made the presentation "*Macroeconomic Rebound Effect from the implementation of Energy Efficiency Policies at global level with E3MG*" in which he presented the results of E3MG model in assessing the macroeconomic rebound effect from the implementation of energy efficiency policies at a global level (Annex VII).

Session A.2: Roundtable Discussion

Introduction

111. Session A.2 took place on October 9th, 2008, between 17:30 and 19:30, at the Ioannis Drakopoulos Hall of the Historical building of the National and Kapodistrian University of Athens.

112. The roundtable discussion was coordinated by Prof. Dimitrios MAVRAKIS, Director of NKUA-KEPA.

113. The panelists of the discussion were: Mr. Constantinos MANIATOPOULOS, Former EU Director General of Energy, Dr. Dejan OSTOJIC, World Bank – ECA, Mr. Ioannis

PALAIOKRASSAS, Former EU Commissioner of Environment, Mr. Milko KOVACHEV, Power & Energy Utilities, EBRD and Mr. Goetz FUNCK, Director General of German-Greek Chamber of Industry and Commerce.

Content

114. Two questions were posed as guidelines to the panel: *"Does the present political and economic landscape favors regional synergies promoting implementation of Kyoto protocol mechanisms, energy investment and trade transactions in Black Sea?"* and *"Can an initiative for the development of a RIEO among the BSEC countries gain regional support from the market forces?"*

115. After a short introduction by Prof. Dimitrios MAVRAKIS, there was a first round of five-minute speeches by each panelist for introductory comments on the posed questions and a second round of five-minute speeches by each panelist for reevaluation and conclusion remarks.

116. The audience was prompted for questions and, afterwards, Prof. Dimitrios MAVRAKIS summed up all opinions and points that were made during the Session. The majority of the participants reaffirmed the outcomes of the Session D meeting and recognized the lack of adequate cooperation regarding the energy financing in the region and found the idea of a Regional Intermediary Organization positive. The discussion resulted to the need for a detailed study towards the usefulness and operation of such an Organization.

Farewell Dinner

117. After completion of the Conference, Prof. Dimitrios MAVRAKIS invited the participants of the Conference at the "Stamatopoulos Old Tavern" live music tavern, in the old city of Athens (Plaka), for dinner.

Expression of Thanks

118. The participants expressed their gratitude to KEPA for the excellent arrangements and the hospitality during the Conference.

Outcomes

The Final Conference was set under the BSEC auspices. The Acting Chairman of BSEC on energy issues, Albanian Minister of Economy, Trade and Energy was the honorary guest during the opening session. Ministers and Ambassadors from BSEC countries (List of participants) as well as the Secretary General of BSEC, Amb. L. CHRYSANTHOPOULOS, attended and addressed the event.

Organizing of the Conference allowed for parallel sessions of policy and scientific content as well as an exclusive meeting regarding the initiative for the establishment of a Regional Intermediary Energy Organization (RIEO) in the BSEC region.

All participants received issues of the "Energy View of the BSEC countries-2006" and the newly edited scientific journal "Euro-Asian Journal of Sustainable Energy Development Policy".

During the policy session, issues regarding energy projects financing, investment and trade opportunities, regional energy projects, renewables, energy efficiency and climate change were discussed.

During the scientific sessions, research work regarding conventional fuels, electricity, energy efficiency and energy conservation, environment and climate change was presented.

During the exclusive meeting, a positive evaluation of the initiative for the establishment of a Regional Intermediary Energy Organization in the BSEC region was shaped, an evaluation that was repeated during the final roundtable discussion session.

In conclusion, the *Final Conference* fulfilled its main objectives, namely to:

- Enhance regional and transregional cooperation;
- Present the project's final scientific outcomes;
- Build awareness regarding energy and climate policy issues;
- Promote cooperation with market stakeholders.

Concerning the follow-up activities, common consensus was built among participants regarding the:

- Promotion of the publication of the scientific journal;
- Organization of an International Scientific Conference next year with the same thematics;
- Promotion of the establishment of a Regional Intermediary Energy Organization in the BSEC region;
- Investigation of the possibility to organize a similar political Conference next year in Baku under the Azeri chairmanship of BSEC.

Annexes

Annex I: Amendement

NATIONAL AND KAPODISTRIAN
UNIVERSITY OF ATHENS

SPECIAL ACCOUNT FOR RESEARCH GRANTS
SECRETARIAT OF THE RESEARCH COMMITTEE
Address : 6 Christou Lada str., 10561,
Athens, Greece
Information : Athanasiathou Sophia
Tel. : +30 210 7275045
Fax : + 30 210 7275010
Email : rc@elke.uoa.gr

Athens, 14 December 2007
Reg. Numb. 5546.

TO : EUROPEAN COMMISSION
B-1049
BRUSSELES BELGIUM
ATTN. : MR. JOSE MANUEL SILVA RODRIGUEZ
DIRECTOR GENERAL FOR RESEARCH
DIRECTORATE-GENERAL

Reference : Promitheas 2
Subject : Request for Amendment to contract No.031444(Project :Promitheas-2")

Dear Mr. Josè Manuel SILVA RODRIGUEZ,

With reference to the above noted contract, I request on behalf of the consortium to modify the contract as follows:
The duration specified in Article 4.2 of the contract is modified as follows:
New duration: 26 months

The reasons for this contract extension are the following:

The PROMITHEAS-2 Contract ends on August 31st, 2008. The last tasks (Annex I) are Task 4.2, "*Final Conference*" and Task 1.4., "*Final SC meeting*".

The Conference is planned to take place before the end of the 24 month duration of the contract that entered into force on September 2006. This placed the event in late August 2008, a rather inconvenient period of time, for the targeted groups of participants, since most of them return from their summer holidays.

The members of the PROMITHEAS-2 Steering Committee during their third meeting in Kiev on November 8th, 2007 agreed that the Conference will have better success if it will be organized two months later, in the early days of October 2008.

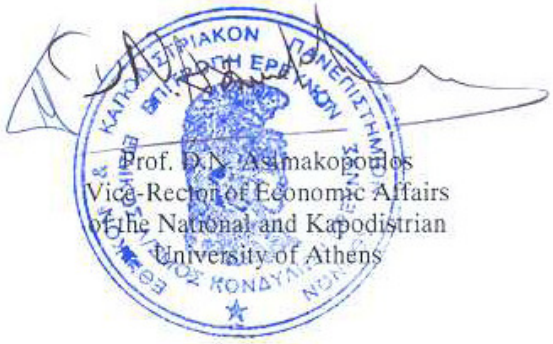
In addition we do hope that in this period of the year we will succeed to upgrade the event to a national and regional event in cooperation with the Permanent Secretariat of Black Sea Economic Cooperation Organization (PERMIS – BSEC).

In this respect and with the agreement of all members of the PROMITHEAS-2 Consortium, in my capacity as Project Coordinator I ask for the extension of the contract until October 31st, 2008.

No additional Community financial contribution is requested for this amendment.
All other provisions of the contract and its annexes remain unchanged.

Thank you for your cooperation in advance,
Yours sincerely,

The Chairman of the Research Committee of NKUA



Prof. D.N. Asimakopoulos
Vice-Rector of Economic Affairs
of the National and Kapodistrian
University of Athens

c.c. : - Secretariat of the Research Committee

EUROPEAN COMMISSION
RESEARCH DIRECTORATE-GENERAL

Directorate D - International Cooperation
The Director

Brussels, 27 FEV. 2008
D4/HS/MW/2008/D 510827

National and Kapodistrian University of Athens
F.a.o. Prof. Dimitrios MAVRAKIS /
Prof. Dimosthenis ASIMAKOPOULOS
Energy Policy and Development Centre
KEPA Building,Panepistimiopolis
157 84 Athens
GREECE

REGISTERED WITH ACKNOWLEDGMENT OF RECEIPT

Subject: **Amendment No. 1 to Contract No. INCO-CT-2006-031444**
Project: "EU-BSEC Energy and Climate Policy Network PROMITHEAS-2"
Your letter requesting amendment dated December 14, 2007

Contact: Amendments HelpDesk, **Ms. Maartje Wouters, tel: +32-2-298.55.97**
E-mail: **maartje.wouters@ec.europa.eu**

Dear Prof. ASIMAKOPOULOS,

With reference to the above letter, this is to inform you that the Commission agrees to your request to modify the contract as follows:

Change of the duration

The duration specified in Article 4.2 of the contract is modified as follows:
New duration: 26 months.

Modification of Annex I

Annex I - Description of work is modified.

The revised Annex I dated 6th February 2008 attached to your letter requesting the amendment referred to in the subject line replaces any former version.

Commission européenne, B-1049 Bruxelles / Europese Commissie, B-1049 Brussel - Belgium. Office: Square de Meeûs, SDME 05/62
Telephone: (32-2) 299 11 11

Change of Contractor(s) Details

I inform you that the following contractors' details are changed as follows:

National and Kapodistrian University of Athens, established in 6 Christou Lada Str, Athens, 105 61, Greece, represented by Dimosthenis Asimakopoulos, Vice Rector, and/or Vassilios Lambrinoudakis, Vice president, or their authorised representative.

All other provisions of the contract and its annexes remain unchanged.

The amendment comes into force upon the date of acceptance by the Commission of the modifications with effect from that date unless otherwise specified in each of the individual modification requested.

Please acknowledge receipt and inform your partners of the contents of this letter.

Yours sincerely,

M. Mineh

COMMISSION OF THE EUROPEAN COMMUNITIES
Research
Directorate-General

Copies: Ana JUAREZ - EC Negotiator
Tarik MEZIANI - EC Scientific Officer
Hugo BOGAERTS - EC Financial Manager

Commission européenne, B-1049 Bruxelles / Europese Commissie, B-1049 Brussel - Belgium. Office: Square de Meeûs, SDME 05/62
Telephone: (32-2) 299 11 11

Annex II: Invitations

NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS

ENERGY POLICY AND
DEVELOPMENT CENTRE (KEPA)
PANEPISTIMIOPOLIS, KEPA BUILDING
157-84 ATHENS, GREECE
TEL.: +30-210-727-5732 FAX: +30-210- 727-5828
E-MAIL: epgsec@kepa.uoa.gr

TO:
PROF. ARTHUR PRAKHOVNIK
DIRECTOR OF INSTITUTE FOR ENERGY SAVING AND ENERGY MANAGEMENT
KIEV-UKRAINE

Athens 4th April, 2008

Dear Prof. Prakhovnik

FP6-PROMITHEAS-2 programme will conclude on October 8th – 9th, 2008 with the organization of the Black Sea Energy Policy Conference that will take place in Athens. The Conference has been upgraded to an event of regional importance and has been included in the agenda of the Albanian BSEC Chairmanship-in-office. The Conference is a two-fold event and includes policy and business sessions as well as scientific sessions focused on energy and environmental sciences.

The scientific sessions of the Conference are purposed to attract high-quality scientific papers from the Black Sea and Central Asia regions, thus offering an additional opportunity for the development of closer ties among the research potential of these areas.

In this context, I would like to invite you to participate in the scientific committee of the Conference and extent our cooperation that began with the journal of PROMITHEAS-2 programme.

The scientific committee will have the task to accept or reject papers proposed for oral presentation in the Conference, based on an abstract and a short abstract cover sheet that the interested scientists will submit to PROMITHEAS.

Although, due to the tight EU financing of the event, there is no fee related to the task of the scientific committee, members of the scientific committee will be invited to attend the Conference on the expense of the Conference. Also, scientific papers that are authored or co-authored by a member of the scientific committee will be presented in the Conference without any charge.

You will be able to find more information about the whole Conference in its webpage (http://www.kepa.uoa.gr/PROMITHEAS2_Conference.htm).

I will be most grateful to have your answer as soon as possible in order to be able to publicize the scientific committee members and the first call for papers to be presented in the Conference.

Yours sincerely

Prof. Dimitrios Mavrakis
Director of KEPA

NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS

ENERGY POLICY AND
DEVELOPMENT CENTRE (KEPA)
PANEPISTIMIOPOLIS, KEPA BUILDING
157-84 ATHENS, GREECE
TEL.: +30-210-727-5732 FAX: +30-210- 727-5828
E-MAIL: epgsec@kepa.uoa.gr

To:
MR. GENC RULI
MINISTER OF THE ECONOMY, TRADE AND ENERGY
TIRANA – ALBANIA

Athens, 5th May 2008

Your Excellency,

I would like to express our sincere thanks for the decision of the forthcoming Albanian BSEC Chairmanship to include the Black Sea Energy Policy Conference "Energy Investments and Trade Opportunities" (8 and 9 October 2008, Athens) in the agenda of events under your BSEC Chairmanship.

The Conference is organized by PROMITHEAS network, originally funded by BSEC-PDF (Project Development Fund) and it constitutes the concluding event of a relevant project financed by EU (FP6-INCO-PROMITHEAS-2).

We intend to invite prominent speakers from all twelve BSEC countries, Central Asia countries, EU and the Hellenic Government and international organizations and stakeholders.

In this respect, I cordially invite you to address and open the Conference in a session that will take place in the Ceremonial Hall of the National and Kapodistrian University of Athens. In case of an affirmative answer, we will be glad to cover your travel and accommodation expenses, in the range of our budget limitations.

Please find attached all relevant draft information concerning the Conference and a draft invitation letter in case you are interested to co-invite the EU Commissioner (on Environment) and other BSEC Ministers to address the opening of the Conference. Given the character of the event, we would be glad to circulate your invitation to an agreed list of participants among the BSEC countries and other international organizations.

Sincerely yours

Prof. Dimitrios Mavrakis
Coordinator of PROMITHEAS-2

BLACK SEA ECONOMIC COOPERATION
ALBANIAN CHAIRMANSHIP

Black Sea Energy Policy Conference
"Energy Investments and Trade Opportunities"

Athens
8 – 9 October, 2008

PROMITHEAS-2
The EU-BSEC Energy and Climate Policy Network

Invitation

TO:
AMB. VAHRAM KAZHOYAN
EMBASSY OF REPUBLIC OF ARMENIA
ATHENS – GREECE

ATHENS, 19 MAY 2008

Your Excellency,

I would like to bring to your attention the Black Sea Energy Policy Conference that will take place on Wednesday 8 and Thursday 9 October, 2008 in Athens. The event is included in the calendar of the Albanian Chairmanship-in-Office of BSEC and will be opened by the Albanian Acting Chairman, Minister of Economy, Trade and Energy, Mr. Genc RULI. The Conference is organized jointly with the Energy Policy and Development Centre (KEPA) of the National and Kapodistrian University of Athens in the frame of the EU FP6-PROMITHEAS-2 programme.

The objective of the Conference is to offer the grounds to representatives of BSEC Member States, BSEC Related Bodies, EU, state and private stakeholders, as well as the "PROMITHEAS" network members from the Black Sea and the Central Asia regions to present their views in respect to energy, environment and climate policies and initiatives (*sessions A & B*).

In parallel, BSEC scientists, universities and research institutions have been invited to present and disseminate scientific knowledge in the energy and environment areas (*sessions C*) while major national and private energy stakeholders will be given the opportunity to present activities and opportunities (*sessions D*).

In view of the above-mentioned, the Organizing Committee considers of great importance the participation and contribution of your Government to the Black Sea Energy Policy Conference – "Energy Investments and Trade Opportunities". To this end, we would like you to consider the representation, at the highest possible level, of your Ministries of Energy and Environment and your Chamber of Commerce at the Conference. Moreover, we would like to discuss with you the possibility to encourage your national energy and environment organizations and companies and the Greek companies carrying out relevant activities in your country to participate or sponsor the Conference as well as the opportunities that are offered for the promotion of your country through the activities of *sessions D*.

I am confident that this Conference will provide an excellent opportunity for the development of additional ties of cooperation in these important BSEC priorities. I am looking forward to your answer.

Sincerely yours

Prof. Dimitrios Mavrakis
Director of KEPA

KEPA | GPOGC | BSREC | IPE | ISPE | ESEMI

NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS

ENERGY POLICY AND
DEVELOPMENT CENTRE (KEPA)
PANEPISTIMIOPOLIS, KEPA BUILDING
157-84 ATHENS, GREECE
TEL.: +30-210-727-5732 FAX: +30-210- 727-5828
E-MAIL: epgsec@kepa.uoa.gr

TO:
ASSOC. PROF. DIAS HARALAMPOPOULOS
DIRECTOR OF ENERGY MANAGEMENT LABORATORY
UNIVERSITY OF THE AEGEAN
DEPARTMENT OF ENVIRONMENT
MYTILENE-GREECE

Athens 24th June, 2008

Dear Prof. Haralampopoulos

The International Black Sea Energy Policy Conference that will take place on October 8th – 9th, 2008 in Athens has been upgraded to a BSEC event and is included in the agenda of the Albanian BSEC Chairmanship-in-office. The Conference is a two-fold event and includes policy and business sessions as well as scientific sessions focused on ***energy and environmental sciences***.

We have been elaborating the responses that we received for the Conference so far and formed the draft programme which is attached. It is my pleasure to inform you that you will be Coordinator in the following session:

Scientific Session C.4: Climate change (Day 2, Time 11:45 - 14:00)

The latest draft brochure of the Conference and the third open call for papers will be published in the next days. In this context, I would like to ask for your contribution in disseminating within the scientific communities of your countries the open calls for submitting abstracts and papers for the Conference. So, far the participation has not been up to the expected level and we are trying to encourage researchers and scientists from EU and BSEC Member States to participate.

I do count on your influence and reputation to motivate and convince members of your scientific societies to join us in this regional importance scientific event.

Yours sincerely

Prof. Dimitrios Mavrakis
Director of KEPA

BLACK SEA ECONOMIC COOPERATION ALBANIAN CHAIRMANSHIP

Black Sea Energy Policy Conference "Energy Investments and Trade Opportunities"

Athens
8 – 9 October, 2008

PROMITHEAS-2
The EU-BSEC Energy and Climate Policy Network

Invitation

To:
DR. DEJAN OSTOJIC
SENIOR ENERGY SPECIALIST, ENERGY AND INFRASTRUCTURE
WORLD BANK, ECA
KYIV – UKRAINE

ATHENS, 3 JULY 2008

Dear Dr. D. Ostojic,

It was a pleasure meeting you in Sofia last month. I hope that you have still open space in your agenda in the coming autumn. If it is so I would like to invite you to participate in the *"Black Sea Energy Policy Conference – Energy Investments and Trade Opportunities"* that will take place on Wednesday 8 and Thursday 9 October, 2008 in Athens and it is considered of high importance for the Ukrainian role in the BSEC cooperation and the role that your Bank may play in it.

The event is included in the calendar of the Albanian Chairmanship-in-Office of BSEC and will be opened by the Albanian Acting Chairman, Minister of Economy, Trade and Energy, **Mr. Genc RULI**. The Greek Ministers **Mrs Dora BAKOGIANNI**, **Mr. Christos FOLIAS**, **Mr. George SOUFLIAS**, EU Commissioners for Energy Policies **Mr. Andris PIEBALGS** and Environment (**Mr. Stavros DIMAS**), BSEC ministers and high level decision makers has also been invited to address the Conference.The event is organized by the Energy Policy and Development Centre (KEPA) of the National and Kapodistrian University of Athens in the frame of the EU FP6-PROMITHEAS-2 programme.

The objective of the Conference is to offer the grounds to representatives of BSEC Member States, BSEC Bodies, European Commission, state and private stakeholders, as well as the "PROMITHEAS" network members from the Black Sea and the Central Asia regions to present their views in respect to energy, environment and climate policies and initiatives. In parallel, BSEC scientists, universities and research institutions have been invited to present and disseminate scientific knowledge in the energy and environment areas.

In view of the above-mentioned, the Organizing Committee would like to invite you to participate as coordinator and make the concluding remarks in the **Session B.2 (Investment and Trade Opportunities)** where national representatives will present investment and trade opportunities of national scale in the Black Sea region regarding energy and environment and participate also at **Session A.2 Roundtable discussion.**

Attached you will find a draft brochure of the Conference. I am looking forward to your answer.

Sincerely yours

Prof. Dimitrios Mavrakis
Director of KEPA

KEPA | GPOGC | BSREC | IPE | ISPE | ESEMI

Annex III: Final Program of the Final Conference

BLACK SEA ECONOMIC COOPERATION
ALBANIAN CHAIRMANSHIP

Black Sea Energy Policy Conference

PROMITHEAS-2
The EU-BSEC Energy and Climate Policy Network

Energy Investments and Trade Opportunities

Policy and Business Sessions ▫ Scientific Sessions ▫ Exclusive activities

8 – 9 October 2008
Athens, Greece

Photo from ManagEnergy and Intelligent Energy - Europe Programme of the European Commission

Organized by

Energy Policy and Development Centre (KEPA)

Coordinator of

P R O M I T H E A S **The Energy and Climate Policy Network**

THE CONFERENCE

The International Black Sea Energy Policy Conference - *"Energy Investments and Trade Opportunities"* of the PROMITHEAS Network will take place on October 8 - 9, 2008 in Athens, Greece. It is a three-dimension event, under the auspices of the Albanian Chairmanship of BSEC, with Policy and Business Sessions, Scientific Sessions and an Exclusive meeting associated with the initiative for the establishment of a *Regional Intermediary Energy Organization - RIEO*.

The Conference is included in the FP6-PROMITHEAS-2 programme activities and has raised sponsorships from the both the private and public sector.

The Energy Policy and Development Centre (KEPA) of the National and Kapodistrian University of Athens (NKUA), coordinator of PROMITHEAS – The Energy and Climate Policy Network has invited ministers, policy makers, energy stakeholders and scientists from EU, Black Sea, Caspian Sea and Central Asia countries to participate. The whole event will be hosted by the oldest university of Greece, the National and Kapodistrian University of Athens.

A. Opening – Welcome Addresses

The official opening of the Conference will take place at the Monumental Ceremonial Hall of NKUA with the participation of the Albanian Minister of Economy, Trade and Energy (Acting Chairman of BSEC), the Secretary General of BSEC and high level governmental delegations from the BSEC countries (Ministers, Deputy Ministers, Ambassadors, General Secretaries of Ministries)

Distinguished personalities, decision makers and regional energy stakeholders will participate actively in this important event.

B. Policy and Business Sessions

The Policy and Business Sessions include speeches, presentations and discussions among BSEC ministers, ambassadors, country representatives, decision makers, representatives from public and private companies activated in energy and environment investments and transactions, representatives from banks etc. The five sessions will be hosted at the "I. Drakopoulos" hall of NKUA.

- Session B.1: Energy project financing – Investment and trade opportunities
- Session B.2: Regional energy projects
- Session B.3: Renewables & Energy efficiency
- Session B.4: Climate change challenges

C. Scientific Sessions

The Scientific Sessions are oriented to energy and environment - climate change. An International Scientific Committee with members from Greece, EU and BSEC countries will ensure the scientific quality of the sessions. The five sessions will be hosted at the "Kostis Palamas" Cultural Centre of NKUA.

- Session C.1: Conventional fuels
- Session C.2: Climate change policy
- Session C.3: Electricity
- Session C.4: Environment - Biofuels
- Session C.5: Energy efficiency and conservation

D. Exclusive activities

An exclusive meeting concerning the initiative of establishing *RIEO* will take place on Thursday morning at the "Kostis Palamas" Cultural Centre of NKUA.

ORGANIZATION

The International Black Sea Energy Policy Conference - *"Energy Investments and Trade Opportunities"* is being organized by the Energy Policy and Development Centre (NKUA-KEPA), coordinator of the PROMITHEAS Energy and Climate Policy Network. The Centre is an academic (within the National and Kapodistrian University of Athens), non profit organization, whose aim is to promote relations of scientific and development cooperation at both national and international level.

The Centre's activities are mainly related to the power sector, energy transportation and interconnections, energy geopolitics, regional energy markets, promotion of energy investments and trade, environmental implications of energy use and design and evaluation of climate policy instruments. NKUA-KEPA has developed a regional profile covering the areas of S.E. Europe, Mediterranean, Black and Caspian Seas regions and Central Asia.

Energy Policy and Development Centre (KEPA)
National and Kapodistrian University of Athens
Panepistimiopolis, KEPA Building
157-84 Athens, Greece
Tel.: (+30) 210-7275732, (+30) 210-7275809
Fax: (+30) 210-7275828
E-mail: epgsec@kepa.uoa.gr
Website: www.kepa.uoa.gr

Organizing Committee

Prof. Dimitrios MAVRAKIS, NKUA-KEPA, Greece (Chairman)

Prof. Mihail CHIORSAC, IPE, Moldova

Prof. Arthur PRAKHOVNIK, ESEMI, Ukraine

Dr. Lulin RADULOV, BSREC, Bulgaria

Prof. Elmira RAMAZANOVA, GPOGC, Azerbaijan

Mrs. Camelia VASILE, ISPE, Romania

Secretariat

Dr. Popi KONIDARI, NKUA-KEPA

Mr. Nikolaos KONTINAKIS, NKUA-KEPA

Mrs. Jenny PASSARI, NKUA-KEPA

Mrs. Alexia VASILA, NKUA-KEPA

Note

The detailed conference programme is published in the following pages. It is noted that some speakers have not yet confirmed their participation. It is possible that other speakers will take their place. The organizing committee retains the right to change the programme without prior notice. Any changes will be announced through NKUA-KEPA's website at www.kepa.uoa.gr

REGISTRATION

Registration Fees

For registration to the conference it is necessary to complete the Registration Form and send it to NKUA-KEPA, by 30 September, 2008.

- ***The opening of the Conference (session A.1) will be open (free of charge) to interested scientists and stakeholders.***
- The conference registration fee for the policy and business sessions (B.1 – B.4) amounts to **300 €**. Registration fee includes all printed material related to the respective sessions, a copy of the "Energy View of BSEC countries - 2006" publication, coffee breaks, two lunches and two dinners.
- For the scientific sessions (C.1 – C.5) the registration fee amounts to **120 €** for scientists coming from Azerbaijan, Bulgaria, Moldova, Romania and Ukraine. Registration fee includes all printed material related to the respective sessions, coffee breaks, two lunches and two dinners.
- For the scientific sessions (C.1 – C.5) the registration fee amounts to **180 €** for scientists coming from other countries (Greece included). Registration fee includes all printed material related to the respective sessions, coffee breaks, two lunches and two dinners.
- Scientific papers are accepted for presentation in the scientific sessions by the conference's scientific committee as described in the respective open call for papers (http://www.kepa.uoa.gr/PROMITHEAS2_Conference.htm).

Payments and Cancellations

Payment can be made either by direct payment to the NKUA – Special Account for Research Grants' account at EMPORIKI Bank in Athens (IBAN: GR79 0120 0350 0000 0008 1706 531) or by cash upon registration. Upon payment, the organizers will issue an official receipt to the institution, company or organization concerned.

Cancellations are accepted up to, and no later than 8 September 2008, with a full refund of the payment made. In the case of cancellation after this date, a 50% refund of registration fees will be made, while for cancellations after 30 September 2008 there will be no refund.

ACCOMMODATION

NKUA-KEPA has made arrangements for delegates who wish to stay at one of the BEST WESTERN ESPERIA, AMALIA and ATHINAIS hotel. Each delegate will have to handle his/her booking and pay directly to the hotel, indicating the participation in the *International Black Sea Energy Policy Conference - "Energy Investments and Trade Opportunities"* event. The special rates that apply for the conference delegates are as follows:

BEST WESTERN ESPERIA hotel room type rates

(Tel: +30-210-3238001, www.esperiahotel.com.gr)

Single (standard) € 130 / Double (standard) € 130

Single (executive) € 170 / Double (executive) € 170

AMALIA hotel room type rates

(Tel: +30-210-3237300, www.amaliahotels.com)

Single € 165 / Double € 180

ATHINAIS hotel room type rates

(Tel: +30-210-6431133, www.athinaishotel.gr)

Single € 65 / Double € 80

If you decide to stay at one of the proposed hotels, please indicate this in your registration form by ticking the respective box.

Conference Plan

<table>
<tr><th>Tuesday 7/10</th><th colspan="2">Wednesday 8/10</th><th colspan="3">Thursday 9/10</th></tr>
<tr><td rowspan="6">Welcome reception
Museum of NKUA History
20:00</td><td colspan="2">Session A.1
NKUA Ceremonial Hall
09:15 – 13:00
Opening addresses
Keynote speech</td><td rowspan="2">Session B.2
I. Drakopoulos Hall
09:15 – 11:00
Regional Energy Projects

Session B.3
I. Drakopoulos Hall
11:30 – 14:00
Renewables & Energy Efficiency</td><td rowspan="2">Session C.3
Kostis Palamas building
09:15 – 14:00
Electricity</td><td rowspan="2">Session D.
Kostis Palamas building
10:00 – 12:00
RIEO Exclusive meeting</td></tr>
<tr><td colspan="2">Registration
I. Drakopoulos Hall
13:00 – 14:00</td></tr>
<tr><td colspan="2">Lunch buffet
Kostis Palamas building
14:00 – 15:00</td><td colspan="3">Lunch buffet
Kostis Palamas building
14:00 – 15:00</td></tr>
<tr><td>Session B.1
I. Drakopoulos Hall
15:00 – 18:00
Energy Project Financing – Investment and Trade Opportunities</td><td rowspan="2">Session C.1
Kostis Palamas building
15:00 – 17:00
Conventional Fuels

Session C.2
Kostis Palamas building
17:00 – 18:00
Climate Change Policy</td><td>Session B.4
I. Drakopoulos Hall
15:00 – 17:00
Climate Change Challenges</td><td colspan="2">Session C.4
Kostis Palamas building
15:00 – 16:30
Environment – Biofuels

Session C.5
Kostis Palamas building
16:30 – 17:30
Energy Efficiency and Conservation</td></tr>
<tr><td colspan="3">Session A.2
I. Drakopoulos Hall
17:30 – 19:30
Roundtable discussion</td></tr>
<tr><td colspan="2">Dinner
Kostis Palamas building
20:30</td><td colspan="3">Farewell Dinner
“Stamatopoulos Old Tavern”
21:00</td></tr>
</table>

Museum of University History: *5 Tholou St., Plaka area*
NKUA Ceremonial Hall: *30 Eleutheriou Venizelou (Panepistimiou) Av., Centre area*
I. Drakopoulos Hall: *30 Eleutheriou Venizelou (Panepistimiou) Av., Centre area*
Kostis Palamas building: *48 Akadimias St., Centre area*
“Stamatopoulos Old Tavern”: *26 Lysiou St., Plaka area*

CONFERENCE PROGRAMME

Day 1: Wednesday 8/10

09:15-11:00

SESSION A.1 – Opening Ceremonial Hall

Coordinators

Prof. Ioannis KARAKOSTAS, Vice Rector, NKUA, Greece (Chairman)
Prof. Dimitrios MAVRAKIS, Director, NKUA-KEPA , Greece (Introductory remarks)
HE, Ambassador Mr. Leonidas CHRYSANTHOPOULOS, Secretary General, BSEC – PERMIS

Speakers

Mr. Christos FOLIAS, Minister of Development, Greece
Mr. Genc RULI, BSEC Acting Chairman, Minister of Economy, Trade and Energy, Albania
Mr. Tudor COPACI, Deputy Minister of Economy and Trade, Moldova
Mr. Petros DOUKAS, Deputy Minister of Foreign Affairs, Greece

11:00-11:30 — ***Coffee break***

11:30-13:00

Coordinators

Mr. Theodoros SKYLAKAKIS, Secretary General, Hellenic MFA (Introductory remarks)
Prof. Dimitrios MAVRAKIS, Director, NKUA-KEPA , Greece (Chairman)
HE, Ambassador Mr. Leonidas CHRYSANTHOPOULOS, Secretary General, BSEC – PERMIS (Concluding remarks)

Speakers

HE, Ambassador Mr. Valerii TSYBUKH, Ambassador of Ukraine to Greece
HE, Ambassador Dr. Wolfgang SCHULTHEISS, Ambassador of German Federation to Greece
HE, Ambassador Mr. Irakli TAVARTKILADZE, Ambassador of Georgia to Greece
***HE, Ambassador Mr. George CIAMBA**, Ambassador of Romania to Greece

13:00-14:00 — ***Registration***
(All participants will register at I. Drakopoulos Hall)

14:00-15:00 — ***Lunch buffet***

15:00-18:00

SESSION B.1 – "Energy Project Financing – Investment and Trade Opportunities"
I. Drakopoulos Hall

Focus

Financial stakeholders will present and discuss energy project financing schemes, tools and mechanisms as well as test cases of regional importance. National stakeholders will present investment and trade opportunities of national scale in the Black Sea region regarding energy and environment.

Coordinators

Dr. Lulin RADULOV, Director, BSREC, Bulgaria (Chairman)
Mr. Constantinos MANIATOPOULOS, Former EU Director General of Energy, Greece (Introductory remarks)
Dr. Dejan OSTOJIC, World Bank – ECA (Concluding remarks)

Speakers

Mr. Konstantinos MASMANIDIS, Business Council, BSEC
Mr. Georgi HOROZOV, Energy and Infrastructure, BSTDB
Mr. Milko KOVACHEV, Power & Energy Utilities, EBRD
Mr. Bashkim SYKJA, Director, Business Promotion Directorate, Ministry of Economy, Trade and Energy, Albania
Dr. Sedat CAL, Energy Charter Secretariat
Mr. Marian MAMEI, Deputy Head, Division for Investment Policy, Ministry of Economy and Trade, Moldova
Mr. Fatjon TUGU, Director, Energy Policies, Ministry of Economy, Trade and Energy, Albania
Mr. Konstantinos ZAIMIS, Project Coordinator, BSEC-PERMIS
Discussion

SESSION C.1 – "Conventional Fuels"
Kostis Palamas building

Coordinators

Prof. Elmira RAMAZANOVA, Director, GPOGC, Azerbaijan
Prof. Konstantinos KARAGIANNOPOULOS, National Technical University of Athens, Greece

Introductory remarks

Mr. Tarik MEZIANI, Directorate for Research, European Commission

Presentations

Mr. George ABULASHVILI, Energy Efficiency Centre, Georgia
Prof. Victor P. ALFEROV, Murom Institute of Vladimir State University, Russia
Dr. Katarzyna CZEREWACZ, Bialystok Technical University, Poland
Dr. Haji MELIKOV, GPOGC, Azerbaijan

SESSION C.2 – "Climate Change Policy"
Kostis Palamas building

Coordinators

Prof. Evgenij INSHEKOV, ESEMI, Ukraine
Prof. Konstantinos KARAGIANNOPOULOS, National Technical University of Athens, Greece

Presentations

Dr. Popi KONIDARI, NKUA-KEPA, Greece
Dr. Bilgin HILMIOGLU, TUBITAK – MRC, Turkey

20:30 — ***Dinner***

Day 2: Thursday 9/10

09:15-11:00

SESSION B.2 – "Regional Energy Projects"
I. Drakopoulos Hall

Focus

Energy projects of a regional importance, in any stage of implementation. Oil & Natural gas projects (upstream and downstream), pipelines and electricity infrastructure will be presented and discussed by state and private stakeholders

Coordinators

Mrs. Teresa FOKIANOU, Chairman & M.D., FLOW, Greece (Chairwoman)

Prof. Elmira RAMAZANOVA, Director, GPOGC, Azerbaijan (Introductory remarks)

Speakers

Dr. Evangelos LEKATSAS, Chairman of the Board of Directors, HTSO, Greece

Mr. Woodward Clark PRICE , Economic Counselor, United States Embassy, Greece

Mr. Naske AFEZOLLI, TAP AG, Switzerland

Mr. Spyros PALEOYANNIS, Deputy Chairman IENE, Greece

Discussion

SESSION C.3 – "Electricity"
Kostis Palamas building

Coordinators

Prof. Michail CHIORSAK, IPE, Moldova

Prof. Evangelos DIALYNAS, National Technical University of Athens, Greece

Prof. Anca POPESCU, ISPE, Romania

Presentations

Prof. Tudor AMBROS, Technical University of Moldova, Moldova

Mr. Panagiotis ANDRIANESIS, University of Thessaly, Greece

Mrs. Anca Simona BARDICI, ISPE, Romania

Dr. Nikolas CHARISIOU, TEI West Macedonia, Greece

Mrs. Florentina MIHAILESCU, ANRE, Romania

Dr. Kostis PERRAKIS, Regulatory Authority for Energy, Greece

Prof. Anca POPESCU, ISPE, Romania

Dr. Basilis PSILOGLOU, National Observatory of Athens, Greece

Mr. Ilias RAMPIDIS, National Technical University of Athens, Greece

11:00-11:30

Coffee break

11:30-14:00

SESSION B.3 – "Renewables & Energy Efficiency"
I. Drakopoulos Hall

Focus

Policies, initiatives and project financing schemes regarding RES, energy efficiency and conservation and clean technologies will be presented and discussed

Coordinators

Prof. Arthur PRAKHOVNYK, Director, ESEMI, Ukraine (Chairman)

Mr. Panagiotis GENNIMATAS, Honorary Vice President of EIB, Greece (Introductory remarks)

Prof. Mustafa TIRIS, TUBITAK – MRC, Turkey (Concluding remarks)

Speakers

Mr. Levon VARDANYAN, Head of Development Department, Ministry of Energy and Natural Resources, Armenia

Mr. Solon KASINIS, Director, Energy Agency, Ministry of Commerce, Industry and Tourism, Cyprus

Mr. Ioannis DESYPRIS, Endesa Hellas, Greece

Mrs. Irina NICOLAU, Romanian Agency for Energy Conservation, Romania

Mr. George ABULASHVILI, Energy Efficiency Centre, Georgia

Dr. Dimitrios PAPASTEFANAKIS, Centre of Renewable Energy Sources, Greece

Prof. Arthur PRAKHOVNYK, Director, ESEMI, Ukraine

Mrs. Camelia VASILE, ISPE, Romania

Discussion

14:00-15:00

Lunch buffet

15:00-17:00

SESSION B.4 – "Climate Change Challenges"
I. Drakopoulos Hall

Focus

Both policy and commercial stakeholders will present climate change implications and policies for their mitigation, Kyoto mechanisms and deliberations regarding a post-Kyoto agreement

Coordinators

Prof. Dimosthenis ASIMAKOPOULOS, Vice Rector, NKUA, Greece (Chairman)

Mr. Ioannis PALAIOKRASSAS, Former EU Commissioner,

SESSION C.4 – "Environment - Biofuels"
Kostis Palamas building

Coordinators

Prof. Arthur PRAKHOVNYK, Director, ESEMI, Ukraine

Prof. Miltos A. TYPAS, NKUA, Greece

Presentations

Dr. Nikolas CHARISIOU, TEI West Macedonia, Greece

Mr. Jan GASIOREK, Institute of Natural Fibres, Poland

Prof. Nikitas NIKITAKOS, University of the Aegean, Greece

Greece (Introductory remarks)

Speakers

Mr. Miltos TSOSKOUNOGLOU, Director, Environmental Protection, Toyota Hellas

Mrs. Teresa FOKIANOU, Chairman & M.D., FLOW, Greece

Dr. Popi KONIDARI, NKUA-KEPA , Greece

Discussion

Dr. Diana RABADJIEVA, Institute of General and Inorganic Chemistry, Academy of Sciences, Bulgaria

Mrs. Galina XANTHOPOULOU, NSCR "Demokritos", Greece

Coffee Break

SESSION C.5 – "Energy Efficiency and Conservation"

Kostis Palamas building

Coordinators

Prof. Agis PAPADOPOULOS, Aristotle University of Thessaloniki, Greece

Dr. Haji MELIKOV, GPOGC, Azerbaijan

Presentations

Mr. Marius CLAUDY, Dublin Institute of Technology, Ireland

Mr. Vassilis NIKOLOPOULOS, National Technical University of Athens, Greece

Dr. Athanassios DAGOUMAS, Cambridge Centre for Climate Change Mitigation Research, University of Cambridge, UK

17:00-17:30 ***Coffee Break***

17:30-19:30 **SESSION A.2 – Roundtable discussion**

I. Drakopoulos Hall

Focus

Does the present political and economic landscape favors regional synergies promoting implementation of Kyoto protocol mechanisms, energy investment and trade transactions in Black Sea? Can an initiative for the development of a RIEO among the BSEC countries gain regional support from the market forces?

Coordinator

Prof. Dimitrios MAVRAKIS, Director, NKUA-KEPA

Panelists

Mr. Constantinos MANIATOPOULOS, Former EU Director General of Energy

Dr. Dejan OSTOJIC, World Bank – ECA

Mr. Ioannis PALAIOKRASSAS, Former EU Commissioner, - Environment

Mr. Milko KOVACHEV, Power & Energy Utilities, EBRD

Mr. Goetz FUNCK, Director General, German-Greek Chamber of Industry and Commerce

Mr. Panagiotis GENNIMATAS, Honorary Vice President of European Investment Bank (EIB)

21:00 ***Farewell Dinner***

BLACK SEA ECONOMIC COOPERATION
ALBANIAN CHAIRMANSHIP

Black Sea Energy Policy Conference

Energy Investments and Trade Opportunities

PROMITHEAS-2
The EU-BSEC Energy and Climate Policy Network

Registration Form

Personal information		
Name:	Title:	
Organization:		
Position:		
Full Address (incl. postal code, city, country):		
Telephone:	Fax:	
E-mail:		
Registration categories		
Policy and business sessions (B)	€ 300	☐
Scientific sessions (C), participants from Azerbaijan, Bulgaria, Moldova, Romania and Ukraine	€ 120	☐
Scientific sessions (C), participants from other countries (Greece included)	€ 180	☐
Method of payment		
I will pay by bank transfer: EMPORIKI Bank IBAN: GR79 0120 0350 0000 0008 1706 531 Swift/BIC: EMPOGRAA, Beneficiary: NKUA/SARG		☐
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I shall stay at the ATHINAIS hotel		☐
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Please send the completed registration form to the following address:

Energy Policy and Development Centre (KEPA)
National and Kapodistrian University of Athens
Panepistimiopolis, KEPA Building
157-84 Athens, Greece
Tel.: (+30) 210-7275732 – Fax: (+30) 210-7275828
E-mail: epgsec@kepa.uoa.gr

Annex IV: Actual agenda of the Final Conference

CONFERENCE AGENDA

Day 1: Wednesday 8/10

09:15-11:00

SESSION A.1 – Opening Ceremonial Hall

Coordinators

Prof. Ioannis KARAKOSTAS, Vice Rector, NKUA, Greece (Chairman)
Prof. Dimitrios MAVRAKIS, Director, NKUA-KEPA , Greece (Introductory remarks)
HE, Ambassador Mr. Leonidas CHRYSANTHOPOULOS, Secretary General, BSEC – PERMIS

Speakers

Mr. Christos FOLIAS, Minister of Development, Greece
Mr. Genc RULI, BSEC Acting Chairman, Minister of Economy, Trade and Energy, Albania
Mr. Tudor COPACI, Deputy Minister of Economy and Trade, Moldova
Mr. Petros DOUKAS, Deputy Minister of Foreign Affairs, Greece

11:00-11:30 — ***Coffee break***

11:30-13:00

Coordinators

Mr. Theodoros SKYLAKAKIS, Secretary General, Hellenic MFA (Introductory remarks)
Prof. Dimitrios MAVRAKIS, Director, NKUA-KEPA , Greece (Chairman)
HE, Ambassador Mr. Leonidas CHRYSANTHOPOULOS, Secretary General, BSEC – PERMIS (Concluding remarks)

Speakers

HE, Ambassador Dr. Wolfgang SCHULTHEISS, Ambassador of German Federation to Greece
HE, Ambassador Mr. Irakli TAVARTKILADZE, Ambassador of Georgia to Greece
HE, Ambassador Mr. George CIAMBA, Ambassador of Romania to Greece

13:00-14:00 — ***Registration***
(All participants will register at I. Drakopoulos Hall)

14:00-15:00 — ***Lunch buffet***

15:00-18:00

SESSION B.1 – "Energy Project Financing – Investment and Trade Opportunities"
I. Drakopoulos Hall

Focus

Financial stakeholders will present and discuss energy project financing schemes, tools and mechanisms as well as test cases of regional importance. National stakeholders will present investment and trade opportunities of national scale in the Black Sea region regarding energy and environment.

Coordinators

Dr. Lulin RADULOV, Director, BSREC, Bulgaria (Chairman)
Mr. Constantinos MANIATOPOULOS, Former EU Director General of Energy, Greece (Introductory remarks)
Dr. Dejan OSTOJIC, World Bank – ECA (Concluding remarks)

Speakers

Mr. Konstantinos MASMANIDIS, Business Council, BSEC
Mr. Georgi HOROZOV, Energy and Infrastructure, BSTDB
Mr. Milko KOVACHEV, Power & Energy Utilities, EBRD
Mr. Bashkim SYKJA, Director, Business Promotion Directorate, Ministry of Economy, Trade and Energy, Albania
Dr. Sedat CAL, Energy Charter Secretariat
Mr. Marian MAMEI, Deputy Head, Division for Investment Policy, Ministry of Economy and Trade, Moldova
Mr. Fatjon TUGU, Director, Energy Policies, Ministry of

SESSION C.1 – "Conventional Fuels"
Kostis Palamas building

Coordinators

Prof. Evgenij INSHEKOV, ESEMI, Ukraine
Prof. Konstantinos KARAGIANNOPOULOS, National Technical University of Athens, Greece

Introductory remarks

Mr. Tarik MEZIANI, Directorate for Research, European Commission

Presentations

Mr. George ABULASHVILI, Energy Efficiency Centre, Georgia
Dr. Katarzyna CZEREWACZ, Bialystok Technical University, Poland
Dr. Haji MELIKOV, GPOGC, Azerbaijan

SESSION C.2 – "Climate Change Policy"
Kostis Palamas building

Coordinators

Prof. Evgenij INSHEKOV, ESEMI, Ukraine
Prof. Konstantinos KARAGIANNOPOULOS, National Technical University of Athens, Greece

Presentations

Dr. Popi KONIDARI, NKUA-KEPA, Greece
Dr. Bilgin HILMIOGLU, TUBITAK – MRC, Turkey

Economy, Trade and Energy, Albania
Mr. Konstantinos ZAIMIS, Project Coordinator, BSEC-PERMIS
Discussion

20:30 ***Dinner***

Day 2: Thursday 9/10

09:15-11:00

SESSION B.2 – "Regional Energy Projects"
I. Drakopoulos Hall

Focus

Energy projects of a regional importance, in any stage of implementation. Oil & Natural gas projects (upstream and downstream), pipelines and electricity infrastructure will be presented and discussed by state and private stakeholders

Coordinators

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Prof. Elmira RAMAZANOVA, Director, GPOGC, Azerbaijan
(Introductory remarks)

Speakers

Dr. Evangelos LEKATSAS, Chairman of the Board of Directors, HTSO, Greece
Mr. Woodward Clark PRICE, Economic Counselor, United States Embassy, Greece
Mr. Naske AFEZOLLI, TAP AG, Switzerland
Mr. Spyros PALEOYANNIS, Deputy Chairman IENE, Greece
Discussion

SESSION C.3 – "Electricity"
Kostis Palamas building

Coordinators

Prof. Michail CHIORSAK, IPE, Moldova
Prof. Evangelos DIALYNAS, National Technical University of Athens, Greece
Prof. Anca POPESCU, ISPE, Romania

Presentations

Prof. Tudor AMBROS, Technical University of Moldova, Moldova
Mr. Panagiotis ANDRIANESIS, University of Thessaly, Greece
Mrs. Anca Simona BARDICI, ISPE, Romania
Mrs. Florentina MIHAILESCU, ANRE, Romania
Dr. Kostis PERRAKIS, Regulatory Authority for Energy, Greece
Prof. Anca POPESCU, ISPE, Romania
Dr. Basilis PSILOGLOU, National Observatory of Athens, Greece
Mr. Ilias RAMPIDIS, National Technical University of Athens, Greece

11:00-11:30 ***Coffee break***

11:30-14:00

SESSION B.3 – "Renewables & Energy Efficiency"
I. Drakopoulos Hall

Focus

Policies, initiatives and project financing schemes regarding RES, energy efficiency and conservation and clean technologies will be presented and discussed

Coordinators

Prof. Mustafa TIRIS, TUBITAK – MRC, Turkey
(Chairman & Concluding remarks)

Speakers

Mr. Levon VARDANYAN, Head of Development Department, Ministry of Energy and Natural Resources, Armenia
Mr. Solon KASINIS, Director, Energy Agency, Ministry of Commerce, Industry and Tourism, Cyprus
Mr. Pantelis VOGIATZIS, Endesa Hellas, Greece
Mrs. Irina NICOLAU, Romanian Agency for Energy Conservation, Romania
Mr. George ABULASHVILI, Energy Efficiency Centre, Georgia
Mr. Vasileios PAPANDREOU, Centre of Renewable Energy Sources, Greece
Prof. Evgenij INSHEKOV, Director, ESEMI, Ukraine
Mrs. Camelia VASILE, ISPE, Romania
Discussion

14:00-15:00 ***Lunch buffet***

15:00-17:00

SESSION B.4 – "Climate Change Challenges"

I. Drakopoulos Hall

Focus

Both policy and commercial stakeholders will present climate change implications and policies for their mitigation, Kyoto mechanisms and deliberations regarding a post-Kyoto agreement

Coordinators

Prof. Dimosthenis ASIMAKOPOULOS, Vice Rector, NKUA, Greece (Chairman)

Mr. Ioannis PALAIOKRASSAS, Former EU Commissioner, Greece (Introductory remarks)

Speakers

Mr. Miltos TSOSKOUNOGLOU, Director, Environmental Protection, Toyota Hellas

Mrs. Teresa FOKIANOU, Chairman & M.D., FLOW, Greece

Dr. Popi KONIDARI, NKUA-KEPA , Greece

Discussion

SESSION C.4 – "Environment - Biofuels"

Kostis Palamas building

Coordinators

Prof. Anca POPESCU, ISPE, Romania

Prof. Miltos A. TYPAS, NKUA, Greece

Presentations

Mr. Jan GASIOREK, Institute of Natural Fibres, Poland

Prof. Nikitas NIKITAKOS, University of the Aegean, Greece

Dr. Diana RABADJIEVA, Institute of General and Inorganic Chemistry, Academy of Sciences, Bulgaria

Mrs. Galina XANTHOPOULOU, NSCR "Demokritos", Greece

Coffee Break

SESSION C.5 – "Energy Efficiency and Conservation"

Kostis Palamas building

Coordinators

Prof. Agis PAPADOPOULOS, Aristotle University of Thessaloniki, Greece

Dr. Haji MELIKOV, GPOGC, Azerbaijan

Presentations

Mr. Marius CLAUDY, Dublin Institute of Technology, Ireland

Dr. Vassilis NIKOLOPOULOS, National Technical University of Athens, Greece

Dr. Athanassios DAGOUMAS, Cambridge Centre for Climate Change Mitigation Research, University of Cambridge, UK

17:00-17:30

Coffee Break

17:30-19:30

SESSION A.2 – Roundtable discussion

I. Drakopoulos Hall

Focus

Does the present political and economic landscape favors regional synergies promoting implementation of Kyoto protocol mechanisms, energy investment and trade transactions in Black Sea? Can an initiative for the development of a RIEO among the BSEC countries gain regional support from the market forces?

Coordinator

Prof. Dimitrios MAVRAKIS, Director, NKUA-KEPA

Panelists

Mr. Constantinos MANIATOPOULOS, Former EU Director General of Energy

Dr. Dejan OSTOJIC, World Bank – ECA

Mr. Ioannis PALAIOKRASSAS, Former EU Commissioner of Environment

Mr. Milko KOVACHEV, Power & Energy Utilities, EBRD

Mr. Goetz FUNCK, Director General, German-Greek Chamber of Industry and Commerce

21:00

Farewell Dinner

Annex V: Session A presentations

Prof. Ioannis KARAKOSTAS, Vice Rector, NKUA, Greece

Κυρίες και κύριοι σας καλωσορίζω στο Πανεπιστήμιο Αθηνών και το πολύ σημαντικό αυτό Συνέδριο υπό την αιγίδα του Κέντρου Ενεργειακής Πολιτικής και Ανάπτυξης.

Η περιοχή της Μαύρης Θάλασσας αποκτά όλο και μεγαλύτερη σημασία στον παγκόσμιο ενεργειακό χάρτη και η δημιουργία συνθηκών για επενδύσεις και την συνεπαγόμενη ανάπτυξη στην περιοχή αυτή, είναι στο προσκήνιο.

Ο ρόλος της Ελλάδας στο καινούργιο τοπίο, το οποίο διαμορφώνεται, είναι εξαιρετικά σημαντικός και απαιτείται εγρήγορση ώστε να εδραιωθεί. Η Ευρωπαϊκή Ένωση προωθεί την συνεργασία με τις χώρες της Μαύρης Θάλασσας μέσω της δημιουργίας δικτύων, με σκοπό την προώθηση της οικονομικής ανάπτυξης αλλά και της επιστημονικής συνεργασίας των χωρών της ευρύτερης περιοχής.

Το Πανεπιστήμιο Αθηνών θέλοντας να ενισχύσει αυτού του τύπου την συνεργασία, συμμετέχει ενεργά, ενθαρρύνει και στηρίζει αυτές της δράσεις, οι οποίες προωθούν την επιστημονική συνεργασία, φέρνοντας κοντά επιστήμονες και ερευνητές από διαφορετικές χώρες.

Κλείνοντας θα μου επιτρέψετε να αναφερθώ σε ένα θέμα που προσωπικά θεωρώ άρρηκτα δεμένο με την οικονομική και ενεργειακή ανάπτυξη: την προστασία του περιβάλλοντος.

Το περιβάλλον -και η προστασία του- είναι απόλυτο αγαθό, είναι απάντηση στο υπαρξιακό μας ερώτημα και κατάφαση στην αρμονία της φύσεως, στην αισθητική, στην ποιότητα ζωής, στην αξία του ανθρώπου και υπό την έννοια αυτή διαχρονική φιλοσοφική αναζήτηση και θέση. Πρέπει συνεπώς όλοι μας ιδίως οι νεότερες γενιές να ενστερνισθούν τη θέση και την άποψη ότι πρώτο και μοναδικό μας μέλημα είναι η προστασία του περιβάλλοντος και ο αγώνας προς την κατάκτηση αυτή πρέπει να είναι συνεχής, αδιάκοπος και να μην φείδεται μέσων και θυσιών.

Κυρίες και κύριοι εύχομαι καλή επιτυχία στις εργασίες του Συνεδρίου

Prof. Dimitrios MAVRAKIS, Director, NKUA-KEPA, Greece

Κύριοι Υπουργοί, κύριοι Πρέσβεις,

Κυρίες και κύριοι, καλή σας ημέρα

Εκ μέρους της οργανωτικής επιτροπής του Συνεδρίου, η οποία αποτελείται από διακεκριμένους συναδέλφους από το Αζερμπαϊτζάν, τη Βουλγαρία, τη Μολδαβία, τη Ρουμανία και την Ουκρανία επιτρέψτε μου να εκφράσω τις βαθύτατες ευχαριστίες μου για τη σημερινή παρουσίας σας.

Το Συνέδριο πραγματοποιείται στα πλαίσια των δραστηριοτήτων του προγράμματος PROMITHEAS -2 της Ε.Ε. και με την αρωγή χορηγών που αναφέρονται στα έντυπα μας και ιδιαιτέρως της **EGL**, προς τους οποίους εκφράζονται θερμές ευχαριστίες.

Κυρίες και κύριοι

Αποτελεί ιδιαίτερη τιμή το γεγονός ότι το Συνέδριο διεξάγεται υπό την αιγίδα της Αλβανικής Προεδρίας του Οργανισμού Οικονομικής Συνεργασίας των χωρών του Εύξεινου Πόντου (BSEC) και ότι ο προεδρεύων Αλβανός Υπουργός Οικονομίας, Εμπορίου και Ενέργειας **κ Genc RULI** έκανε δεκτό το αίτημα μας να προλογίσει τις εργασίες του Συνεδρίου μας, ενώ αποτελεί έμπρακτη έκφραση του ενδιαφέροντος που η Ελληνική Κυβέρνηση αποδίδει στην προώθηση της συνεργασίας με τις χώρες της ΟΣΕΠ η παρουσία του Υπουργού Ανάπτυξης **κ. Χρ. Φώλια,** Υφυπουργού Εξωτερικών **κ. Π. Δούκα** και του Γεν, Γραμματέα του ιδίου Υπουργείου **κ. Θεοδ. Σκυλακάκη**.

Είναι μάλιστα η κατάλληλη στιγμή, με την ευκαιρία της παρουσίας του Γεν. Γραμματέα της Μόνιμης Γραμματείας της ΟΣΕΠ (BSEC) στη Κωνσταντινούπολη πρέσβεως **κ. Λεωνίδα ΧΡΥΣΑΝΘΟΠΟΥΛΟΥ,** να εκφράσουμε δημοσίως τις ευχαριστίες μας για την ενεργό υποστήριξη που μας παρέχεται από την Μόνιμη Γραμματεία στις προσπάθειες μας, που όπως θα ενημερωθείτε, καταβάλλουμε για την προώθηση και ενίσχυση των σχέσεων περιφερειακής συνεργασίας στις χώρες της ΟΣΕΠ (BSEC).

Όπως επίσης είναι η κατάλληλη στιγμή να εκφράσουμε τις ευχαριστίες μας για τη συμμετοχή του αναπληρωτή υπουργού για θέματα ενέργειας της Μολδαβίας κ. **Tudor COPACI,** καθώς και των Πρέσβεων της Γεωργίας και της Ομοσπονδιακής Γερμανίας που δέχθηκαν να χαιρετήσουν το Συνέδριο μας.

Το δίκτυο PROMITHEAS δημιουργήθηκε το 2004 με χρηματοδότηση από το Ταμείο Ανάπτυξης Προγραμμάτων (Project Development Fund) της ΟΣΕΠ (BSEC) και απετελέσθει από επιστημονικά ιδρύματα έξη χωρών του οργανισμού, με σκοπό την προώθηση της συνεργασίας στην έρευνα, την εκπαίδευση και την οικονομία σε θέματα πολιτικής για την ενέργεια και την κλιματική αλλαγή.

Σήμερα με τη βοήθεια της ΟΣΕΠ και την χρηματοδότηση από την Ε.Ε. και το Ελληνικό Υπουργείο Εξωτερικών, μέσω του προγράμματος Ελληνικής Βοήθειας (Hellenic Aid) το δίκτυο έχει αναπτυχθεί σε δέκα έξη (16) χώρες της Ν.Α. Ευρώπης, του Εύξεινου Πόντου, της Κασπίας και της Κεντρικής Ασίας.

Το Συνέδριο, του οποίου η έναρξη θα πραγματοποιηθεί εντός ολίγου, εκφράζει το αποτέλεσμα της συλλογικής προσπάθειας να συζευχθεί, σε περιφερειακή κλίμακα, η επιστημονική και επιχειρηματική κοινότητα σε θέματα παραγωγής και μεταφοράς γνώσης στις περιοχές της πολιτικής για την ενέργεια και την κλιματική αλλαγή και τους μηχανισμούς του πρωτοκόλλου του Kyoto. Ταυτοχρόνως όμως επιχειρείται η ανάδειξη των προοπτικών και πρωτοβουλιών που θα επιτρέψουν τη συνέχεια των δραστηριοτήτων αυτών στο μέλλον.

Στη διάρκεια των τελευταίων ετών το δίκτυο οργάνωσε διεθνείς επιστημονικές ημερίδες στο Μπακού, στην Κωνσταντινούπολη, στη Σόφια, στο Κίεβο και στην Αθήνα και ενθαρρύναμε τους επιστήμονες των χωρών μας και των άλλων της περιοχής να παρουσιάσουν τα αποτελέσματα της έρευνας τους στις ημερίδες αυτές. Επί πλέον για πρώτη φορά αυτό το έτος έγινε δεκτή με υποτροφία μία υποψήφια διδάκτωρ από την Ουκρανία, για τέσσερα έτη και ένας μεταδιδακτορικός ερευνητής από το Καζακστάν για ένα έτος, στις εγκαταστάσεις του ΚΕΠΑ.

Παράλληλα μέσα από το διμηνιαίο ηλεκτρονικό δελτίο που κυκλοφορούμε σε περισσότερες από 100 χώρες με 10.000 αποδέκτες προσπαθούμε να προβάλουμε τις επιστημονικές δραστηριότητες των μελών του δικτύου και να ενισχύσουμε τους δεσμούς συνεργασίας μεταξύ τους.

Θεωρούμε ως εξαιρετική επιτυχία για τις δραστηριότητες του PROMITHEAS τη συγκέντρωση του απαραίτητου δυναμικού, από διακεκριμένους ακαδημαϊκούς και καθηγητές των χωρών της περιοχής, που απετέλεσαν την επιστημονική επιτροπή του δίγλωσσου επιστημονικού περιοδικού, που εκδώσαμε με τους ελάχιστους πόρους που μπορέσαμε να εξασφαλίσουμε από τη χρηματοδότηση της Ε.Ε. και του οποίου το πρώτο τεύχος σας έχει διανεμηθεί ενώ επιπλέον μπορέσαμε να βραβεύσουμε τα τέσσερα καλύτερα δημοσιευμένα άρθρα με χρηματικά βραβεία που απένειμε διεθνής επιτροπή.

Ελπίζουμε ότι η επιτυχία του μέρους αυτού του Συνεδρίου θα επιτρέψει την καθιέρωση ενός περιοδικά επαναλαμβανόμενου επιστημονικού Συνεδρίου στην περιοχή μας καθώς και την συνέχιση της έκδοσης του περιοδικού που προανέφερα.

Αυτοί λοιπόν είναι οι στόχοι μας για τις μελλοντικές επιστημονικές δραστηριότητες του δικτύου. Αυξανόμενης ποιότητας ημερίδες, εξασφάλιση υποτροφιών για υποψήφιους διδάκτορες και μεταδιδακτορικούς νέους επιστήμονες, παρουσίαση των ερευνητικών αποτελεσμάτων στο δίγλωσσο επιστημονικό περιοδικό και περιοδικώς επαναλαμβανόμενα επιστημονικά συνέδρια.

Στις δραστηριότητες που αναπτύξαμε περιλαμβάνεται και αυτή ενός Σεμιναρίου τηλε-εκπαίδευσης που μας επέτρεψε, εκμεταλλευόμενοι τις δυνατότητες του δικτύου, να προκηρύξουμε και να εκτελέσουμε ένα εξάμηνο πρόγραμμα τηλε-εκπαίδευσης με καθηγητές και μαθητές από χώρες της περιοχής.

Χωρίς να μετακινηθούν από τις πόλεις τους, ενσωματώθηκαν σε μία υψηλής στάθμης εκπαιδευτική διαδικασία η οποία για αυτούς που μπόρεσαν να ανταπεξέλθουν επιτυχώς στις ενδιάμεσες εξετάσεις, ολοκληρώθηκε με μια εβδομάδα εντατικής διδασκαλίας στην Αθήνα.

Η συνεργασία καθηγητών από την Ελλάδα και τη Μολδαβία με μαθητές από την Αρμενία, τη Μολδαβία, τη Ρωσία, την Ουκρανία και την Ελλάδα, αποτέλεσε μια ιδιαίτερα θετική εμπειρία για όλους τους συμμετέχοντες.

Αυτήν την πολύτιμη εμπειρία που αποκτήσαμε, θα την επεκτείνουμε και θα την εμπλουτίσουμε στα επόμενα χρόνια χάρις στην οικονομική βοήθεια που εξασφαλίσαμε από την Hellenic Aid με την σύμφωνη γνώμη των κυβερνήσεων των χωρών του Ευξείνου Πόντου, της Κασπίας και της Κεντρικής Ασίας και την οικονομική βοήθεια που ευελπιστούμε ότι θα εξασφαλίσουμε από διεθνή προγράμματα.

Με αφετηρία το πολιτικό πλαίσιο των διακηρύξεων των Υπουργών Ενέργειας της ΟΣΕΠ και με την ενίσχυση της Μόνιμης Γραμματείας της ΟΣΕΠ, το δίκτυο προχώρησε στην έκδοση της ετήσιας Ενεργειακής Επισκόπησης των χωρών του Ευξείνου Πόντου (Energy View of BSEC Countries), με εθνικές εκθέσεις την ευθύνη των οποίων έχουν αντίστοιχα επιστημονικά ιδρύματα των χωρών της ΟΣΕΠ. Με τη βοήθεια του Project Development Fund και της Hellenic Aid και υπό την αιγίδα της ΟΣΕΠ εκδώσαμε δύο τόμους. Η πρόσφατη

έγκριση σχετικής πρότασης από την Hellenic Aid όχι μόνο θα επιτρέψει την επόμενη έκδοση αλλά κυρίως, μέσα από προγραμματισμένες διαδικασίες ενημέρωσης των ενεργειακών παικτών σε εθνική και περιφερειακή κλίμακα

θα μας επιτρέψει τη διεύρυνση του χώρου διάχυσης πληροφοριών για τις επενδυτικές και εμπορικές ευκαιρίες που διαμορφώνονται στις χώρες της ΟΣΕΠ, στους τομείς της ενέργειας και των μηχανισμών του Kyoto.

Από την άποψη αυτή το πολιτικό μέρος του συνεδρίου ευρίσκεται σε πλήρη συνάφεια με την προσπάθεια προβολής των υφιστάμενων επενδυτικών και εμπορικών ευκαιριών στους τομείς της ενέργειας και των μηχανισμών του Kyoto στις χώρες της περιοχής μας.

Ελπίζουμε ότι αυτή η διάσταση του Συνεδρίου θα συνεχισθεί και την επόμενη χρονιά, σε άλλη χώρα, ανάλογα με την Προεδρία της ΟΣΕΠ και ότι θα αποτελέσει μια διαδικασία παράλληλης διεύρυνσης των υπουργικών συναντήσεων της ΟΣΕΠ.

Εκείνο όμως που θεωρούμε ότι παρουσιάζει ιδιαίτερο ενδιαφέρον είναι η πρωτοβουλία που έχουμε αναλάβει, ως δίκτυο, να διερευνήσουμε τις προοπτικές οργάνωσης και λειτουργίας ενός περιφερειακού ενδιάμεσου ενεργειακού οργανισμού.

Ενός οργανισμού που εφ΄ όσον υλοποιηθεί, θα έχει ως αποτέλεσμα τη συγκρότηση ενός ενδιάμεσου χώρου όπου τράπεζες και χρηματοδοτικοί οργανισμοί των χωρών της ΟΣΕΠ θα μπορούν να συνεργάζονται μέσα από τυποποιημένες και διαφανείς διαδικασίες με αντίστοιχους ενεργειακούς παίκτες διευκολύνοντας την υλοποίηση επενδυτικών σχεδίων και εμπορικών συναλλαγών σε περιφερειακή κλίμακα.

Η πρωτοβουλία στηρίζεται στις διατυπώσεις των αντίστοιχων υπουργικών διακηρύξεων για τη συγκρότηση μιας περιφερειακής αγοράς ενέργειας στον Εύξεινο Πόντο και αποτελεί κατά την γνώμη μας την ελάχιστη βάση συνεργασίας που μπορεί να διαμορφώσει συνθήκες αμοιβαίου οφέλους για τους εμπλεκόμενους.

Η ειδική συνάντηση ενδιαφερομένων μερών, που έχουμε προτείνει για την αυριανή ημέρα θα επιτρέψει την εκτίμηση των προοπτικών του εγχειρήματος και η συζήτηση στρογγυλής τραπέζης θα παράσχει τη δυνατότητα ανταλλαγής απόψεων από όλους τους ενδιαφερομένους. .

Κυρίες και Κύριοι,

Τα θέματα της ενέργειας και του κλίματος υπήρξαν πάντοτε σημαντικά για την επιβίωση μας. Από τις μακρινές εποχές του Προμηθέα, του κατακλυσμού και των ιερών φωτιών στη χερσόνησο του Απσερόν μέχρι σήμερα.

Είναι έργο των πολιτικών ηγεσιών να διαμορφώνουν τις πολιτικές αντιμετώπισης τους και είναι καθήκον όλων μας να επιχειρούμε να τις υλοποιήσουμε προωθώντας σχέσεις συνεργασίας και αμοιβαίου οφέλους.

Τα μέλη του PROMITHEA επιχειρούν στο μέτρο των δυνάμεων τους να υλοποιήσουν αυτές τις πολιτικές συνεργασίας που εσείς προτείνετε.

Η παρουσία σας σήμερα μας τιμά, μας ενθαρρύνει και σας ευχαριστούμε γι' αυτό.

Mr. Christos FOLIAS, Minister of Development, Greece

«Είναι μεγάλη μου χαρά να καλωσορίζω κι εγώ με τη σειρά μου στην Αθήνα εκλεκτούς προσκεκλημένους, σε μια συνάντηση για το ενεργειακό μέλλον της ευρύτερης περιοχής της Μαύρης Θάλασσας και της ΝΑ Ευρώπης. Είναι μια καλή ευκαιρία να ανταλλάξουμε γόνιμες απόψεις και προβληματισμούς πάνω σε μείζονα ενεργειακά ζητήματα που μας απασχολούν.

Θέλω μάλιστα να τονίσω ιδιαίτερα πως είναι χαρά μου να απευθύνομαι σε ένα ακροατήριο που απεικονίζει, με τον καλύτερο τρόπο τη βούληση για συνεργασία και συμπόρευση.

Αυτή η βούληση όμως δεν πρέπει να παραμένει σε ένα επίπεδο θεωρίας. Πρέπει να θεμελιώνεται σε ρεαλιστικούς στόχους και χειροπιαστά αποτελέσματα με αμοιβαία οφέλη για τους λαούς μας.

Οι εργασίες του Συνεδρίου πραγματοποιούνται σε μια συγκυρία σημαντική για την ευρύτερη περιοχή του Ευξείνου Πόντου. Σήμερα πλέον, όλες οι χώρες της περιοχής έχουν εισέλθει σε μια σταθερή αναπτυξιακή πορεία, ενώ ταυτόχρονα η διεθνής κοινότητα αναγνωρίζει τη σημασία της περιοχής ως μεταφορικού και ενεργειακού κόμβου, στο σταυροδρόμι μεταξύ Ευρώπης, Ασίας και Μέσης Ανατολής.

Νέες ευκαιρίες παρουσιάζονται διαρκώς για την εμβάθυνση της περιφερειακής συνεργασίας ή για την επέκτασή της σε νέους τομείς. Το ενδιαφέρον για τις εξελίξεις στην περιοχή βαίνει αυξανόμενο και οι προσδοκίες που έχουν δημιουργηθεί είναι υψηλές. Χωρίς αμφιβολία, η ανταπόκρισή μας στις υπάρχουσες προκλήσεις θα κρίνει, σε μεγάλο βαθμό, τις προοπτικές ολόκληρης της περιοχής στο μέλλον.

Ο Οργανισμός Οικονομικής Συνεργασίας των χωρών του Εύξεινου Πόντου, ως ο παλαιότερος, θεσμικά ωριμότερος και περισσότερο αντιπροσωπευτικός περιφερειακός οργανισμός οικονομικής συνεργασίας στην περιοχή, μπορεί να έχει σημαντική συνεισφορά σε αυτήν την κατεύθυνση και ειδικά στον ενεργειακό τομέα, ο οποίος έχει σοβαρές οικονομικές, πολιτικές και κοινωνικές προεκτάσεις.

Είναι γεγονός ότι το σύγχρονο παγκοσμιοποιημένο διεθνές περιβάλλον, είναι σύνθετο, απαιτητικό και ανταγωνιστικό. Οι γεωπολιτικές ανακατατάξεις που συντελούνται ανά τον κόσμο, η απελευθέρωση των αγορών, οι τεχνολογικές εξελίξεις, η παγκοσμιότητα έχουν επιφέρει σημαντικές αλλαγές στο ενεργειακό τοπίο. Σ αυτό το περιβάλλον εντάσσονται βεβαίως οι διεθνείς ενεργειακές διασυνδέσεις και η ανάγκη για πολλαπλότητα πηγών και διαύλων διέλευσης.

Η ελληνική θέση είναι σαφής και ξεκάθαρη. Η ενεργειακή ισορροπία είναι προϋπόθεση για την ειρήνη και την ευημερία των λαών. Για αυτό η προσπάθεια για ανάπτυξη συνεργειών πρέπει να είναι διαρκής, κατανικώντας δισταγμούς, αναβολές και καθυστερήσεις.

Πάνω σε αυτές τις κεντρικές επιλογές, ξεδιπλώνεται η ελληνική εξωστρεφής ενεργειακή στρατηγική. Στρατηγική που αναδεικνύει την κομβική θέση της Ελλάδας μεταξύ Ευρώπης και Ασίας στο σημείο τομής του συστήματος των τριών θαλασσών: Κασπίας, Μαύρης και Ανατολικής Μεσογείου.

Αναμφίβολα, η περιοχή μας είναι μεγάλης γεω-στρατηγικής και οικονομικής σημασίας, η οποία καθορίζεται από τρία βασικά χαρακτηριστικά:

1. Το μέγεθός της, καθώς πρόκειται για αγορά εκατομμυρίων καταναλωτών.
2. Η ιδιαίτερη δυναμικότητα, που επιδεικνύουν οι χώρες της περιοχής ως αναπτυσσόμενες αγορές και
3. Η ύπαρξη σημαντικών πηγών υδρογονανθράκων, που δίνουν στην περιοχή τον τριπλό χαρακτηρισμό ως: α) παραγωγού ενέργειας, β) καταναλωτή ενέργειας και γ) περιοχής διαμετακόμισης ενέργειας.

Ειδικότερα για την Ελλάδα, η περιοχή της Μαύρης Θάλασσας και της Κασπίας δεν αποτελεί απλώς μία περιοχή «στόχο» για την ανάπτυξη οικονομικών και εμπορικών σχέσεων.
Η περιοχή αυτή είναι το άμεσο γεωγραφικό περιβάλλον μας, είναι η γειτονιά μας, ένας χώρος όπου κινούμαστε και αναπτύσσουμε σχέσεις και συνεργασίες με βάθος αιώνων. Έχουμε κάθε λόγο να στηρίζουμε τη σύνδεση του ιστορικού παρελθόντος με τις ανάγκες και τις προκλήσεις του παρόντος, της μακραίωνης παράδοσης με την πρόοδο στο μέλλον. Έχουμε κάθε λόγο να προάγουμε τον αμοιβαίο σεβασμό, την κατανόηση, την κοινή προσπάθεια για την επίτευξη κοινών στόχων. Έχουμε καθήκον να συμβάλουμε θετικά στη συνολική κοινωνικο - οικονομική ανάπτυξη της περιοχής και στην εδραίωση συνθηκών ευημερίας.

Είναι εξαιρετικά ενθαρρυντικό ότι η παρευξείνια ζώνη είναι σήμερα η δεύτερη ταχύτερα αναπτυσσόμενη περιοχή του κόσμου μετά την Ανατολική Ασία, αφού σύμφωνα με τα στοιχεία της Τράπεζας Ευξείνου Πόντου, οι αναπτυξιακοί της ρυθμοί πλησιάζουν το 6%.

Πιστεύουμε και ευχόμαστε η ανάπτυξη αυτή να είναι κινητήρια δύναμη για ευημερία και σταθερότητα. Είναι πεποίθησή μας ότι οι χώρες του Ευξείνου Πόντου και της Κασπίας Θάλασσας θα παίξουν καθοριστικό ρόλο στην παγκόσμια ισορροπία της ενεργειακής αγοράς στο εγγύς μέλλον. Το ενεργειακό τους δυναμικό τούς επιτρέπει να στοχεύσουν να γίνουν οι προμηθευτές της ευρωπαϊκής αλλά και της παγκόσμιας ενεργειακής αγοράς. Παράλληλα, η στρατηγική τους θέση ανάμεσα στην Ανατολή και τη Δύση συγκεντρώνει το επιχειρηματικό ενδιαφέρον για επενδύσεις σε υποδομές.

Η λέξη «κλειδί» είναι οι διασυνδέσεις. Οι ενεργειακές πηγές που βρίσκονται στη Μαύρη Θάλασσα και την Κασπία πρέπει να μεταφερθούν στην Ευρώπη. Πρέπει να βρούμε τους πιο πρόσφορους και ασφαλείς δρόμους για να φτάσει το πετρέλαιο και το φυσικό αέριο στην ευρύτερη ευρωπαϊκή ενεργειακή αγορά. Και εδώ ο ρόλος της χώρας καθίσταται καίριος. Η Ελλάδα μπορεί και έχει καθοριστική συμβολή για την επιτυχή έξοδο των ενεργειακών προϊόντων της περιοχής στην ευρωπαϊκή αγορά. Ταυτόχρονα, η προώθηση της επίλυσης

των όποιων προβλημάτων και εκκρεμοτήτων θα ενισχύσει ακόμη περισσότερο το αίσθημα ασφάλειας των επενδυτών και θα συμβάλει στην ανάληψη περισσότερων επενδυτικών πρωτοβουλιών έτσι ώστε να εξασφαλιστεί μία μακροχρόνια σταθερή και επωφελής συνεργασία.

Η πρόοδος και η επιτυχία όλων αυτών των προσπαθειών μετατρέπει τον τομέα της ενέργειας σε κινητήριο μοχλό της ανάπτυξης και της οικονομικής ολοκλήρωσης των οικονομιών της Νοτιοανατολικής Ευρώπης, με τεράστια οφέλη για την ευημερία και την ειρήνη στην περιοχή μας. Βρισκόμαστε στο σταυροδρόμι μεγάλων διεθνών ενεργειακών δρόμων και δεν έχουμε το δικαίωμα να είμαστε απλοί παρατηρητές των εξελίξεων. Αντιθέτως! Οφείλουμε να είμαστε ενεργοί πρωταγωνιστές, ενεργοί παίκτες στην «καρδιά» των εξελίξεων. Σήμερα, περισσότερο από ποτέ, η γεωπολιτική της ενέργειας καθορίζει σφαίρες επιρροής και χώρους ζωτικών συμφερόντων. Εμείς με συνέπεια, μεθοδικότητα και ειλικρίνεια αξιοποιούμε αυτές τις νέες ευκαιρίες. Στοχεύουμε αφενός να προσφέρουμε στη χώρα ενεργειακή επάρκεια και ασφάλεια και αφετέρου να την καταστήσουμε διεθνή ενεργειακό κόμβο, με κατοχυρωμένη θέση κλειδί πάνω στον Παγκόσμιο Ενεργειακό Χάρτη. Αυτή η εξωστρεφής ενεργειακή πολιτική για τον 21^{ο} αιώνα, αποδίδει ήδη απτά αποτελέσματα και προσδίδει στη χώρα μας μια νέα εθνική αυτοπεποίθηση. Στο πλαίσιο αυτό προωθήθηκαν τρεις μείζονος σημασίας εξελίξεις στον τομέα των ενεργειακών διασυνδέσεων.

Η πρώτη αφορά στον αγωγό φυσικού αερίου South Stream. Σύμφωνα με τη σχετική συμφωνία, η Ελλάδα είναι χώρα διέλευσης. Προβλέπεται δε επιπλέον προμήθεια φυσικού αερίου για την εγχώρια κατανάλωση ανάλογα με τις ανάγκες της οικονομίας μας. Η συμφωνία που υπεγράφη είναι διακρατική και αφορά την μελέτη, κατασκευή και εκμετάλλευση του έργου. Τα εμπορικά και οικονομικά θέματα θα διευθετηθούν με εμπορική συμφωνία και αφού έχει προηγηθεί σχετική οικονομοτεχνική μελέτη και βεβαίως η ίδρυση της εταιρείας. Η δεύτερη σημαντική εξέλιξη αφορά στη λειτουργία του ελληνοτουρκικού αγωγού φυσικού αερίου και την επέκτασή του προς την Ιταλία όπου υπολογίζουμε ότι μέχρι το 2012 να φτάνει το φυσικό αέριο. Το γεγονός ότι το έργο έχει ενταχθεί στα Διευρωπαϊκά Δίκτυα, είναι ενδεικτικό του ενδιαφέροντος της Ευρωπαϊκής Ένωσης τόσο για τον ασφαλή εφοδιασμό της, όσο και για τη διαφοροποίηση των πηγών τροφοδοσίας της και των διαύλων διέλευσης.

Ανάμεσα στους δύο αγωγούς φυσικού αερίου δεν υπάρχει ανταγωνιστικότητα, υπάρχει συμπληρωματικότητα. Κυρίως υπάρχει μια αξιόπιστη βάση για τον σχεδιασμό που κάνουμε και αφορά στην επέκταση του δικτύου φυσικού αερίου στην πατρίδα μας. Ολοκληρώνω την αναφορά μου με την τρίτη σημαντική εξέλιξη που αφορά στο γεγονός πως φτάσαμε στην τελική ευθεία για την κατασκευή του αγωγού πετρελαίου Μπουργκάς Αλεξανδρούπολη. Σημειώστε ότι είναι ο πρώτος αγωγός πετρελαίου που κατασκευάζεται αποκλειστικά επί ευρωπαϊκού εδάφους μετά από 40 χρόνια. Πρόκειται για ένα ιδιαίτερα σημαντικό έργο για την αποτελεσματική λειτουργία και την ασφαλή τροφοδοσία σε πετρέλαιο των μεγάλων ενεργειακών αγορών. Ο αγωγός θα συμβάλει σημαντικά στην αποσυμφόρηση των Στενών,

περιορίζοντας στο ελάχιστο την πιθανότητα ναυτικού ατυχήματος και ενισχύοντας, συγχρόνως, την περιβαλλοντική ασφάλεια της ευρύτερης περιοχής.
Αποδεικνύεται λοιπόν πως είμαστε αποφασισμένοι να κινηθούμε υπεύθυνα, συνεργατικά και αποτελεσματικά. Σε όλα τα επίπεδα του ενεργειακού τομέα.

Ο 21ος αιώνας είναι ένας αιώνας προκλήσεων και συνεπώς μεγάλων ευθυνών. Οφείλουμε να αδράξουμε τις ευκαιρίες, να ανταποκριθούμε στις προκλήσεις, με αίσθημα ευθύνης. Με σχέδιο, όραμα, βούληση και συνεχή προσπάθεια. Πρέπει να είμαστε πρωταγωνιστές, να βρισκόμαστε στο επίκεντρο των εξελίξεων. Είμαστε πεπεισμένοι ότι με την πολιτική που ακολουθούμε, θωρακίζουμε την ελληνική οικονομία, ανοίγουμε νέους δρόμους για την ανάπτυξη, δίνουμε πρόσθετη εθνική αυτοπεποίθηση στην πατρίδα μας.

Η Ελλάδα έχει αποδείξει ότι είναι ένας αξιόπιστος εταίρος σε μεγάλης κλίμακας πρωτοβουλίες για να προωθηθούν σημαντικοί αναπτυξιακοί στόχοι. Στη νέα εποχή που ανοίγεται για την περιοχή, στόχοι μας πρέπει να είναι η πρόσθεση δυνάμεων, η εκμετάλλευση των συνεργειών, ο καλός συντονισμός και η αύξηση της αποτελεσματικότητας προκειμένου να μεγιστοποιήσουμε τα οφέλη για όλους τους πολίτες μας. Πιστεύω ακράδαντα ότι και το Συνέδριό σας θα συμβάλει με τα συμπεράσματά του στην αποστολή του μηνύματος ότι η ενδυνάμωση της περιφερειακής συνεργασίας θα αναδείξει τα σημαντικά οφέλη που μπορούν να προκύψουν από την ενεργειακή συνεργασία και κατ επέκταση την αναπτυξιακή διασύνδεση των χωρών μας. Όλοι μαζί μπορούμε να πετύχουμε τον κοινό στόχο: δυναμική, ισόρροπη ανάπτυξη και δημιουργία μιας ισχυρής περιοχής ως κόμβου στην παγκόσμια ενεργειακή οικονομία. Εύχομαι και πάλι από καρδιάς καλές εργασίες και εποικοδομητικά συμπεράσματα. Θα ήθελα τέλος να μοιραστώ μια ευχή μαζί σας: Να δώσουμε το περίσσευμα της προσπάθειάς μας όχι μόνο για ενεργειακή επάρκεια αλλά και για την προστασία του περιβάλλοντος, που δε μας ανήκει αλλά το δανειστήκαμε από τα παιδιά μας.»

Mr. Genc RULI, BSEC Acting Chairman, Minister of Economy, Trade and Energy, Albania

Honorable Excellencies,

Ladies and Gentlemen,

Dear Participants,

It is a pleasure that on behalf of the Albanian Chairmanship of the Black Sea Economic cooperation to welcome you all to the opening of this Conference which has brought together high level academic, scientific and governmental participants under the special care of the Greek authorities.

Special thanks on this occasion go to the organizers of this event, who have put in many hours of work to prepare every detail of this conference but especially for their efforts in selecting topics of discussion that hopefully will contribute towards the deepening of the cooperation and further economic integration amongst the countries of the Black Sea region.

Albania feels proud to have this opportunity, for the role and its contribution as Chairman of the BSEC and for the successful proceedings of this conference.

Globalization and regionalism is a reality shaped in various ways, perceived and approached differently by the countries. Politicians have the mission and the obligation to translate this reality into reforms, in order to sustain the economic and social development. The economic welfare and social wellbeing should be the driving force for our daily work and only through efficient cooperation we can achieve concrete and tangible success.

I believe that a simple and predictable regulatory framework, an attractive investment climate and the overall favorable business environment are

preconditions to sustainable development. This approach has been already internalized in our mentality for policy making and we are trying hard to make it work. Recognizing the need for certainty, proportionality and accountability in our policies, the Government of Albania is conducting a broad-based approach in reforming the business climate.

As a result of these reforms Albania remarkably changed its ranking in Doing Business 2009 and it is ranked the second among the top ten reformers for the period 2007-2008. Our overall rank on the ease of doing business index climbed to 86 from 135, putting Albania on par with other countries in the sub-region.

I acknowledge with great pleasure that other BSEC countries are progressing and having success in the ease of doing business. The champion is Azerbaijan reforming last year 7 areas from 10, providing thus a good example for other BSEC members. Without underestimating Georgia, whose reforms seem to be constant, and other countries who are working hard to facilitate doing business, I believe that there is so much experience and competencies within the region we should consider and exchange.

The strategic investment is crucial in our region. 20 years ago 0.5USD from every 100 USD of FDI in the global economy went to developing countries whereas today this figure is 36 USD. The numbers speak better than people and the importance strategic investments have for developing countries is clear. Thus, considering the rapid growth of developing countries and the increasing need for foreign investment, the protection of investors should be a priority. In my opinion there is so much to do in this area. Albania and Azerbaijan rank respectively at 14th and 18th place, leading the reform to protect investors, but unfortunately other countries lack behind. I would be pleased to offer to all BSEC countries the Albanian experience in policies to protect investors in order to exchange the best

practice and avoid discrimination, lack of transparency and predictability for foreign investors.

Trade exchange between Albania and the BSEC is considerable representing 30% of our total trade. Our main partners within BSEC are Greece with 48%, Turkey 23%, Serbia 9%, etc. This is not random because Albania has preferential regimes with these countries under the Interim Agreement with EU, CEFTA 2006 and other bilateral agreements.

The Albanian trade regime is very liberal and provides many opportunities for foreign strategic investments. Our trade policy is progressively deepening our openness index and through a very liberal approach we aim at strengthening our competitiveness and fostering the internal production. During the first half of 2008 the weighted tariff of Albania is 4.3% and the tariffs are decreasing continuously. Full compliance to the WTO principles and rules is guiding our efforts toward trade agenda.

I have to stress that the trade regime with BSEC countries is very complex because of many well known reasons. The BSEC countries have different statuses with regard to WTO and the Associations and Stabilization Process and therefore the trade policy has different features within the region.

Considering this reality, it is my belief that we have to concentrate our efforts in removing administrative and technical barriers to trade and encourage further trade facilitation. The administrative and non tariff barriers are usually hidden and their cost surpasses the cost of the tariffs. Therefore I would like to express my full commitment to work in this regard and I assure you for the readiness of the Government of Albania to institutionalize the instruments to facilitate non tariff barriers in trade within BSEC.

I strongly believe that this is one of the areas where the contribution of the BSEC must be focused in the long term, as a strategic tool to achieve a fuller level of cooperation amongst our countries.

Ladies and Gentlemen,

Albania comes to this inter-regional activity with the quality of the Presidency of another important process that is ongoing in Southeastern Europe, initially called the Athens' Process and later on known as the Process for the Implementation of the Energy Community Treaty.

The general objective of this process is the security of power supply for the consumers, attracting investments and economic growth of the member countries through the efficient and sustained development of the energy resources both at the local and regional levels.

Albania believes that the achievements and experience accumulated by the member countries throughout this integrating process are very valuable and could serve as a concrete model for further enhancing the cooperation amongst the countries of the Black Sea Economic Cooperation, especially in the energy sector.

Energy in general and security of energy supply to consumers in particular are becoming more and more sensitive topics and difficult challenges to face for the countries of Europe, especially for smaller countries with limited primary energy resources like Albania and the other countries of the region.

When analyzing the latest trends and developments of power generation and imports, it becomes evident that more countries are becoming dependent on imports in order to fulfill their needs for energy. On the other hand, a sharp increase in the demand for energy has forced many European countries including the countries of our region, to reconsider their sources of energy supply thus making their priority the diversification of resources in relation to the existing and traditional ones.

Under these circumstances besides further empowering the existing routes and corridors, new corridors and new energy networks are needed to connect the sources of energy in the producing countries with the consumer countries.

A large part of the energy produced in the Caspian and Central Asia areas aim to reach the European markets through the Black Sea and Southeastern European regions. Moreover, a good majority of the countries in these areas are members of the BSEC and besides their own market needs they all offer opportunities and can also facilitate the energy transiting.

Therefore, the development of new networks and energy interconnections, alongside the modernization and liberalization of the markets at the local level, I believe should become the main objective of the Economic Cooperation of the Black Sea countries. Achieving such an objective requires the will to undertake energy policies that aim not only the development and empowerment of the energy capacities at the local level but also cooperation, synergy and dialogue at the regional level.

In this framework, Albania considers the Economic Cooperation of the countries of the Black Sea region as a very important instrument in developing energy

network, in increasing the security of energy supply to consumers and the sustainable economic development of the participating countries.

Honored friends,

The participation in this conference of high government officials, academicians and scientists from all the countries of the Black Sea region but also from other countries and international institutions point out the great interests that this activity has raised.

We hope that discussions on the topics foreseen by the agenda, the presentations during the scientific and business sessions, as well as the meeting and discussions at the bilateral and multilateral level, both in the trade and energy fields will bring us all closer together but more importantly will translate into more progress and concrete developments in the countries of the Black Sea region and beyond.

Thank you

Mr. Tudor COPACI, Deputy Minister of Economy and Trade, Moldova

Ladies and Gentlemen,

On behalf of the Republic of Moldova, first of all I would like to express my deepest gratitude to the organizers of the Black Sea Energy Policy conference for the invitation, hospitality and excellent organization of the event.

At the very beginning I would like to mention that one of the highest priorities for the Republic of Moldova is building a modern democratic state, based on the European values, and external policy vector being oriented towards European integration. This, of course, involves considerable efforts in implementing reforms such as poverty reduction, private sector development, with special emphasis to SMEs, improving investment climate and national economic competitiveness.

Today, Moldova tries to become a comparatively attractive place first of all for foreign investors. Thus, in 2007, foreign investment flows amounted to 500 mil. USD, in 2008, according to our forecasts, FDI will amount to 700 mil. USD.

Moreover, in 2007 the Moldovan Government initiated broad reforms of economic liberalization consisting of three main components:

First of all, the Capital legalization, that enables legal and physical persons to declare and legalize their capital.

A second reform worth mentioning is the Fiscal amnesty, representing the abolishment of the taxpayers' debts to the state budget, accumulated by January 2007,

and the last but not the least one is "0" income tax for companies, meaning unconditioned exemption from corporate income tax. We anticipate that the implementation of this reform will provide incentives to companies to reinvest their profits into the extension and further development of their business

activities, as well as the reform is expected to fight to a certain degree the shadow economy, by making useless different schemes of tax evasion.

It is also important to mention, that the Republic of Moldova has been granted the advantage to export to the West and to the East a large number of commodities within the free trade regime. So far, Moldova signed Free Trade Agreements with CIS countries and with South-Eastern European Countries (CEFTA). Starting with March 2008 Moldova reached a new level of cooperation with the European Union – meaning the Autonomous Trade Preferences.

In this way Moldova has a favorable investment climate and good trade opportunities.

Concerning the *energy sector* from the Republic of Moldova I want to point out the following.

A modern society, with a stable economic and social development, can not be perceived without an efficient Energy branch capable to assure the country with energetic resources and energy for a long period of time.

The main objective of Energy branch is ensuring with a qualitative energy, at reasonable prices, of all consumers from the country and the accomplishment of the concept of sustainable development of the national economy. This objective might be reached on the basis of the competitiveness and liberalized energy market.

Actually, the Energy System from the Republic of Moldova can be characterized in the following way:

- Lack of local energetic resources (natural gas, oil, coal);
- Necessity in importing energetic resources;
- Reduced energy efficiency;
- Low level of utilization of renewable energy sources;
- No uniform location of capacities for generation of electric power on the territory of the Republic of Moldova;

- Deterioration of energy equipments at 60-70% at electric power plants, high-voltage lines and distribution networks;
- Insufficient volume of investments in Energy sector;

Those above-mentioned represent considerable challenges regarding the security of energy deliveries as well as economic development, namely:

- Total dependence on imported primary energy resources;
- Limited number of imported sources of fuel and electric power;
- Import of natural gas only from one supplier;
- Reduced capacity of electric lines of connection with South-East Europe and West;
- Necessity in modernization of electric transport network.

In the context of these challenges, in order to assure a durable development of Energy sector from the Republic of Moldova, it is necessary to have a clear strategic vision for the future, active energy policy and well-developed and efficient legal framework.

In 2007 the Government of the Republic of Moldova has approved the *Energy Strategy of the Republic of Moldova until 2020*, developed with the support of the European Union. The main objective of this document is to create a more efficient Energy branch, to assure energetic security of the country, modernization of energetic infrastructure and integration on the European energy market.

Strategic objectives of national energy policy for the period till 2020 are the following:

- *The objectives of energy security, namely*:
    - strengthening of energetic inter-connections with Ukraine and Romania;
    - joining of the national electro-energetic system and system of natural gas to the Treaty of Energetic Community;

- the improvement of investment climate regarding the generation of electric power;
- the diversification of types of fuel used on the territory of the Republic of Moldova;
- strengthening the role of the Republic of Moldova as an important transit country for natural gas and electric power;

Secondly, I would like to mention

- *The objectives oriented towards economic and energy efficiency*:
  - The increase of energy efficiency at the production, transportation, distribution and delivery of energy and fuels;
  - The reduction of costs and formation of such prices for the energy and fuels which will cover the costs;
  - The implementation of efficient energy technologies with the reduced impact on the environment;
  - The attraction of private investments in the rehabilitation and building of energetic objects;
- *The ecologic objectives are*:
  - The alignment to European norms and standards concerning the restriction and elimination of emissions in the environment;
  - The implementation of EU legal framework according to the requirements of Energetic Community Treaty.

International cooperation is a very important factor for ensuring with energy and energy resources the Republic of Moldova.

It should be pointed out that a fruitful cooperation of the Republic of Moldova in BSEC (*Black Sea Economic Cooperation Organization*) is very significant in the conditions when actual intensification of cooperation process BSEC-EU offers the opportunity for the implementation of some important projects as: interconnection of electric networks and their connection to West Europe systems; development of transport infrastructures; constructions of

pipelines for the transportation of oil and natural gas; modernization and interconnection of communication systems.

Within the cooperation of the Republic of Moldova with BSEC under the process of ensuring the energetic security, the following priorities should be mentioned:

- The Intensification of cooperation between the members-states of BSEC, Energy Community in South-East Europe, countries from Mediterranean Sea and the regional initiatives;
- The Intensification of cooperation through the improvement of energy efficiency and promotion of renewable energy resources' use;
- The Creation of regional integrated market for electric power and natural gas;
- The Intensification of the dialogue between the members-states of BSEC regarding the technical aspects of the transportation, generation and distribution of electric power;
- Continuous dialogue concerning the active cooperation with the General Directorate of the European Commission, with the European Economic Commission of United Nations and other international institutions in the Energy field;

For the Republic of Moldova is welcome to join, together with the Ukraine, to the regional market of energy from the South-East Europe, which is in the launching stage. This evolution will integrate our country to the predictable and transparent Energy market which will be formed in the EU. In this context, Moldova will be interested to sign bilateral agreements, mainly with Romania and Ukraine, which will promote this strategic option.

The Republic of Moldova has the necessary potential to become a regional center for Energy transit taking into account the following reasons: (a) favorable geographic position; (b) existence of energetic networks integrated with the

Ukraine; (c) opportunities for the expansion of energetic networks between West and East.

The Transformation of the Republic of Moldova in a transit way of electric power and energetic resources to the European Union will contribute to the attraction of long-term investments in the existent infrastructure of Energy networks and will support the modernization of these networks. Also, the integration will lead to the compatibility of actions taken by the Republic of Moldova to those taken by the EU in cases of external energy crises. In this sense, the support of the European Union will be necessary for our country.

Through a large amount of activities of BSEC, the region of Black Sea is approaching gradually to the European criteria of regional cooperation, as a basis and condition of security and prosperity. Taking into account significant economic and social differences between the participant countries, BSEC cannot produce rapid and fantastic results, but offers an appropriate framework for the stimulation of mutual agreement between the neighboring members-states and contributes to the development of a multilateral cooperation spirit, preparing in this way the participating countries for a viable engagement in more ambitious projects of European integration.

Investments attraction is essential for the development and modernization of Energy sector. The following specific objectives are established for investments attraction in the Energy sector from the Republic of Moldova:

- Promotion of legal reforms which will facilitate the financing of the projects and assure attractive investment climate;
- Creation and strengthening of mechanisms for attraction and efficient use of financial means for the financing of energetic projects;
- Use of the methodologies, approved at the international level, for the evaluation of investments necessary to achieve the strategic objectives and specific objectives of each segment of Energy branch from the Republic of Moldova and for the prioritization of development programs;

- Rational use of state and private investments in development projects of Energy Sector.

And finally, I would like to state that my country counts very much on the continuous support of our strategic development partners, such as BSEC countries, in promoting further reforms aimed to confront the challenges of transition period for the Republic of Moldova.

Ladies and Gentlemen thank you for your kind attention and I would like to wish you success and all the best!

Mr. Petros DOUKAS, Deputy Minister of Foreign Affairs, Greece

Distinguished Colleagues, Ladies and Gentlemen,

It is well known that Greece participates actively in the forming of the EU policy and the guidelines on energy supply and safety and supports EU efforts in establishing new energy networks and interconnections with the neighboring countries.

Over the recent years my country has played a pivotal role in the creation of an Energy Community among the countries of South-East Europe aiming to the creation of a stable regional market of electricity and natural gas in the region.

Furthermore she has actively supported other initiatives with similar goals like the initiative of a Euro-Mediterranean Energy Community.

In this context Greece applies the following policies per energy source:

My country's main priority is firstly to reduce dependence on gas supplies and to diversify suppliers. At this point, Russian gas accounts for 80% of total Greek imports, the rest being imported from Algeria in liquefied form (LNG). Therefore, the construction of the Turkey-Greece-Italy (TGI) "Inter-Connector" gas pipeline transporting Azeri gas is a step towards this aim.

Upon completion, substantial quantities of natural gas will be transported through Greece and Turkey to Italy and thereafter towards the western European markets. As it is known, the project has been included in the five priority axes of the EU's Trans-European Networks.

Greece along with Russia, Italy and other countries of the region has agreed upon one additional gas transport project namely South Stream. This new project will provide for a substantial enhancement of the energy security in the area and in the EU markets where it will be directed.

Greece is constantly seeking cooperation in the gas sector with other countries as well. Agreements for gas supply in liquefied form have been concluded or are underway with Algeria, Egypt and Qatar.

In the oil sector, Greece along with Russia and Bulgaria have concluded in 2006 on an Agreement for the construction of the "Burgas - Alexandroupolis oil pipeline" (BAP, as it is shortly called), a project which is meant to bypass the nearly congested Bosphorus Straits transporting Russian and possibly Kazakh crude oil to the international markets. The significance of the BAP project can be summarized as follows: It will forward supplementary oil quantities from the Black Sea shores to the Mediterranean Sea more efficiently than the long established transportation route through the Straits, reducing at the same time the possibilities of an ecological damage to the area or even a terrorist threat. Indeed, BAP is a short length pipeline crossing the territory of two EU countries, thus providing to the Russian

and probably Kazakh oil a less expensive and more efficient way to international markets ensuring a safer operation than the Straits seaway.

The Intergovernmental Agreement for the construction of the BAP has been recently ratified by the Parliaments of the parties. Accordingly, the construction is being envisaged to start in early 2009 and for the pipeline itself to become operational by the end of 2011.

Our government policy aims, thirdly, at increasing power generated by Renewable Energy Sources. Today the total energy produced from RES, including large hydroelectric, represents 10.2% of gross electricity production. It is generally expected that by 2010 the RES will account for 12% of the produced energy. In this respect, the Greek government has introduced a new legal framework providing for incentives in order to encourage investments on RES: Hereafter the potential investor will enjoy generous subsidies and secured disposal of electricity production into the national electricity network.

It is imperative therefore dear colleagues that without close ties and fruitful collaboration within our common neighborhood long - term energy objectives cannot be fulfilled.

Entities like BSEC can provide for a permanent and honest forum that will engulf all aspects of regional cooperation including of course energy.

Thank You for your attention

Mr. Theodoros SKYLAKAKIS, Secretary General of Ministry of Foreign Affairs, Greece

Κυρίες και κύριοι,

Η δική μου συμβολή στη συζήτηση που θα αναπτυχθεί στο διεθνές αυτό Συνέδριο δεν θα μπορούσε να είναι ανεξάρτητη από την ιδιότητά μου ως ειδικού εκπροσώπου του ΥΠΕΞ για την κλιματική αλλαγή και από την δεδομένη διασύνδεση κλιματικής αλλαγής και ζητημάτων ενέργειας.

Οι ανθρωπογενείς κλιματικές αλλαγές, οι οποίες επέρχονται ταχύτερα απ' ότι υπολογίζαμε, προκαλούν σοβαρές, παγκόσμιες περιβαλλοντικές, κοινωνικές και οικονομικές επιπτώσεις. Η κλιματική αλλαγή αποτελεί βεβαίως ένα φαινόμενο, που έχει παγκόσμιο αντίκτυπο και απαιτεί λύσεις σε παγκόσμιο επίπεδο για να αντιμετωπιστεί. Δεν θα πρέπει να μας διαφεύγει όμως και η περιφερειακή της διάσταση, αφού συγκεκριμένες γεωγραφικές περιοχές του πλανήτη, πρόκειται να πληγούν πιο άμεσα και σε πιο έντονο βαθμό, αλλά και γιατί ανάλογα με τις ιδιαιτερότητες των επί μέρους περιοχών και οικονομιών, οι επιδράσεις των πολιτικών που πρέπει να υιοθετηθούν για να αντιμετωπιστεί η κλιματική αλλαγή διαφέρουν. Για παράδειγμα χώρες που στηρίζονται λιγότερο σε υδρογονάνθρακες για την ενεργειακή τους επάρκεια (γιατί διαθέτουν πυρηνικά εργοστάσια ή μεγάλα υδροηλεκτρικά ή έχουν προωθήσει ταχύτατα την ανάπτυξη των ΑΠΕ), ευνοούνται στον επικείμενο διεθνή ανταγωνισμό.

Σήμερα -σε ολόκληρο τον κόσμο- έχει γίνει πλέον αντιληπτή τόσο η έκταση όσο και οι επιπτώσεις του εν λόγω φαινομένου. Ακόμα και στις ΗΠΑ (όπου υπήρχαν οι περισσότεροι σκεπτικιστές) και οι δύο προεδρικοί υποψήφιοι υιοθετούν εξαιρετικά φιλόδοξα προγράμματα καταπολέμησης των κλιματικών αλλαγών. Επίσης, στις δύο ταχύτερα αναπτυσσόμενες μεγάλες αναδυόμενες οικονομίες, στην Ινδία και στην Κίνα, αρχίζει να γίνεται πλέον συνείδηση ότι το κόστος της κλιματικής αλλαγής είναι οικονομικά απαγορευτικό για να αντιμετωπιστεί το φαινόμενο μόνο με μέτρα προσαρμογής (adaptation).

Οι εξελίξεις αυτές είναι ιδιαίτερα σημαντικές, αν συνυπολογίσουμε δύο ακόμα βασικές παραμέτρους της τρέχουσας διεθνούς κατάστασης:

- Τη μεγάλη άνοδο των τιμών των υδρογονανθράκων.
- Τις οικονομικές παρενέργειες της διεθνούς κρίσης.

Είναι άκρως ενδιαφέρον και συνάμα ανησυχητικό το γεγονός ότι ενώ εισερχόμεθα σε μία περίοδο διεθνούς ύφεσης και οι τιμές του πετρελαίου έχουν μειωθεί από το ύψος που είχαν φτάσει και παρουσιάζουν έντονες διακυμάνσεις (δεν θα μπορούσαν υπό τις σημερινές συνθήκες να συνεχίζουν στα 140 δολάρια το βαρέλι), παραμένουν ωστόσο σε εξαιρετικά υψηλά επίπεδα. Οι καταναλωτές, οι κυβερνήσεις αλλά και οι επιχειρήσεις σε ολόκληρο τον πλανήτη δείχνουν αιφνιδιασμένοι από τις εξελίξεις. Σχεδόν κανένας δεν περίμενε τις

σημερινές τιμές πριν τρία ή τέσσερα χρόνια. Αντίθετα όλες οι προβλέψεις του Διεθνούς Οργανισμού Ενέργειας μίλαγαν για αφθονία προσφοράς και μικρή και ελεγχόμενη άνοδο των τιμών μέχρι τουλάχιστον το 2030.

Σήμερα, μέσα σε ένα γενικό περιβάλλον αβεβαιότητας, κανείς δεν τολμά να διακινδυνεύσει κάποια πρόβλεψη για την εξέλιξη των τιμών σε μεσοπρόθεσμο και μακροχρόνιο διάστημα. Η ζήτηση για υδρογονάνθρακες θα είναι ασφαλώς μικρότερη στην επόμενη φάση, όμως η συστολή του παγκόσμιου χρηματοοικονομικού συστήματος και η ένταση της αβεβαιότητας θα περιορίσει ταυτόχρονα τις επενδύσεις στον τομέα της ανάπτυξης νέων κοιτασμάτων. Και κανείς, σας διαβεβαιώ κανείς, δεν μπορεί να προβλέψει το μέλλον τους.

Με δεδομένες πάντως τις σημερινές τιμές και εφόσον συνεχίσουν να ισχύουν είναι σαφές ότι έχει πλέον ανατραπεί ο ενεργειακός και ερευνητικός σχεδιασμός σε ολόκληρο τον πλανήτη, σε ό,τι αφορά στις ανανεώσιμες πηγές ενέργειας και την ανάπτυξη περισσότερο αποδοτικών –και κατά συνέπεια και καθαρότερων- τεχνικών καύσης των υδρογονανθράκων.

Αντίστοιχα έχουν αλλάξει τελείως τα δεδομένα και σε ό,τι αφορά στους οικονομικούς υπολογισμούς σε παγκόσμιο επίπεδο σχετικά με την εξοικονόμηση ενέργειας. Τα περισσότερα κτίρια π.χ. στον κόσμο είναι -με τις σημερινές τιμές των καυσίμων- μη αποδοτικά από πλευράς εφαρμογής τεχνολογιών εξοικονόμησης ενέργειας.

Πως θα επηρεάσει η μείωση του παγκόσμιου ρυθμού ανάπτυξης που αναμένεται στα επόμενα χρόνια την εξέλιξη του φαινομένου της κλιματικής αλλαγής; Η απάντηση και στο ερώτημα αυτό δεν είναι εύκολη.

Η βραδύτερη ανάπτυξη θα μειώσει ασφαλώς το ρυθμό αύξησης των εκπομπών. Όμως οι δυσκολίες της χρηματοδότησης μπορεί να ωθήσουν προς περισσότερο «βρώμικες» λύσεις ή να καθυστερήσουν αντίστοιχα τόσο την έρευνα σε νέες πράσινες τεχνολογίες όσο και τις επενδύσεις σε αυτές.

Επίσης τα αμεσότερα οικονομικά προβλήματα μπορεί να μειώσουν την πολιτική έμφαση στο περισσότερο μακροπρόθεσμο πρόβλημα της κλιματικής αλλαγής με τελικό αποτέλεσμα να χαθεί πολύτιμος χρόνος και όταν τελικά θα προχωρήσουν αποτελεσματικότερες πολιτικές να είναι ήδη αργά. Γιατί δεν πρέπει να ξεχνάμε ότι το φαινόμενο του θερμοκηπίου είναι αθροιστικό. Στην ατμόσφαιρα υπάρχουν ακόμα αέρια του θερμοκηπίου που εκλύθησαν στη διάρκεια της μεγάλης ύφεσης της δεκαετίας του 30. Οι προσωρινές οικονομικές διακυμάνσεις επηρεάζουν ελάχιστα τις μακροχρόνιες τάσεις σε ότι αφορά την κλιματική αλλαγή. Και όταν θα έχουμε και πάλι την οικονομική πολυτέλεια να επικεντρώσουμε την προσοχή μας στην κλιματική αλλαγή να έχει περάσει πλέον το σημείο καμπής (tipping point) σε ό,τι αφορά την επιδείνωση του κλίματος και η ανθρωπότητα θα βρίσκεται αντιμέτωπη με βαρύτατες περιβαλλοντικές, κοινωνικές και οικονομικές επιπτώσεις.

Είναι όμως επίσης πιθανό η ανθρωπότητα να αντιμετωπίσει -μετά τα τρέχοντα παθήματα σε οικονομικό επίπεδο- με περισσότερη σωφροσύνη το φαινόμενο της κλιματικής αλλαγής και να επιτευχθεί τελικά μια παγκόσμια συμφωνία το 2009 -στη διάσκεψη της Κοπεγχάγης- για τον δραστικό περιορισμό των αερίων του θερμοκηπίου.

Αν καταλήξουμε το 2009, ή έστω με κάποια πρόσθετη καθυστέρηση, σε παγκόσμια συμφωνία, αυτή θα έχει ως συνέπεια την έρευνα, ανάπτυξη και ταχύτατη διάδοση σε ολόκληρο τον πλανήτη νέων τεχνολογιών, που θα επιτρέψουν την κλιματολογικά ουδέτερη οικονομική ανάπτυξη. Αυτή είναι άλλωστε και η μόνη ρεαλιστική και εφικτή λύση, σε έναν κόσμο στον οποίο εξακολουθούν να υπάρχουν δισεκατομμύρια άνθρωποι κάτω από το επίπεδο της απόλυτης φτώχειας και στον οποίο θα προστεθούν άλλα 2,5 δισεκατομμύρια μέχρι τα μέσα του αιώνα.

Η λύση του προβλήματος της κλιματικής αλλαγής δεν μπορεί συνεπώς να προέλθει από τον περιορισμό της ανθρώπινης οικονομικής δραστηριότητας. Γιατί απλούστατα αυτό δεν πρόκειται ποτέ να γίνει αποδεκτό από τα 3/4 του πλανήτη που αποζητούν ένα «δυτικό» επίπεδο ζωής.

Σ’ αυτό το σημείο, επιτρέψτε μου να αναφέρω συνοπτικά τα σημαντικότερα μέτωπα στα οποία θα δοθεί η μάχη του περιορισμού των αερίων του θερμοκηπίου στο άμεσο μέλλον. Μέτωπα στα οποία αναμένεται να επενδυθούν τρισεκατομμύρια δολάρια στις επόμενες δεκαετίες.

Θα τα αναφέρω χωρίς ιεράρχηση, μια που η διεθνής τάση -λόγω της εγγενούς αβεβαιότητας που υπάρχει σε σχέση με την έρευνα και ανάπτυξη νέων τεχνολογιών σε πολλούς και τελείως διαφορετικούς μεταξύ τους τομείς- είναι να κινηθούμε παράλληλα στα πολλά αυτά διαφορετικά μέτωπα και να αφήσουμε τις αγορές να επιλέξουν στην πορεία τις οικονομικότερες λύσεις για την μείωση των εκπομπών των αερίων του θερμοκηπίου.

Έχουμε λοιπόν:

- Την εξοικονόμηση ενέργειας (τομέας που είναι οικονομικά αποδοτικός ακόμα και χωρίς να ληφθούν υπ’ όψη οι επιπτώσεις του φαινομένου του θερμοκηπίου).
- Τις ανανεώσιμες πηγές ενέργειας (αιολική, ηλιακή, βιομάζα, γεωθερμία, κύματα, υδροηλεκτρικά κ.λπ.).
- Τεχνολογίες για καθαρότερη καύση των υδρογοναναθράκων.
- Διακράτηση και αποθήκευση του διοξειδίου του άνθρακα (CCS).
- Την πυρηνική ενέργεια.
- Τις τεχνολογίες για τη δημιουργία καθαρών καυσίμων (βιοκαύσιμα επόμενης γενιάς).
- Την δάσωση και αναδάσωση και τις νέες τεχνολογίες για τη μείωση των αερίων του θερμοκηπίου, που συνδέονται με την γεωργία.

Στους τομείς αυτούς, εφόσον και όταν επιτευχθεί μια νέα μετά το Κιότο -και πραγματικά παγκόσμια- συμφωνία, αυτή αναμένεται να ενθαρρύνει την προώθηση επενδύσεων, καθώς και την έρευνα και ανάπτυξη νέων τεχνολογιών και να χρησιμοποιήσει προς τούτο διάφορα εργαλεία, όπως: η φορολόγηση των εκπομπών διοξειδίου του άνθρακα, τα συστήματα περιορισμού και εμπορίας ρύπων (cap & trade), και οι αυστηρότεροι επί μέρους περιβαλλοντικοί κανονισμοί. Ποιό τελικά μίγμα θα υιοθετηθεί είναι πολύ νωρίς να συζητήσουμε μια που χωρίς να διευκρινιστεί στις λεπτομέρειές της η βούληση της νέας αμερικανικής κυβέρνησης, είναι αδύνατο να προχωρήσει ουσιαστικά η διαπραγμάτευση. Το βέβαιο είναι ότι με την ώθηση που δίδουν οι νέες δεσμεύσεις της Ευρωπαϊκής Ένωσης για την μείωση των εκπομπών και τις ανανεώσιμες πηγές μέχρι το 2020, που μετατρέπονται πλέον σε ευρωπαϊκή νομοθεσία, η μετά το Κιότο εποχή και οι ευκαιρίες που την συνοδεύουν έχει ήδη αρχίσει. Παρά τη διεθνή οικονομική κρίση.

Η Ελλάδα, από την πλευρά της, τόσο σε παγκόσμιο όσο και σε περιφερειακό επίπεδο, συμβάλλει στη σχετική διαβούλευση και αναλαμβάνει συγκεκριμένες πρωτοβουλίες για την επίτευξη λύσεων. Είναι χαρακτηριστικό ότι διαδραματίσαμε κεντρικό ρόλο στη σύσταση και λειτουργία της Ενεργειακής Κοινότητας ΝΑ Ευρώπης.

Επίσης το ελληνικό ΥΠΕΞ συμβάλλει, στο μέτρο των αρμοδιοτήτων του, στην προσπάθεια για εξοικονόμηση ενέργειας και για προώθηση της φιλικής προς το περιβάλλον επιχειρηματικότητας.

Ενδεικτικά αναφέρω τη συνεργασία με την USAID για προγράμματα αναγνώρισης επενδύσεων σε ανανεώσιμες πηγές ενέργειας και εξοικονόμησης ενέργειας σε κτηριακές εγκαταστάσεις σε 9 επιλεγμένες χώρες της Ενεργειακής Κοινότητος Ν.Α. Ευρώπης.

Το κοινό πρόγραμμα Syn-energy περιλαμβάνει προτάσεις βελτίωσης του επενδυτικού περιβάλλοντος, μεταφορά τεχνογνωσίας, πραγματοποίηση έργων εξοικονόμησης ενέργειας σε κτήρια κοινωνικού χαρακτήρα, καθώς και τον εντοπισμό έργων με επενδυτικό ενδιαφέρον, στο τομέα των ΑΠΕ. Τέλος περιλαμβάνει και δράσεις κατάρτισης, δημοσιότητας και ευαισθητοποίησης.

Εκτιμούμε ότι με την ολοκλήρωση του έργου και σχετικά με τις ΑΠΕ, θα έχουν εντοπιστεί επενδυτικές ευκαιρίες για αιολικά πάρκα και έργα μικρών υδροηλεκτρικών και βιομάζας ισχύος περίπου 5.000 MW, που αντιστοιχούν σε επενδύσεις της τάξης των 6 δις €, ενώ σχετικά με την ΕΞΕ σε κτίρια, θα έχουν εντοπιστεί επιχειρηματικές ευκαιρίες για μονωτικά υλικά, ενεργειακά αποδοτικά κουφώματα, ηλιακά θερμικά συστήματα κλπ, που θα ενισχυθούν με πιλοτικές εγκαταστάσεις 2.000 τ.μ ηλιακών συλλεκτών και 4.000 τμ εξωτερικής θερμομόνωσης.

Το συνολικό κόστος του προγράμματος ανέρχεται σε 8.000.000 € εκ των οποίων τα 4.000.000 προέρχονται από το HELLENIC AID και τα υπόλοιπα από το USAID.

Κλείνοντας την παρέμβασή μου, θα ήθελα να υπενθυμίσω ότι η κλιματική αλλαγή αποτελεί πρόβλημα που απαιτεί συλλογική δράση και δεν είναι δυνατόν να αντιμετωπισθεί με τις προσπάθειες μίας μόνο χώρας ή μίας ομάδας κρατών. Αυτό συμβαίνει διότι οι εκπομπές αερίων του θερμοκηπίου, από όποια πηγή και αν προέρχονται, επηρεάζουν το σύνολο του πλανήτη. Κατά συνέπεια, κάθε άτομο, οργανισμός ή χώρα που δε συμμετέχει στην κοινή, παγκόσμια προσπάθεια για την αντιμετώπιση της απειλής, την εκμεταλλεύεται και απολαμβάνει τα οφέλη της, ενώ παράλληλα, την υπονομεύει.

Και η προσπάθεια απάντησης στις κλιματικές αλλαγές δεν μπορεί παρά να ιδωθεί υπό το πρίσμα των ενεργειακών εξελίξεων. Ουσιαστικά, η αντιμετώπιση της κλιματικής αλλαγής και η αναπροσαρμογή της ενεργειακής μας πολιτικής συνιστούν τις δύο όψεις του ιδίου νομίσματος. Σας ευχαριστώ.

HE, Ambassador Dr. Wolfgang SCHULTHEISS, Ambassador of German Federation to Greece

1) Please permit me first to thank Prof. Mavrakis and his colleagues for organizing this conference and for giving me the opportunity to speak here. You might ask why I speak today. Germany is not a littoral state of the Black Sea; we do not represent the EU or the Commission. I think that I was invited here, because Germany always has fostered the cooperation between the EU and the Black Sea, and important decisions in this respect have been taken during our EU presidency in the first half of 2007. The Black Sea area is a neighboring region of great strategic importance to the EU. Developments there have direct repercussions on the Union. The area has big potential for economic cooperation and growth, but it also is an area full of challenges we commonly face.

After the accession of the two Black Sea littoral states Bulgaria and Romania, the EU has become a direct neighbor to this region. As a consequence, its interest in furthering stability and prosperity in the Black Sea area has become even greater. Therefore, the EU is developing a strengthened, coherent and complementary EU engagement towards the Black Sea region. Additionally, the Black Sea area establishes a natural link to Central Asia, to which we develop a separate EU foreign policy strategy, which was one of the main points of our EU presidency.

2) The cooperation of the EU with the Black Sea fits perfectly into the European Neighborhood Policy. This policy is a core priority of the EU foreign policy. The idea behind is that there is a clear geopolitical imperative to foster stability, the rule of law and human rights, better governance and economic modernization in our neighborhood. The reason is obvious: political instability and weak governance in our neighborhood would impact on the EU. At the same time, risks to Europe's energy security, environmental threats and rising flows of illegal immigration, to name but a few, also have a growing influence on our security and prosperity.

Let me also point out to you, that the European Neighborhood Policy remains completely distinct from the process and policy of EU enlargement. European Neighborhood Policy is crucial in its own right to bolster domestic transformation processes in the interest of the citizens of our partners, independently of an EU accession perspective.

3) Therefore, we consider the cooperation EU – Black Sea as very important. EU Black Sea cooperation should be fully inclusive and involve all countries of the region, the littoral states Bulgaria, Romania, Georgia, Ukraine, Russia and Turkey, as well as the Eastern ENP partners Armenia, Azerbaijan and the Republic of Moldova. The EU is not aiming at creating a new institutional framework but rather advocates the use of existing programmes and initiatives of the EU and the countries of the region. The most suited partner is the Organization of the Black

Sea Economic Cooperation, as the most inclusive and institutionalized forum in the area. Furthermore, flexible geometry will be an essential principle, for progress in regional cooperation does not always necessitate the participation of all Black Sea states.

We are grateful that the Commission took up actively the issue of the Black Sea. On 11 April, the European Commission published its communication on the Black Sea Synergy Initiative. On 14 May, the EU adopted Council conclusions.

Key sectors of this regional approach are energy, the environment, transport, telecommunications, science and technology, freedom, justice and security, as well as democracy, human rights promotion, respect for international law and civil society cooperation. Improved regional cooperation will not only generate economic benefits, but also may help to build political confidence in the area. Another topic, which gains importance, is migration and combating organized crime. When the Schengen area will be extended to Romania and Bulgaria after 2010, the EU will have an outer border to the other states of the Black Sea region. Increased cooperation will then be even more important. The establishment of a platform of regional cooperation in matters of migration is being discussed.

4) Energy, environment and climate policy, the topics of our conference, are particularly promising as fields of intensified cooperation. For consumers as well as producers, the energy supply diversification is a high priority. The Black Sea region is an important component of the EU external energy strategy. The EU works together with its regional partners to enhance energy stability through the upgrading of existing and construction of new energy infrastructure. The EU also helps the countries to develop a clearer focus on alternative energy resources and on energy efficiency. And finally the EU shares with its partners in the region its specific interest in developing a sustainable ecological oil dimension.

5) We see today the first promising results of these efforts. The construction of the Burgas – Alexandroupolis pipeline being just one example. Many investors from the private sector in Germany are already very active in the region, especially in countries such as Turkey, Romania, Bulgaria and Greece. The Federal Government has developed programmes to initiate investments and technology transfer especially in the renewable energy sector and in technologies for energy efficiency. This promotion of “green energy” should not be seen separately from the developments in the oil and gas sector. We all know, that these fossil resources are limited. Energy policy today therefore means the efficient ecologically friendly use of existing resources for the benefit of the people in our regions but also to prepare for the future and develop the energy supply for the next generations.

6) What is the conclusion for the EU – Black Sea Cooperation in the energy sector? I think it is quite important that, in the Black Sea Cooperation, you have a strong organization such as the Black Sea Economic Cooperation, to coordinate the activities with the EU. The legal framework is there, the first promising projects and initiatives are under way. This needs to be intensified to overcome the difficult economic situation in some of the countries in the area for the benefit of its people and to secure stability and prosperity for the 21st century in the region.

7) And evidently, there is a political security aspect. The crisis in Georgia has shown to us how precarious stability is in this region. Links to Europe which foster economy, stabilize political structures and help to safeguard human and democratic rights, will improve the preconditions for stability, peace and prosperity considerably.

Thank you.

HE, Ambassador Mr. Irakli TAVARTKILADZE, Ambassador of Georgia in Greece

Distinguish participants,
Ladies and Gentlemen

At the outset allow me to welcome all of you and express the hope that today's gathering will be successful and result-oriented. I would also like to convey special thanks to the Hellenic Republic for outstandingly organizing this important event.

Improving of Investment Climate in the field of energy sector has a vital role for ensuring sustainable economic development, stability and security of our nations. In this regard, Georgia carefully monitors recent developments on world energy markets.

After the Rose Revolution in 2003 the Georgian Government has carried out significant Political and Liberal Economic Reforms that gives real reasons to invest in Georgia: Attractive Macroeconomic Environment, Competitive Trade Regulations, Liberal Tax Code, Privatization of State Property, Modernized Business, Licensing System, Reformed Technical Regulation System, and Competitive Banking Sector.

Georgia is situated at a strategic location near the Caspian Sea, Central Asia and the Mediterranean and thus is playing an increasingly important role in the transport of in demand Caspian and Central Asian energy sources. In addition, Georgia has potential for its own oil production, as the country's first oil field, Samgori, was discovered in 1974, and numerous foreign companies are currently undertaking exploration and researching production potential.
Now, I would like to highlight some important aspects about the unique investment opportunities opened in Georgia.

The energy sector is liberally regulated. The Government deregulated the electricity market in order to facilitate the inflow of foreign investments. Hydro-power stations and the United Energy Distribution System were privatized. The Government of Georgia is rehabilitating existing power generation facilities, including hydro and thermal stations and transmission lines.

Reforms and initiatives, carried out by the Georgian Government since 2003 significantly improved the investment climate in the country. As a result of private and public investments and deregulation measures, energy has become one of the most dynamically developing sectors of economy.

Georgia's Energy sector can be divided into: 1. Oil and gas pipelines; 2. Oil and gas exploration; 3. Oil derivatives import and distribution; 4. Electricity generation, import and distribution

My country plays an important role as a strategic bridge for transit of hydrocarbon from Caspian region and Central Asia to Europe. During the last ten years, 5 billion USD was invested by British Petroleum (BP) and its partners to develop three major oil and gas pipelines that cross Georgia:

- the Baku-Tbilisi-Supsa oil pipeline with capacity of 6 million barrels a year, started its operation in 1999;

- the Baku-Tbilisi-Ceyhan (BTC) oil pipeline, with a capacity of one million barrels a day, started its operation in June of 2006;
- South Caucasus gas pipeline connecting Shaz-Deniz fields of Azerbaijan with Erzurum in Turkey via Georgia started operation in January 2007. The initial capacity of this gas pipeline will be 8.4 bcm per year with the throughput capacity to be increased up to 30 bcm per annum and the potential of being connected with European gas markets.

Georgia's electricity infrastructure consists of large, medium and small scale hydro-power, thermal power generation stations and transmission lines.

Georgia's electricity grid is connected with that of Russia, Armenia, Azerbaijan and Turkey and has a huge potential for electricity export to neighboring countries. (remark: *Georgia is also actively involved in the regional project to exchange electricity between the Republic Azerbaijan, Georgia and Republic of Turkey. The respective Memorandums of understanding already had been signed. Georgia developed projects to construct new high line voltage connections between the Georgia and the Republic of Azerbaijan and Georgia and the Republic of Turkey. The realization of this project will have great regional Impact).*

It is important that, export of electricity is totally deregulated. No license is required to export the electricity and there are no tariff sets. Investors need just to find a buyer and conclude direct purchase power agreements (PPA).

Georgian Government anticipates the construction of additional high voltage transmission lines as more generation capacity is built in the country, with a view to turning renewable energy into a significant expert industry and a significant contributor to the improvement of the current account balance.

Georgia is the shortest transit route between the West and the Central Asia for transportation of oil and gas. The country's gas pipeline system is connected via a trunk pipeline with neighboring countries *(Russia, Azerbaijan and Turkey).*

As I have mentioned, Georgia enjoys huge and currently to a large extend underutilized hydro energy potential, which creates unique investment opportunities in hydro sector.

The Government of Georgia created the most investor-friendly surrounding by offering Greenfield Projects based on Build-Own-Operate (BOO) principle, without involvement in any of the new projects in equity shares or with the condition to take over the Plant after. By signing the Memorandum of Understanding (MoU) with the Government of Georgia, investors gain its full support at all the stages of the investments.

The Government of Georgia invites also interested prospective investors to initiate discussions regarding the terms and conditions of investing in several small and large Greenfield HPP sites (with prospective from 100 MW to 700 MW) (for example, Oni cascade on Rioni river (272MW), Namakhvani cascade on Rioni river (450MW), Khudoni HPP on Enguri river 638 MW).

I would also like to stress herewith that all constructions are totally deregulated and there is no tariff set for the newly built HPP. Investors are free to choose the market and the price for selling the power generated at the plant. HPPs up to 13 MW have exceptional right to sell electricity to any retail customer.

Ladies and Gentlemen,

No doubt, that nowadays the energy dimension acquires particular importance while conducting international relations. At the same time energy security and reliable energy alternatives became an integral part of national security of any country.

Nowadays energy producer states are often tempted to employ their energy clout to advance geopolitical goals. Monopolization of access to energy sources and supply routes leads to political manipulation and blackmail, as has been evidenced on a number of occasions. Worse still, the trend seems to have been intensified over the last two years that have been accomplished by the latest military aggression conducted by Russia towards Georgia.

Russia's aggression on the Georgian territory is a direct threat to the Energy Security of entire Europe. It is notable, that one of the main bomb targets of Kremlin were the Oil and Gas pipelines, (Russia's air forces bombed the Baky-Tbilisi-Ceyhan pipeline), which provides delivering of Caspian Energy sources to Turkey and afterwards to Europe.

In this regard, today's reality shows us that we have to elaborate concrete investment projects to decrease the dependence on Russian energy resources and respectively increase energy security of the Black Sea region and the entire Europe. In this regard the realization of "Nabucco" project became of vital importance. We are sure that the realization of Odessa-Brody-Plotck-Gdansk, White Stream and other projects are as well very important for Energy security of Europe.

It is notable, that according to the Declaration (Article 9), adopted by the Heads of States of the European Union, during the Extraordinary European Council, which was held in Brussels, on 1 September 2008, Europe has once again emphasized that: "recent events illustrate the need for Europe to intensify its efforts with regard to the security of energy supplies".

We need to coordinate closely our activities in order to facilitate fair transit rules, develop new investment projects, and promote greater energy efficiency. Substantial private and foreign investments are required to rehabilitate existing energy infrastructure and realize new projects. Together we can make energy markets more competitive and secure.

New transportation possibilities for energy resources create new prospects for countries of our region, increasingly bringing stability in these countries.

Energy security, according to our view is supposed to be regarded trough the system of six interconnected items and points:

- First – to safeguard the balance of interests of all energy producers. It means that the interests of these players of "energy game" have to be considered properly and equally and they have to adhere to the "fair rules of game".
- Second – consumers of energy resources have to get rid of political pressure from producer countries.
- Third – it is necessary to reach an acceptable level of balance of interests between the consumers and producers. In other words, demands of consumers have to be met by the suppliers and vice versa.

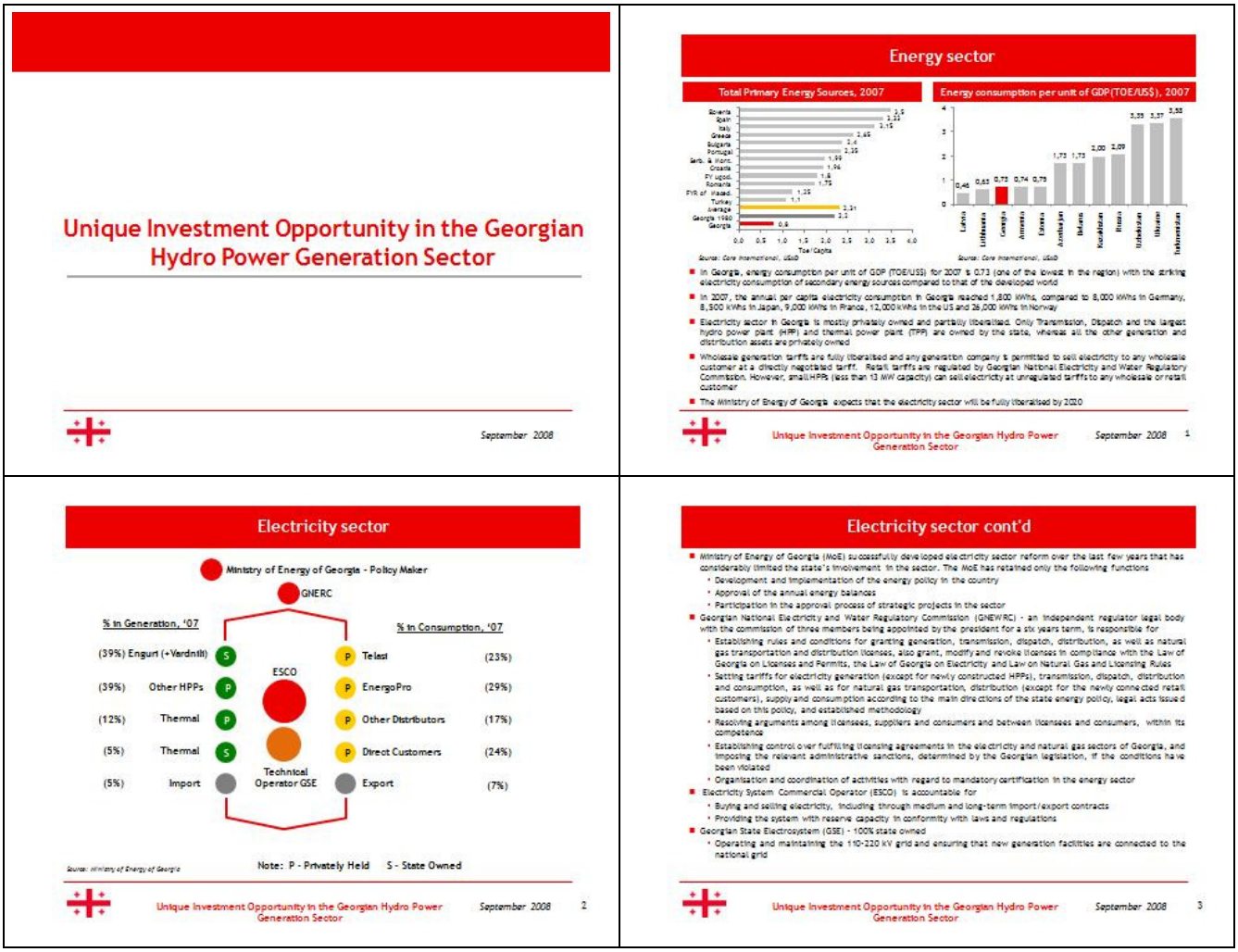
- Fourth – diversification of supply sources and the routs of transportation is one of the key elements in the energy game.
- Fifth - the key feature of genuine energy security in a region is a balance between the provider, consumer and transit countries on the bases of equality and competitiveness.
- Sixth – to avoid monopolistic position of companies engaged in energy deal that means that it is very dangerous when some energy company in certain country practically acquires the status "country within country".

I would like to express my strong belief that investing in global energy projects will guarantee the stable economic and political environment in the entire Euro-Atlantic Area.

The presentation elaborated by the Ministry of Energy of Georgia has been distributed today and all the necessary detailed information on the Investment Climate in Energy sector of Georgia is available there.

Finally expressing once again a special thanks to the organizers of this event, I would like to wish the successful outcomes of today's conference.

Thank you.



Electricity sector development

Beginning of 2004

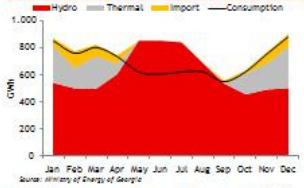
- All TPPs and 3 out of 12 main HPPs were idle
- Enguri (largest HPP) needed urgent rehabilitation
- The transmission grid was robbed and absorbed
- Collection rate: 15% - 25%
- Electricity companies in financial crises
- Constant black-outs
- No relations with neighboring systems (except Russia)

Beginning of 2007

- Rehabilitated hydro and thermal power plants
  - Circa US$200 mln budget spent in 2004-2006
  - Private funding of the companies in 2007
- Rehabilitated grid
- Collection rate: 95%
- Decreased dependence on TPPs
- Georgia became a net exporter of electricity first time in history
  - Exporting to Russia, Turkey and Azerbaijan
- Energo-Pro acquired two distribution companies and six HPPs via privatisation
  - Total capacity of 360 MWh
  - Total consideration of US$427 mln

Electricity balance

General monthly electricity balance breakdown



Source: Ministry of Energy of Georgia

- Installed hydro power generation capacity is approximately 18% of the total prospective capacity available in the country
- Objective according to energy policy paper
  - Maximum utilization of hydro resources
  - Major exporter of electricity
- Consumption is high in Winter and low in Summer
- HPPs generate more electricity in Spring/Summer and less in Winter
- Georgia use hydro power to meet electricity demand in the summer months and is then a net exporter of electricity exporting approximately 400 GWH in July-August 2007
- Thermal is needed in Winter to balance consumption

Comments

- Aggregate peak capacity of approximately 1,600 MW
- In general, HPPs account for on average 78% of the country's electricity supply, whilst TPPs generate 17% and imports contribute another 5%
- The electricity generation at the HPPs has increased, partially due to better operating conditions and partially owing to routine operating upgrades across the sector
- The TPPs and imports for the Georgia's energy sector is set for a steady decline
  - Gas prices hiking up - losing competitiveness compared to more cost efficient HPPs
- Two main electricity consumption groups in Georgia
  - Three regional distribution companies, which cumulatively account for roughly 69% of the country's total electricity consumption
  - About 30 large industrial enterprises, accounting for 23% of the country's total electricity demand and are allowed to directly purchase electricity from suppliers
- Export share in energy consumption has grown significantly from 1% in 2004 to 7% in 2007

Domestic consumption

Electricity distribution companies

Company	Owner	2007 TWh	2007 %	2006 TWh	2006 %	2005 TWh	2005 %
Telasi	RAO UES (Russia)	1.9	33%	2.0	34%	2.1	35%
Energo Pro	Energo Pro (Czech Republic)	2.5	42%	2.5	43%	2.6	43%
Kakheti	Under Privatisation	0.2	3%	0.2	4%	0.2	3%
Abkhazia	Energy Company State owned	1.3	22%	1.2	20%	1.2	19%
Total		5.8	100.0%	5.9	100.0%	5.9	100.0%

Source: Ministry of Energy of Georgia

Industrial enterprises

Company	2007 GWh	2007 %	2006 GWh	2006 %	2005 GWh	2005 %
Ltd Georgian Manganese (incl. Chiaturmanganum)	802	40%	741	37%	721	38%
JSC Georgian Railway	320	16%	324	16%	292	15%
Ltd Tbilisi Water	294	15%	319	16%	302	16%
JSC Energy Invest (incl. Nitrogen Plant)	259	13%	261	13%	244	13%
JSC Rustavtsementi (incl. Cesplocement)	165	8%	117	6%	110	6%
Ltd Tbilisi Metro	63	3%	64	3%	64	3%
Ltd Madneuli	60	3%	58	3%	52	3%
Other Direct Consumers	109	5%	105	5%	120	6%
Total, Direct Customers	2,012	100%	1,989	100%	1,905	100%

Source: Ministry of Energy of Georgia

Tariffs

- All new newly built HPPs are fully deregulated from the generation tariffs whilst tariffs for the existing HPPs are capped
- Transmission tariffs are set by the regulator GNEWRC on an annual basis
  - No charge for the generation capacity - transmission tariff reflects only the volume of electricity transferred
  - The total transmission charge is based on the pre-paying principle, whereby the cost of transmitting electricity is the same regardless the distance within the country
  - The electricity transmission tariffs are set as follows
    - 1.80 GEL/MWh - Kavkasioni 500 kV line operator's (Sakrusenergo) tariff
    - 5.35 GEL/MWh - tariff for transmitting electricity on 220-35 kV lines
    - 11.09 GEL/MWh - tariff for transmitting electricity on 10-6 kV lines
    - 1.50 GEL/MWh - dispatch tariff collected by JSC Georgian State Electrosystem
  - The aggregate transmission tariffs are 8.65 GEL/MWh if consumers use 220-35 kV lines, or 14.39 GEL/MWh, if 10-6 kV lines
  - The costs related to transmission losses are reflected in the final consumer tariffs

Weighted Average Final Consumer Tariffs (less of VAT), GEL/MWh

	2003	2004	2005	2006	2007	2008F	2009F
Tbilisi	114.2	114.2	114.2	135.6	135.6	135.6	135.6
The rest of Georgia	70.8	70.8	70.8	116.9	116.9	116.9	116.9

Source: Ministry of Energy of Georgia

- Consumer tariffs in Tbilisi exceed those in the regions quite considerably
- The gap is set to gradually narrow, as the countryside catches up with the capital in its economic development
- GNEWRC has established different tariff levels for customers that use less than 100 kWh, those that use more than 100 kWh but less than 300 kWh, and those that use over 300 kWh per month

Electricity transmission

- The electricity transmission network in Georgia comprises 500, 300, 220, 110, 35, 10 and 6 kV lines
- The backbone of the network is a 500 kV line - transmits electricity from the generation centres in north-western Georgia (mainly Enguri HPP) to the east
- The Georgian government is on the advance stage of the construction of the a 400-500kV transmission line, which would connect Georgia to the Turkish power grid as well as strengthen the electricity network within the country
- The current export capacity to Turkey is only about 700 GWh annually, and it is already fully utilised

Source: Ministry of Energy of Georgia

Transmission grid and export connections in Georgia, 2007

Voltage	Location	Export capacity (MW and annual GWh)
500 kV	Russian border North Western Georgia via Enguri HPP to Tbilisnasi TPP by Azeri border south of Tbilisi	800 MW (7,008 GWh)
300 kV	Georgia and Azerbaijan	250 MW (2,190 GWh)
220 kV	Russia-Abkhazia-Tbilisi with connectors to main HPPs	160 MW (1,401 GWh)
	Georgia-Turkey	150 MW (700 GWh)
	Georgia-Armenia	180 MW (1,577 GWh)
110 kV	Russia-Georgia (South Ossetia)	80 MW (700 GWh)
	Russia-Georgia (Kazbegi district)	80 MW (700 GWh)
	Armenia-Georgia	30 MW (263 GWh)
	Armenia-Georgia	80 MW (700 GWh)

Source: Ministry of Energy of Georgia

Map of the electricity transmission network in Georgia

Source: Ministry of Energy of Georgia

Electricity balances (base case)

Electricity Supply (TWh)

	2004	2005	2006	2007	2008F	2009F	2010F	2011F	2012F	2013F	2014F	2015F	CAGR (07-15F)
HPPs	5.9	5.9	5.3	6.7	7.3	7.4	7.4	7.4	7.4	7.4	7.5	7.5	1.4%
Thermal	0.8	1.0	2.1	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.2	-2.8%
Total Production	6.7	6.9	7.4	8.2	8.8	8.9	8.9	8.9	8.9	8.8	8.8	8.7	0.7%
Imports	1.3	1.3	0.8	0.4	0.2	0.2	0.2	0.3	0.5	0.9	1.2	1.4	17.1%
Total Supply	8.0	8.2	8.2	8.6	9.0	9.1	9.1	9.2	9.4	9.7	10.0	10.1	2.0%
Growth y-o-y (%)	-1.20%	2.50%	0.00%	4.88%	4.65%	1.11%	0.00%	1.10%	2.17%	3.19%	3.09%	1.00%	

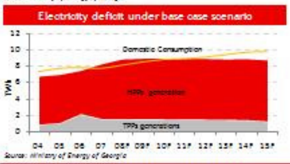
Source: Ministry of Energy of Georgia

Electricity Demand (TWh)

	2004	2005	2006	2007	2008F	2009F	2010F	2011F	2012F	2013F	2014F	2015F	CAGR (07-15F)
Distribution	5.7	5.9	5.9	5.8	6.0	6.3	6.5	6.6	6.7	6.9	7.0	7.1	2.6%
Direct Customers	1.7	1.9	2.0	2.0	2.2	2.3	2.4	2.4	2.5	2.6	2.8	2.8	4.5%
Total Domestic Consumption	7.4	7.8	7.9	7.8	8.2	8.6	8.9	9.0	9.2	9.5	9.8	9.9	3.0%
Exports	0.1	0.1	0.1	0.6	0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1	-20.1%
Losses	0.5	0.3	0.2	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	-8.3%
Total Demand	8.0	8.2	8.2	8.6	9.0	9.1	9.1	9.2	9.4	9.7	10.0	10.1	2.0%
Growth y-o-y (%)	-1.20%	2.50%	0.00%	4.88%	4.65%	1.11%	0.00%	1.10%	2.17%	3.19%	3.09%	1.00%	

Source: Ministry of Energy of Georgia

Electricity deficit under base case scenario



Source: Ministry of Energy of Georgia

Comments

- Low electricity usage in the country can be attributed to low economic and industrial activity as well as the relatively low income of population
- Government of Georgia expects moderate growth rate in domestic consumptions of electricity by forthcoming years
- However, under base case scenario (usage of existing hydro resource) Georgia will face an electricity shortage by 2011

Unique Investment Opportunity in the Georgian Hydro Power Generation Sector — September 2008 — 10

Electricity balances (revised case)

Electricity Supply (TWh)

	2004	2005	2006	2007	2008F	2009F	2010F	2011F	2012F	2013F	2014F	2015F	CAGR (07-15F)
HPPs	5.9	5.9	5.3	6.7	7.4	7.6	8.1	8.7	9.6	10.7	11.9	12.1	8.3%
Thermal	0.8	1.0	2.1	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.2	-2.8%
Total Production	6.7	6.9	7.4	8.2	8.9	9.1	9.6	10.1	11.0	12.1	13.3	13.5	6.8%
Imports	1.3	1.4	0.8	0.4	0.7	0.7	0.6	0.6	0.6	0.6	0.7	0.2	9.1%
Total Supply	8.0	8.3	8.2	8.6	9.6	9.8	10.2	10.7	11.6	12.7	14.0	14.7	6.9%
Growth y-o-y (%)	-1.20%	3.75%	-1.20%	4.88%	11.63%	1.88%	3.99%	5.60%	8.19%	9.29%	10.08%	5.15%	

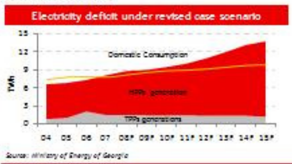
Source: Ministry of Energy of Georgia

Electricity Demand (TWh)

	2004	2005	2006	2007	2008F	2009F	2010F	2011F	2012F	2013F	2014F	2015F	CAGR (07-15F)
Distribution	5.7	5.9	5.9	5.8	6.0	6.3	6.5	6.6	6.7	6.9	7.0	7.1	2.6%
Direct Customers	1.7	1.9	2.0	2.0	2.2	2.3	2.4	2.4	2.5	2.6	2.8	2.8	4.5%
Total Domestic Consumption	7.4	7.8	7.9	7.8	8.2	8.6	8.9	9.0	9.2	9.5	9.8	9.9	3.0%
Exports	0.1	0.1	0.1	0.6	1.1	0.9	1.2	1.6	2.3	3.1	4.1	4.7	29.3%
Losses	0.5	0.3	0.2	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	-8.3%
Total Demand	8.0	8.2	8.2	8.6	9.6	9.8	10.2	10.7	11.6	12.7	14.0	14.7	6.9%
Growth y-o-y (%)	-1.20%	2.50%	0.00%	4.88%	11.63%	1.88%	3.99%	5.60%	8.19%	9.29%	10.08%	5.15%	

Source: Ministry of Energy of Georgia

Electricity deficit under revised case scenario



Source: Ministry of Energy of Georgia

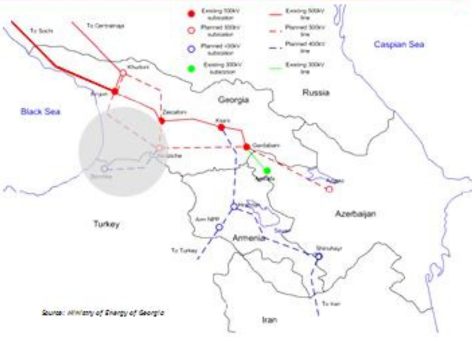
Comments

- If Georgia utilizes its hydro resource potential at a reasonable level, country will experience the huge electricity surplus
- Under revised case scenario (sensible usage of hydro potential) Georgia will face an enormous export potential by 2011

Unique Investment Opportunity in the Georgian Hydro Power Generation Sector — September 2008 — 11

Transmission line capacity expansion from Georgia to Turkey

- Planned 400-500 KV line (up to 1,300 MW) from Zestaponi to Akhaltsikhe in Georgia (73 km) and a 400 KV line from Akhaltsikhe to Borchka in Turkey (30 km Georgian side + 75 km Turkish side)
- Transmission line path already approved on Georgian side and feasibility study completed
- Memorandum of understanding for development of line signed by Georgian and Turkish Energy Ministers
- Total cost of line including 500/400 HVDC sub-station in Akhaltsikhe was estimated to US$347 mln in December 2007
- EBRD/EIB and KfW are providing the finance on concessional terms to build line
- Estimated transmission tariff 1-1.5 US c/kWh



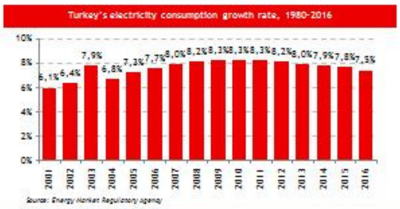
Source: Ministry of Energy of Georgia

Unique Investment Opportunity in the Georgian Hydro Power Generation Sector — September 2008 — 12

Turkey

- The Turkish power industry is a vibrant part of the Turkish economy, and contributes US$15.0 bn to the Turkish GDP
- In 1980-2007, the sector grew by a CAGR of 7.6%, almost twice as much as the general economy
- Nevertheless, Turkish per capita gross electricity consumption is still very low at 2,300 kWh compared to the EU average of 6,460 kWh
- The largest electricity consumers are industrial companies, accounting for roughly 50% of the country's demand, whilst residential customers and commercial enterprises account for 25% and 13%, respectively
- Turkey's total installed power capacity is 38,820 MW of which TPPs account for 67% (25,894 MW), HPPs - for 33% (12,906 MW), and wind power plants - for 0.1% (20MW)

Turkey's electricity consumption growth rate, 1980-2016



Highest electricity consumption growth rate after China

Source: Energy Market Regulatory agency

Unique Investment Opportunity in the Georgian Hydro Power Generation Sector — September 2008 — 13

Turkey cont'd

- Presently technical/economic feasible hydro in Turkey is 72 TWh, when the major expansion of hydropower generation is already underway and remained site constraints a limit growth
- Tax to DSI (the main investing institution responsible for the utilization of all water resources of Turkey) for large HPPs in 2008 stands at 2-5.5 US¢/kWh for use of water. In addition to other taxes, that makes many HPP developments expensive in Turkey
- Tender for nuclear power plant published by Turkish Electricity Trade and Contracting Cooperation (TETAS) in 2008 with installed capacity of 3-5 GW and annual generation of 30+ TWh, might expand electricity supply in Turkey, however project is intended to be completed in 10+ years
- Electricity demand in Turkey has to be met by a combination of hydro (seasonal, already limited resource and expensive because of tax), gas (quick but expensive), coal (dirty but relatively cheap feedstock domestic lignite as long as no post-Kyoto) or nuclear (expensive and time consuming to develop)
- According to the Turkish Ministry of Energy and Natural Resources (MENR), estimated electricity demand growth in Turkey is 135-190 TWh up to 2016. If the projected growth in electricity consumption materialises, Turkey will face energy shortages by 2011 under a conservative demand scenario, and by 2013 under the low demand scenario with optimistic hydrological conditions
- Turkey will need 1,500-2,000 MW of new generation capacity annually from 2011 to meet surging demand
- The possible solutions of the problem are
  - Construction of thermal power plants, which is a preferred solution time-wise, as the construction of a TPP requires from 9 to 18 months, but it would also be the least cost efficient, particularly in light of rising prices for oil and natural gas worldwide. The cost of 1 kWh is estimated in the 8-14 US¢/kWh range (assuming thermal efficiency of 29-58%)
  - Construction of HPPs, which are more cost efficient than TPPs but still expensive because of taxes, limited hydro capacity, long construction period (3-4 years) and high operational seasonality
  - Electricity import, which, is virtually unavoidable, especially in summer months, due to the rising demand for air conditioning and rapid growth in the tourism industry. Probably plenty of scope for imports of electricity into the Turkish system as long as price is below marginal cost of gas generation, which will set price in system after full deregulation of prices estimated to take place in 2012

Unique Investment Opportunity in the Georgian Hydro Power Generation Sector — September 2008 — 14

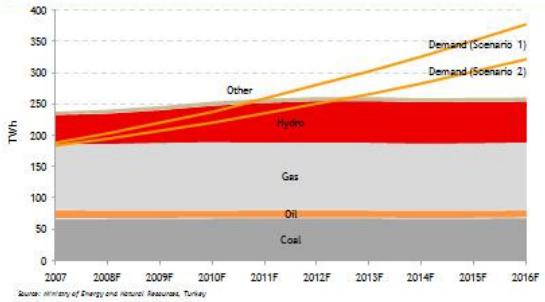
Heavy taxation on newly tendered attractive large Turkish HPP sites (Since 2006)

Project name	Installed capacity MW	Annual production GWh	Load factor %	DSI tax US c/kWh
Cizre Baraji ve HPP	240	1,208	57.5 %	5.52
Dereköy-Demirkapı HPP	105	366	39.8 %	5.15
Çamlıca HPP	110	376	39.0 %	5.06
Alara Enerji Grubu HPP	187	622	37.9 %	4.59
Narlı HPP	130	402	35.3 %	4.16
Kayraktepe HPP	290	768	30.2 %	3.76
Aksu-Anakol HPP	120	344	32.7 %	3.74
Kavşakbendi HPP	140	652	53.2 %	3.51
Çetin Bar. Ve HPP	350	1,237	40.3 %	2.87
Arkun HPP	222	790	40.6 %	2.52
Silvan Baraji ve HPP	160	681	48.6 %	2.04
Silopi Enerji Grubu HPP	140	356	29.1 %	1.23
Alkumru Bar.HPP	222	812	41.8 %	0.83
Sami Soydam Bar.HPP	175	515	33.6 %	0.63
Ayvalı (Çoruh) HPP	125	409	37.4 %	0.42
Konak Bar ve HPP	135	494	41.8 %	0.07
Dikkaya Bar.HPP	125	328	30.0 %	0.06
Karakurt HPP	110	342	35.5 %	0.03
Average	*171*	*595*	*39.1%*	*2.56*
Total	*3,086*	*10,702*	*704%*	*46.16*

Source: Econ Pöyry calculations based on DSI numbers
Turkish Lira/US$ exchange rate: 0.8147

Unique Investment Opportunity in the Georgian Hydro Power Generation Sector — September 2008 — 15

Turkey is projected to require a lot of new electricity



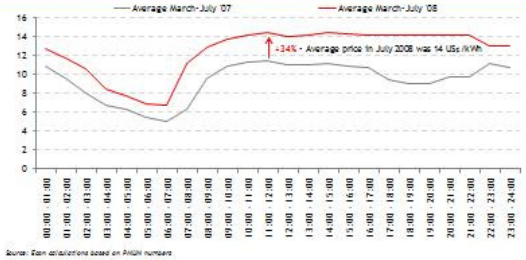
Source: Ministry of Energy and Natural Resources, Turkey

Note: Forecast includes all new projects

Huge export potential to Turkey

- Turkey experiences large electricity shortage in summer season - that's exactly when Georgia generate surplus electricity, providing an enormous hydropower resources export potential to Turkey
- Private wholesale electricity prices in Turkey among the highest in Europe 14 US¢/kWh in July 2008, up 34% y-o-y
- As Turkish TPPs account for roughly 67% of the country's electricity generation, the electricity prices in Turkey are set to rise further in line with the prices of oil products, coal and natural gas
- The current weighted average tariff differential between Turkey and Georgia is already as high as 4.5 US ¢/kWh. Even if the transmission costs lower the differential by 1.0-1.5 US¢ /kWh (the main electricity consumption centers are in the west of the country, whilst Georgia borders Turkey in the east), the Georgian HPPs are still in an extremely advantageous position for the electricity exports. This advantage will grow even further, once Turkey's electricity market liberalises, which is currently planned for 2012
- Turkish policymakers are very interested in importing electricity from Georgia and other neighbouring countries. Imports through a 400 kV line to Borokha in Turkey, even if it is fully utilised, will constitute only 2-4% of total electricity generated in Turkey, and is not expected to have a material impact on the wholesale prices
- A 400-500 kV HV transmission line to Turkey will make it possible to realise most or all the large HPP projects in Georgia while Georgian HPPs will most likely be able to fully utilise it in the period April to September each year
- Georgian Government anticipates the construction of additional high voltage transmission lines as more generation capacity is built in the country, with a view to turning renewable energy into a significant export industry and a significant contributor to the improvement of the current account balance

Putting upward pressure on the wholesale electricity prices in Turkey



Source: Esm calculations based on PMUM numbers

Unique investment opportunity offered by Governement of Georgia

- Georgia enjoys a huge and currently to a large extend underutilised hydro energy potential, which creates a unique investment opportunity in hydro sector
- Georgia's National Energy Policy guidelines adopted in 2006 state that "The main objective of the long term energy policy in Georgia is to fully satisfy demand for electricity in the country with domestic hydro resources - firstly by replacing the share of imported electricity and later thermally generated electricity"
- The Government of Georgia (GoG) created the most investor-friendly surrounding by offering Greenfield Projects based on Build-Own-Operate (BOO) principle, without involvement in any of the new projects in equity shares or with the condition to take over the Plant after. By signing the memorandum of understanding (MoU) with the Government of Georgia, investor gains its full support at all the stages of the investment
- when applying to HPPs above 13 MW, only the generation license is required. The generation license can be obtained before the construction of the HPP
- Only three permits are necessary to start the project: *Construction permit* - issued by local governance bodies if project is up to 13 MW or by Ministry of Economic Development if above 13 MW; *Environmental Impact Permit* - (not required for HPP up to 2 MW) issued by Ministry of Environmental Protection and Natural Resources; *Water discharge Permit* - issued by Ministry of Environmental Protection and Natural Resources
- All new constructions are totally deregulated and there is no tariff set for the newly built HPPs. Investor is free to choose the market and the price for selling the power generated at the new plant. HPPs up to 13 MW have exceptional right to sell electricity to any retail customers
- Export of electricity is totally deregulated. No license is required to export the electricity and there is no tariff set. Investor needs just to find a buyer and conclude direct purchase power agreement (PPA)
- In case of investor request the GoG can offer a guaranteed purchase of electricity, but only for three months period of winter time. The guaranteed purchase price will be negotiated between the investor, GoG and ESCO which will guarantee to purchase the electricity during the next 10 years (three months of each year)
- Profit increases from selling carbon credits
  - Hydro potential gives an investor the opportunity to increase the profit from generating clean energy
- There is no special fee for the connection to the grid

New investment program in greenfield HPPs initiated

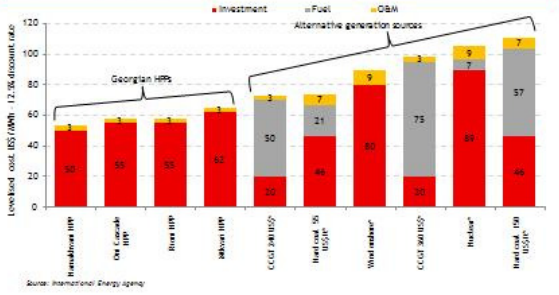
Small and Medium Scale HPPs (<100 MW)

- The GoG has approved the standard terms and conditions for the greenfield investments in HPPs. The Ministry of Energy has announced the solicitation of expressions of interest by investors in greenfield HPPs and other renewable energy plants under BOO structure
- A list of prospective greenfield HPP sites has been published by the Ministry of Energy on its website (www.minenergy.gov.ge). The list comprises 78 sites, with small and medium scale capacity. Most of the prospective HPPs comprising the list that are expected to be run-off-the-river facilities
- Investors interested in investing in greenfield HPPs from the list are required to submit a standard application form to the Ministry of Energy of Georgia, available on its website. Once an application is received for a particular greenfield site, the site will be marked as "Under Offer" on the MoE website, and will remain available for other investors to submit competing applications during a 30-day period. If no competing application is submitted during this period, the initial prospective investor is automatically declared the winner upon submitting a bank guarantee in the amount of US$170,000 per MW of prospective capacity, and is invited to sign a standard MoU with the Ministry of Energy, as well as other standard documentation. In the event that more than one prospective investors apply for the same greenfield site, the winner will be declared in accordance with a transparent formula assigning equal weights to the size of the bank guarantee (per MW of prospective capacity) and declared time to completion
- The winner will be able to purchase the land of the greenfield site at a nominal price following the execution of a land sale and purchase agreement (SPA) with the Ministry of Economic Development of Georgia (MoED)

Large Scale HPPs (>100 MW)

- The GoG invites interested prospective investors to initiate discussions regarding the terms and conditions of investing in several large greenfield HPP sites, with prospective capacities ranging from 100 MW to 700 MW
- Short listed bidders shall be selected in accordance to the conditions for expression of interest by GoG
- Winner signs the MOU with GOG and gets its support through out the whole period of investment
- The winner will be able to purchase the land of the greenfield site at a nominal price following the execution of a land SPA with the MoED

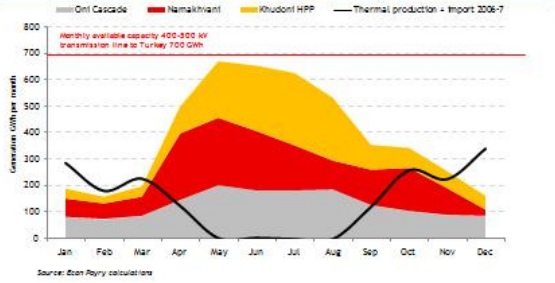
Hydropower expansion in Georgia* most likely least cost



Source: International Energy Agency

*Figures from International Energy Agency (IEA) adjusted for capital cost of 12.5%. Assumes Real 20% Debt cost 12% 80/20 debt/equity split, 7 years straight line depreciation, a carbon price of 14 US$/t, 07/08 baseline, average tariffs to 2012 when electricity sector prices will be liberalised. Non-hydro numbers from IEA projections for generation asset cost with start operation in 2015 adjusted for a capital cost of 12.5%

A lot of electricity needs to be exported from Georgia



Source: Econ Poyry calculations

Appendix -1

HPPs Preliminary Assessment by ECON PÖYRY

Oni cascade on Rioni river

- The proposed Oni Cascade is a 272MW 3-stage cascade aimed at tapping the significant hydropower potential of the Rioni River - Georgia's most affluent river. A 5-year development and construction period is envisioned, costing an estimated US$477 mln. The site will produce 1,475-1,550 GWh annually, depending on the final reservoir design. The site appears to be financially viable at a tariff which is below that of the approximate marginal cost of thermal in Georgia - USc 6.8/kWh. In fact, it is estimated that an average tariff of USc 5.8 until planned liberalization in 2023 is sufficient to cover all costs, including cost of capital. Expected revenues from sales of carbon credits play an important role in bridging the requirements of international investors and those of the regulator. Overall, the sector outlook is positive with the planned future liberalisation presenting a potential for future windfall profits to equity providers. Subject to further geological tests, the site appears to be technically and economically feasible with no known major environmental/social risks

Key results for the Oni Cascade	
River	Rioni
Res. Vol.	210 mmm³*
Capacity	272 MW
Ann. Prod.	1,475 GWh
Const. cost	US$ 477 mln
Cost/MW	US$ 1.75 mln
Cost/MWh	US$ 0.033
Ave. tariff	0.058**

Source: ECON PÖYRY

* Reservoir volume is based on original design of local experts. However, the it is expected that the size of the dam and reservoir be better optimized with a smaller dam. Costs and generation estimates have been adjusted accordingly

** This is the estimated average tariff for the first 12 years of operation, before planned liberalisation in 2023. According to the analysis above, this average tariff ensures an RoE of approximately 20% on the project

Namakhvani Cascade on Rioni River

- The proposed Namakhvani cascade is a 3-stage 450MW site along the Rioni River, which is Georgia's most affluent river. A 5-year development and construction period is envisioned for the entire cascade, with the first unit coming online after 3.5 years. It is estimated that the site will produce some 1,674 GWh at full production. The site appears to be economically and financially viable at a tariff of 5.7 USc until debt is repaid, at which point it is expected that the tariff will fluctuate somewhat. In the analysis, expected revenues from sales of carbon credits play a key role in bridging the requirements of international investors and those of the regulator. The Ministry of Energy of Georgia has commissioned a feasibility study. The site appears to be technically and economically feasible with no known major environmental/social risks

Key results for the Namakhvani Cascade	
River	Rioni
Res. Vol.	182 mmm³
Capacity	450 MW
Ann. Prod.	1,674 GWh
Const. cost	US$ 538 mln
Cost/MW	US$ 1.2 mln
Cost/MWh	US$ 0.032
Ave. tariff	0.053**

Source: ECON PÖYRY

* Includes three reservoirs of sizes; 13Mm³, 153Mm³ and 12.6Mm³

** This is the estimated average tariff for the first 12 years of operation, before planned liberalisation in 2023. According to the analysis in the study, this average tariff ensures an RoE of approximately 20% on the project. However, to ensure debt repayment and liquidity in early years, a tariff of 5.7 USc is required - followed by a fall in the tariff once debt is fully repaid

Khudoni HPP on Enguri River

- The proposed Khudoni HPP is a large 638MW site located upstream of the even larger Enguri HPP. The site was originally designed as part of an integrated plan so as to maximize the energy potential of the Enguri River. Accordingly, in addition to the estimated 1,445 GWh of annual production, Khudoni will increase the available winter capacity for the Enguri HPP. A 4.5 year development and construction period is assumed, and the financial attractiveness of the site is evaluated based on a tariff just below estimated marginal thermal in Georgia - USc 6.8/kWh for the initial 7 years of full production. In this case, the project is viable and appears financially attractive. In fact, the project covers all costs including costs of capital at a tariff of USc 6.5 for an initial 20 year period. Expected revenues from sales of carbon credits play an important role in bridging the requirements of international investors and those of the regulator. Overall, the sector outlook is positive with the planned future liberalization presenting a potential significant future benefit to equity providers. However, it is worth noting that the site involves a very large dam of 170m and would require some resettlement. These, and other issues, are to be addressed in the full feasibility study (including environmental impact study) of the site, which has been commissioned by the World Bank

Key results for the Khudoni HPP	
River	Enguri
Res. Vol.	230 mmm³
Capacity	638 MW
Ann. Prod.	1,445 GWh
Const. cost	US$ 520 mln
Cost/MW	US$ 0.82 mln
Cost/MWh	US$ 0.036
Ave. tariff	0.065**

Source: ECON PÖYRY

* Reservoir volume is based on revised 1992 design

** This tariff over 20 years ensures cash flows to cover costs of capital, including a 20% RoE

Contacts

Lado Gurgenidze
Prime Minister of Georgia
lgurgenidze@geo.gov.ge

Alekhander Khetaguri - Minister of Energy of Georgia
Cell: +995 99 490 099
Alexander.khetaguri@minenergy.gov.ge

Levan Mtchedlishvili - Deputy Minister of Energy of Georgia
Cell: +995 77 401 400
l.mchedlishvili@minenergy.gov.ge

Goga Melikidze - Advisor to Prime Minister of Georgia
Cell: +995 99 486 261
gmelikidze@geo.gov.ge

HE, Ambassador Mr. George CIAMBA, Ambassador of Romania to Greece

Ladies and Gentlemen

Let me start by conveying my sincere thanks for the kind invitation I received on behalf of Professors Dimitrios Mavrakis and Ioannis Karakostas to address this important event and to praise the efforts of the Greek Energy Policy and Development Centre and the Albanian CiO of the BSEC for their efforts in organizing this event.

I am particularly pleased to address the audience with a few remarks related to a field – that is energy - which is not only one of the most important issues of concern and debate at all the governmental/academic/scientific and social levels, but it is also the domain in which Romania has a very good performance, in compliance with its status and obligations as an EU member.

As well, the regional cooperation, in particular by taking advantage of the unique assets and opportunities existing in the Black Sea Area and particularly those offered by the BSEC member states, is of utmost significance for the overall well-being of our countries and the regional development.

Let me remind in this context that the liberalization of the Romanian energy market and the related reforms have been remarkable achievements of the last years, if one should only take into consideration that no later than the year 2000, the energy sector was responsible for a significant fiscal deficit of about 5% of the GDP. No later than 2005, the Day Ahead trading scheme was set up in Romania by OPCOM – the first regional Day Ahead Market for electricity - and market participants conducted trades through bilateral payments with settlement notes. After a few years, in July 2008, and following improvements to the structure of its electricity trading market with the implementation of a new, centralized mechanism for settlement, the power market operator OPCOM has moved from an administrative role on the Day Ahead Market (DAM) into a centralized counterpart role, as an intermediary between buyers and sellers. We consider that day ahead trading in Romania is now a stable framework and the price is more stable and more reasonable than in the regional framework."

As a BSEC member, Romania aims to actively promote the security of supplies as an important part of the strategy on energy security and to support the accomplishment of the European Union goals in this respect.

The EU member states started the drawing up of a New Energy Policy that includes a series of guidelines to be implemented in order to consolidate the EU security of supply, within the process of the national market liberalization and the establishment of the domestic energy market.

An important role within these policies is played by the obvious need of DIVERSIFICATION, that is the diversification of the energy sources and transport routes. One should be aware that a sound energy security of the EU is strongly linked

1

with the development of alternative energy projects, like those having as energy sources the Central Asian region. The relations in the energy field should be based on the principles of transparency and reciprocity. The promotion of common energy projects in the Black Sea Area can render mutual advantages for the BSEC countries.

The improvement of the balance between demand and offer is crucial in order to improve and support the regional economic development. Thus, a strong involvement of the countries is requested with a view to implementing reforms oriented to the market economy, regional integration and sustainable development. Sustainable, competitive and secure energy could be obtained only in a larger market, opened for wide competition rather than dominated by national players. A larger market based on competition versus protectionism is the way the BSEC countries should contribute to tackle the challenges we are facing.

Romania supports the use of energy production from renewable sources. Investments will be made into renewable energy sources (solar, wind, hydro, bio-mass and geo thermal), reducing the negative impact of energy production on the environment. The projects in this field will be financed also by European funds.

It is appropriate to remind the Romanian main actions and major projects in the oil and natural gas sector, aiming at ensuring the security of supplies and diversification of transport routes:

- a new transit passage for natural gas from the Caspian Sea region and Central Asia toward Central and Western Europe – that is the EU-backed NABUCCO project;
- a complementary transportation route of the oil from the Caspian Sea towards Europe, the CONSTANTA-TRIESTE oil pipeline (PEOP Project);
- the development of LNG (liquefied natural gas) underground storage facilities, aiming at diversifying the gas source-markets and a better gain in terms of access of the Central Asia and Middle East on the European market:
- interconnection of the National Gas Transportation System with similar regional and neighbouring countries systems;

I would like to refer to the necessity to boost regional cooperation, not only for the normative harmonization and the creation of some regional markets meant to attract foreign investors but also in order to better use the energy resources and contribute to the mutual support in case of emergency. I would also like to state that, taking into account the new European dimension Romania intends to promote in the Black Sea region, we sustain the consolidation of the cooperation in order to ensure an integrated energy market and some safe power and energy resource transmission corridors. Within the current world situation this regional cooperation may gain new attributes and the EU support proves to be essential for the accomplishment of this aim.

Thank you for your attention.

2

HE, Ambassador Mr. Leonidas CHRYSANTHOPOULOS, Secretary General, BSEC

Your Excellencies (Ministers etc)
Ladies and gentlemen,

Having carefully heard all our important speakers my intention is to say now a few words about these issues in relation to the BSEC Organization. Issues that manifest their presence in very dynamic conditions, occasionally even turbulent, and therefore become the centerpiece of global developments.

The Black Sea Region has been and will certainly continue to be a major energy crossroad, or conduit as we tend to say. At the same time it is an energy supplier, a transit corridor and a consumer. To address the energy challenges, there is an emerging infrastructure (pipelines etc) in our region that increasingly supplies Europe with the necessary hydrocarbons and in that way, acts as a bridge between Europe and the Caspian Sea by creating an uninterrupted network.

The BSEC Organization has attached great importance to this unique transit potential and the plentiful energy resources. I need to emphasize that cooperation, in the areas of energy and environmental protection, has been at the forefront of our regional framework for many years.

The reasons for BSEC to attach such importance are, for the most part, self-evident; I repeat that the rich energy potential of the Black Sea Region and its role as a global energy conduit constitute a comparative geostrategic advantage for the Organization.

This geostrategic advantage requires from us to further enhance our mutually beneficial cooperation, in addressing the diverse energy and environmental challenges, in a world facing the dramatic consequences of a drastically changing climate.

The BSEC type of regional cooperation requires significant coordination efforts among the Member States and, whenever possible, the formulation of common strategies (in energy and environmental protection). However, in the energy sector only one project I need to mention, **the Black Sea Regional Transmission Planning Project (BSRTPP),** which we expect to enter soon in its second phase of implementation.

So, among other priorities, our coordination efforts, that I just mentioned, should take into account the possibilities to achieve a far better utilization of energy resources.

A better utilization of our energy resources, I believe, will be achieved through the full integration of energy producers and distributors (of our

region) into the international energy markets and thus achieve optimisation and efficiency.

In addition, while improving our coordination in energy, we should take into account the environmental challenges, among which the prevention of marine pollution is of paramount importance.

We should seek to work together towards the implementation of environment-sensitive policies and, in parallel, for the creation of a most-promising "emissions trading regional market".

Since this year and further to the 15th Anniversary Declaration (Istanbul, 25 June 2007) and the BSEC Ankara Council Declaration (25 October 2007), the issues of regional cooperation in addressing the consequences of climate change are included in the agenda of the BSEC Working Group on Environmental Protection. And it goes without saying that consideration of appropriate steps will encourage BSEC to collaborate more closely with the relevant international organizations.

In addition to our coordinated efforts in strengthening regional collaboration, the Region needs appropriate joint investments by the energy authorities and other market actors that will facilitate our integration to the world markets and will improve economic efficiency.

The need for joint investments is one additional reason why today's conference has a special place in BSEC cooperation. This need is clear and our countries are already undertaking joint actions with respect to the interconnection of oil and gas pipeline networks, as well as the electric power grid systems, and their linkage to the Trans-European energy networks.

These linkages, will help bridge the imbalance between production and consumption of energy, reduce energy production costs and decrease the ecological impact of handling energy, especially of electric power entities.

This gradual restoration of market imbalances could also be the foundation of a regional energy market. A gradual creation of an open electricity market in the Black Sea Region that will contribute to additional operational savings and reduce investment costs for the utilities in the electricity sector.

Another important element of our BSEC agenda, is the issue of achieving higher energy efficiency as well as a wider use of energy saving technologies - and we had already some Workshops in BSEC dealing with these issues.

To accomplish the goals of its energy agenda, BSEC activities should be directed towards a more project-oriented approach, with emphasis on

projects that will motivate the energy market stakeholders and have the highest possible regional impact.

This is another key issue of today's conference (project financing) and I take this opportunity to thank again the Hellenic Republic for its initiative to establish a special fund –the BSEC Hellenic Development Fund (HDF)- and endow with an initial amount of two million Euros.

But allow me now, to present some of the political priorities of the BSEC Organisation regarding the development and the prospects of our cooperation in these two areas.

The Ministers of Energy of the twelve Member States have adopted already four declarations.

I will spend a few minutes to speak only of the most recent Ministerial Declaration **on Cooperation with the EU** which was adopted in Kiev on 9 April 2008. This Declaration deals with the BSEC-EU relations in the field of energy for which we have invested a lot of time and effort.

The Meeting of the BSEC Ministers of Energy last April is actually an outcome of the **Meeting of the Foreign Ministers of the wider Black Sea Region and of the European Union** that was held in Kyiv on 14 February 2008.

The BSEC-EU Ministerial Meeting in February inaugurated for the first time in history a new era of enhanced relations with the EU and launched the Black Sea Synergy Initiative. It also envisaged holding BSEC-EU Ministerial meetings in different formats to further promote cooperation, particularly when an enhanced BSEC-EU relationship can be achieved.

That is why, after the Kiev Meeting, I am very happy to see our relations with the EU expanding also at the sectoral (Ministerial) level.

Briefly, these are the key points of the **Energy Declaration of Kiev** last April:

The BSEC Minister of Energy **agreed to** (among other things):

- *Explore* on the possibility of developing a BSEC regional energy strategy;
- *Explore* on the possibilities for the beginning of a coordinated process of harmonization of legislation and regulation in the field of energy between BSEC Member States and the European Union;
- *Strengthen* relations with international organisations in order to enhance energy cooperation in the BSEC region (in particular UNECE, the Energy Charter Conference, the IEA, the ECT Secretariat, as well as market players with long-term strategic interests);

- *Develop* practical, purpose-oriented cooperation with the European Commission to enhance synergies of the EU and BSEC regional initiatives in the field of energy;
- *Invite* the EU to support BSEC efforts in ensuring energy security in the region;
- *Explore* on the possibilities of the elaboration of joint BSEC-EU Action Plan in the field of energy;
- *Develop* the exchange of information, expertise and best practices, as well as training programmes between BSEC and the EU.

Today's organizers, the PROMITHEAS energy network, is a good example of BSEC-EU collaboration, since it was initially funded and created by the BSEC Project Development Fund and is now a project funded by the EU!

Coming back to the issue of cooperation within BSEC, I should mention the **August crisis** that affected our region, the first major one since BSEC had become a regional organization. This crisis was a test for us since many thought that our Organization would be weakened.

But fortunately this was not true, since the BSEC meetings continued uninterrupted after August with particular emphasis to the informal meeting of the BSEC Ministers of Foreign Affairs that was held in **New York** on September 25th.

Now, a quick mention of the **Black Sea Ring Highway** an important BSEC infrastructure project. Here too we have good news. The MoU on the Black Sea Ring Highway will finally come into force on 1st November 2008, a significant step towards its implementation.

No matter the good news on BSEC cooperation in projects, the consequences of the ongoing **global financial crisis** should be an issue of concern for all of us and measures should be taken in all Member States to safeguard their financial institutions so that economic development in the BSEC region is not impeded.

To continue and because, as I said before, energy and environmental protection are placed high on the BSEC agenda, I also need to mention that the **Summit Declaration for the 15th Anniversary of BSEC** (Istanbul, 25 June 2007) attributes particular importance to them.

To conclude,

We acknowledge that the BSEC area is increasingly becoming an important guarantor of Europe's energy security. This reality is pivotal to our

Organization and renders our cooperation of vital importance in order to ensure the uninterrupted functioning of the East-West energy corridor.

I expect that today's conference will contribute to the above mentioned BSEC issues in the most beneficial way and lead to practical steps that will enhance our regional cooperation and improve our coordination in the fields of energy and environmental protection.

I wish to thank the organizers, KEPA of the University of Athens and particularly the PROMITHEAS network partners and Professor Mavrakis, and wish to all fruitful deliberations today and tomorrow.

Annex VI: Session B presentations

Investing in the Black Sea region

By Dr. Costas Masmanidis (BSEC – Business Council)

BSEC BUSINESS COUNCIL

INVESTING
IN THE BLACK SEA REGION

Dr. Costas Masmanidis
Secretary General

What is BSEC ?

BLACK SEA ECONOMIC COOPERATION

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Economic Cooperation Organization
Created in 1992
12 countries

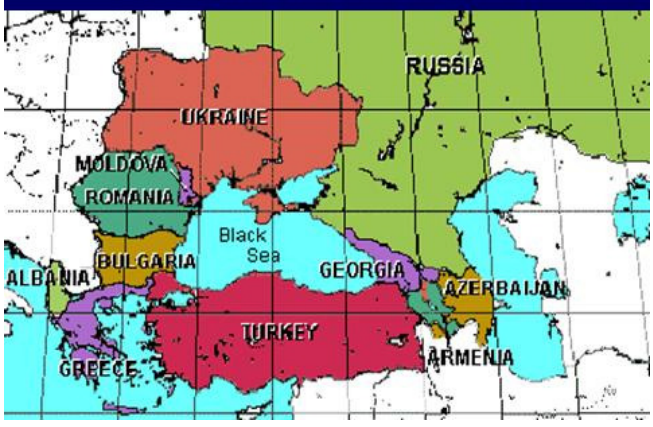
What is BSEC ?

BLACK SEA ECONOMIC COOPERATION

Economic Cooperation Organization
Created in 1992
12 countries

Albania Armenia Azerbaijan
Bulgaria Georgia Greece
Moldova Romania Russia
Serbia Turkey Ukraine

The Black Sea Region



The BSEC Structure

- Council of Ministers of Foreign Affairs
- Secretariat (Istanbul)
- ca 20 Working Groups, eg:
  - Energy
  - Transport
  - Environment
  - etc
- 4 Related Bodies


BSEC Related Bodies
✓ Business Council Istanbul
✓ BS Trade & Dev. Bank Thessaloniki
✓ Parliamentary Cooperation Istanbul
✓ Academic Cooperation Athens


BSEC BUSINESS COUNCIL


BSEC BUSINESS COUNCIL
Our Strategic Directions
(reflecting the needs of our SMEs)


BSEC BUSINESS COUNCIL
Strategic Directions
1. Promoting Regional Development


BSEC BUSINESS COUNCIL
Strategic Directions
1. Promoting Regional Development
2. Promoting Business Cooperation


BSEC BUSINESS COUNCIL
Strategic Directions
1. Promoting Regional Development
2. Promoting Business Cooperation
3. Disseminating Business Information

BSEC BUSINESS COUNCIL

Strategic Directions

1. Promoting Regional Development
2. Promoting Business Cooperation
3. Disseminating Business Information
4. Helping SMEs Gain Competitiveness

BSEC BUSINESS COUNCIL

Strategic Directions

1. Promoting Regional Development
2. Promoting Business Cooperation
3. Disseminating Business Information
4. Helping SMEs Gain Competitiveness
5. Helping improve the Business Climate / Eliminate Trade Barriers

BSEC BUSINESS COUNCIL

Strategic Directions

1. Promoting Regional Development
2. Promoting Business Cooperation
3. Disseminating Business Information
4. Helping SMEs Gain Competitiveness
5. Improving the Business Climate / Trade barriers
6. Promoting Foreign Investments

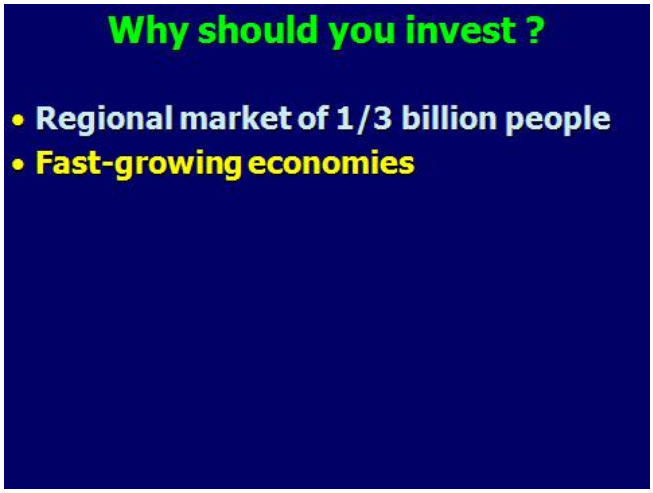
Invest

in the Black Sea Region !

Why should you invest ?

Why should you invest ?

- Regional market of 1/3 billion people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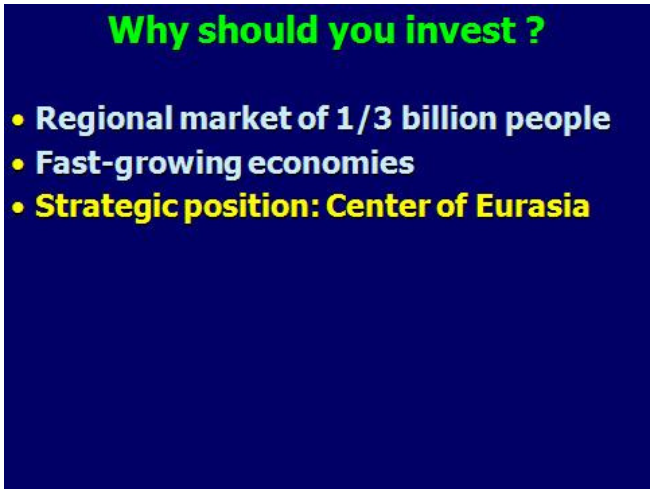
• Regional market of 1/3 billion people
• Fast-growing economies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• Strategic position: Center of Eurasia


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• Strategic position: Center of Eurasia
• Energy resources & transport routes


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• Fast-growing economies
• Strategic position: Center of Eurasia
• Energy resources & transport routes
• Great nature, culture: Tourism paradise


Why should you invest ?
• Regional market of 1/3 billion people
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• Energy resources & transport routes
• Great nature, culture: Tourism paradise
• Science & Technology


Why should you invest ?
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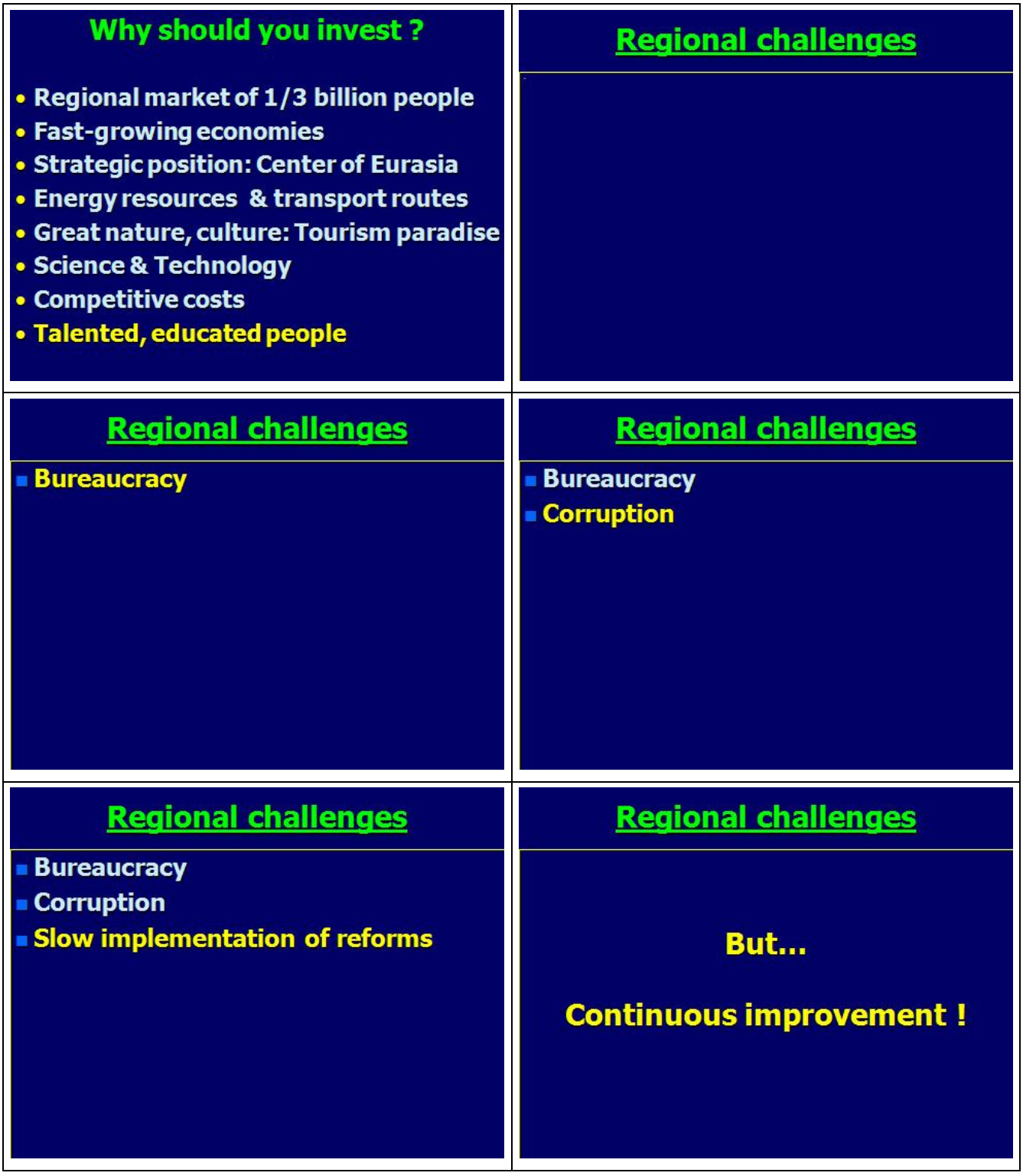
• Great nature, culture: Tourism paradise
• Science & Technology
• Competitive operation costs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• Great nature, culture: Tourism paradise
• Science & Technology
• Competitive costs
• Talented, educated people
Regional challenges
Regional challenges
■ Bureaucracy
Regional challenges
■ Bureaucracy
■ Corruption
Regional challenges
■ Bureaucracy
■ Corruption
■ Slow implementation of reforms
Regional challenges
But...
Continuous improvement !

Regional challenges

- Bureaucracy
- Corruption
- Slow implementation of reforms
- Frozen conflicts

Why is FDI so important in the BSEC region ?

- Economic benefits
- Technical Know-how
- Managerial Know-how
- Other spill-over effects (eg, new mentalities)
- Linking of local companies to global supply chains (globalization!)

What kind of FDI can provide maximum benefits in the BSEC region ?

Greenfield investments
in diverse Sectors

FDI inflows in BSEC

Rush in FDI since 2002

FDI inflows in BSEC
(in billion USD)

2002	5.7
2003	9.3
2004	18.4
2005	36.5
2006	57.9
2007	58
2008	43.7

Investment profile in BSEC

Rush in FDI since 2002

However, a big share is H/C - related

(exploration, upstream operations, pipelines etc)

Investments in BSEC

More greenfield / downstream investments needed, to help diversify the economies

Eg., in the Energy sector:

- Speciality chemicals
- Renewable Energy-related investments

Investment promotion in BSEC

One of the main strategic directions of the BSEC BUSINESS COUNCIL

is the improvement of the business / investment climate

and investment promotion.

Investment promotion in BSEC

New OECD regional project on investment promotion and sector competitiveness

To be launched with the cooperation of the BSEC Business Council (October 20, Tirana)

BSEC BUSINESS COUNCIL

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BLACK SEA BUSINESS GATEWAY

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BSEC BUSINESS COUNCIL

Thank you !

Favorable business environment an increasing potential for trade and investments in energy sector

By Mr. Bashkim Sykja (Albanian Ministry of Economy, Trade and Economy)

Ministry of Economy Trade and Energy

FAVORABLE BUSINESS ENVIRONMENT AN INCREASING POTENTIAL FOR TRADE AND INVESTMENTS IN ENERGY SECTOR

ATHENS
8-9 OCTOBER 2008

Ministry of Economy Trade and Energy

ROLE AND FUNCTIONING OF THE ENERGY SECTOR

- Vital importance for any economy in the BSEC area;
- A fundamental precondition for fulfilment of the national goals for a sustainable economic growth;
- BSEC countries share the same concern regarding the stability of energy market, growth of trade , improve energy savings and reduce environmental pollution.

Ministry of Economy Trade and Energy

THE GOVERNMENT FOCUS

- Dynamic economic reforms, with a view to an increased harmonization of legal and institutional framework;
- Ensure better regional co-operation in energy development;
- Seeking for optimized utilization of local resources in a sustainable environment;
- Improving business climate, establish regulatory and institutional mechanisms, reduction of administrative barriers, enabling toward further development of energy sector.

Ministry of Economy Trade and Energy

ALBANIA A TOP 10 REFORMER GLOBALLY AND REGIONALLY

- Successful reforms for the facilitation of doing business,2007/08, ranked the second among 10 countries (Annual report of IFC-WB on doing business 2009);
- Starting a business, reduction of registration cost, consolidation of tax, health insurance and labour registration into a single application;
- Strengthened investor protections, with a new company law;
- Corporate income tax was reduced from 20 percent to 10 percent effective January first, 2008;
- Established a public credit registry, allowing financial institutions to share credit information.

Ministry of Economy Trade and Energy

MACROECONOMIC STABILITY A SENSITIVE INDICATOR FOR FOREIGN INVESTORS

- Economic growth raises very fast in the region, with 5-6% in real terms;
- Inflation remains 2-4%; unemployment reduced to 13,2%;
- FDI-s in 2007, year raised of 74%, in amount 460mln.Euro,and in the first six months 2008,inflow raised 65%, in amount 227mln.Euro, comparing to the same periods of year 2007;
- High export growth rate of 27% in 2007 and in the first six months 2008, raised 19,1% comparing the same period of 2007.
- Equal treatment, security and protection for investments, Albania has signed 38 agreements for reciprocal protection and promotion of investments.

Ministry of Economy Trade and Energy

MACRO ECONOMIC STABILITY IS FOLLOWED BY A CONSTANT AND FRIENDLY BUSINESS ENVIRONMENT

- Removal administrative barriers, versus regulatory reform;
- Broaden the agenda from a fragmented to a comprehensive regulatory one;
- Increased the level of political leadership;
- Establish instruments to ensure fair rules of the game;
- Implement and monitor the reform process.

Ministry of Economy Trade and Energy

Institutional framework for the Regulatory Reform

Ministry of Economy Trade and Energy

CONCRETE ACTIONS

- Albania today with minor number of licenses and permissions. From 166 existing licenses and permissions, **104** were eliminated;
- A new policy area in the license area, aiming for establishment of National Licensing Centre, the second „one stop shop" expecting to become operational in 2009;
- Stability and predictability if the legislative framework. Preparation of the guidelines for system management of RIA.
- Government transparency, e-government. This year 08, is in place e-procurement; e-tax;
- E-signature law, and e-commerce law.
- Reduction of the tax burden;
- Business Dialogue / function of BAC;
- Creation of the Administrative Court of Justice for administrative dispute resolution.

Ministry of Economy Trade and Energy

TRADE POLICY A VERY LIBERAL APPROACH AND IN SUPPORT OF ECONOMIC INTEGRATION

- Albanian market very open, with a liberal trade regime;
- Member of WTO since 2000 year, guaranteeing non discrimination and transparency. Improvement of trade legislation with WTO rules. The average binding tariffs for industrial and agricultural products respectively are; 10,6% and 6,4%, stimulating FDI-s.
- Implementation of CEFTA and Interim Agreement with EU;
- For the year 2007, trade volume covers 42%; Exports 9% and Imports 33% of GDP share;
- Beside the positive of export trends, still we do face a negative trade balance.

Ministry of Economy Trade and Energy

TRADE EXCHANGES AMONG THE BSEC COUNTRIES

No.	Countries of BSEC	EXPORT 2006 000$	Percentage of total Black SEA	Change 06/05	2007 000$	Percentage of total Black SEA	Change 07/06	6 Months 08 000$	Percentage of total Black SEA	IMPORT 2006 000$	Percentage of total Black SEA	Change 06/05	2007 000$	Percentage of total Black SEA	Change 07/06	6 Months 08 000$	Percentage of total BSEC
1	Armenia	0.0	0.00	0.0	0.0	0.0	0.0	0	0	0.0	0.0	-100	4.2	0.00	100	0.0	0.0
2	Azerbadzhan	0.0	0.00	0.0	0.0	0.0	0.0	0	0	700	0.1	-97	1701	0.1	130	5336	1.1
3	Bulgaria	3374	3.8	-7.7	7302.3	5.3	129	4901	4.2	53501	7.3	13	74113	5.2	-11	47398	8.7
4	Georgia	3030	3.3	100	0.4	0.00	-100	0.0	0.0	7502	0.7	-12	15217	1.2	143	6632	0.8
5	Greece	74326	80.3	9.4	85810	61.8	19	68942	60.3	479380	43.8	11	609330	42.7	27	363932	43.8
6	Moldavia	9.9	0.0	174	0.0	0.00	-100	0.0	0.0	2609	0.2	1	3329	0.2	-37	0	0.00
7	Romania	648.2	0.7	-29	3287.4	2.3	408	1072	1.2	22330	4.3	178	17720	1.2	-60	9922	1.2
9	Russia	4202	0.2	0	2732.3	1.9	308	4231	4.8	134283	33.3	18	170734	32.0	37	102213	33.3
10	Serbia				19104	13.3		14027	16.4				120908	8.2		71124	11
11	Turkey	10305	11.2	-10	24105	16.8	133	14097	16.0	220407	20.8	17	302399	21.2	33	127100	18.9
12	Ukraine	2.2	0.0	-85	12.6	0.01	129	0.3	0.0	110274	10.8	24	108344	7.6	-7	43234	8.2
	Total of the BSEC	92063	in % of Total-Albania (12%)	3.3	143033	in % of Total-Albania (16%)	55.3	122370	in % of Total-Albania (16.2%)	1099741	in % of Total-Albania (30%)	15.3	1423043	in % of Total-Albania (34.3%)	29.8	831432	in % of Total-Albania (33.9%)
	Others (countries)	682981	0.8	21.3	932143	80.4	32.9	290243	83.7	1527249	66.0	14.3	2707943	65.3	40.4	1692413	67.1
	Total of Albania	733043	100	19.6	1075783	100	32.9	763624	100	2637289	100	16.6	4173996	100	26.0	2528976	100

Ministry of Economy Trade and Energy

IMPROVING BUSINESS INFRASTRUCTURE

- Improving legal and regulatory framework/ concession law and under legal acts; law on development of free economic zones;
- Establishment of industrial parks, export processing zones, etc;
- Increasing capital investments with PPP contracts;
- Speed up the privatization process, mostly in strategic sectors, energy, oil, insurance etc;

Ministry of Economy Trade and Energy

THE ONLY COUNTRY IN EUROPE OFFERING IMMENSE OPPORTUNITIES IN ENERGY POWER

- Construction of new Generation capacities as private investments of Concessions/PPP-s;
- Hydropower Plants;
- Thermo Power Plants.

Ministry of Economy
Trade and Energy

POLICY ACTIONS IN HYDROCARBON SECTOR

- Diversification of supply sources for oil, gas and their by-products, creating possibilities of interconnection with international oil and gas pipelines.
- Privatization of public enterprises operating in petroleum sector/ privatization of ARMO;
- Promoting FDI-s for oil and gas exploration and production in Albanian territory;
- Providing a stable and qualitative regulatory framework towards the quality of by-products market and the emergency oil stocks;
- Developing of the projects for import-export and stocking of energetic products in the area of Porto Romano and in the area of the city of Vlora.

Ministry of Economy
Trade and Energy

Intra-regional trade and strategic investments in energy sector cannot be successful without direct participation of the private sector, as a driving force to economic growth....

THANK YOU!

Bashkim Sykja
E-mail: bsykja@mete.gov.al

Energy Charter Treaty as a Multilateral Framework for Energy Investments: Legal Aspects of Investment Promotion and Protection

By Dr. Sedat Cal (Energy Charter)

Black Sea Energy Policy Conference
"Energy Investments and Trade Opportunities"
Athens, 8-9 October 2008

Energy Charter Treaty as a Multilateral Framework for Energy Investments: Legal Aspects of Investment Promotion and Protection

Dr. Sedat ÇAL
Senior Expert, Energy Charter Secretariat

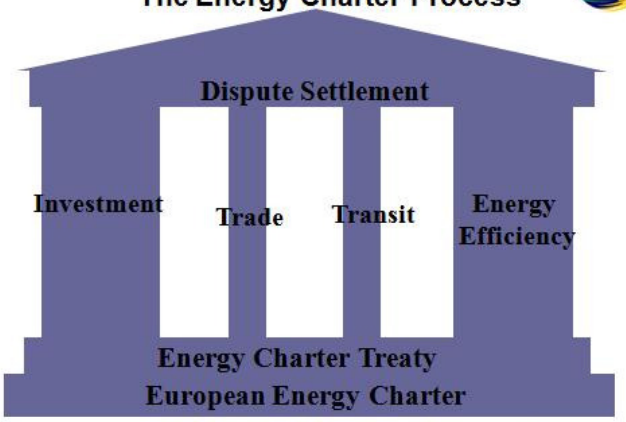
The views expressed in this presentation are those of the author only and not necessarily of the Energy Charter Secretariat or any party to the Energy Charter Treaty

A Brief History of the Energy Charter Process

- **European Energy Charter** (December 1991): a political declaration for energy cooperation in the post-Cold War era. Western/Central/Eastern European and the FSU countries, plus the US, Canada, Australia and Japan, gathered in the Hague, Netherlands
- **Energy Charter Treaty** (December 1994): Inter-governmental agreement to provide legal framework to protect investment and secure trade and transit in the energy sector. Entry into force by April 1998

2

The Energy Charter Process



3

What does ECT provide for?

- Basic principles
  - First multilateral investment agreement
  - Energy sector-specific
  - Principle of non-discrimination/national treatment/MFN for established investments
  - Best endeavour clause for investments in the making
  - Respect for sovereignty over natural resources
  - A discussion forum for energy investment issues
  - Privatization not required
  - Aims at establishing a level playing field
  - Designed to take out political/legal risks associated with energy investments
  - Critical for investments and therefore for energy security

4

Risks Associated with Energy Investment

- Political/legal risks
  - Related regulations
  - Profit transfer
  - Taxes
  - Changes in terms and conditions of the agreement
  - Expropriation
  - Jurisdiction
- Energy Charter Treaty designed to take out political/legal risks associated with energy investment
- Economic risks
  - Prices
  - Marketing
  - Construction
  - Operation
  - Inflation
  - Foreign currency Exchanges
- Other risks
  - Natural disasters
  - Civil unrests, wars
  - Strikes

5

Main features of the ECT

- **Principle of non-discrimination**
  - **Most Favored Nation (MFN) clause**
  - **National treatment clause**
  - **Fair and equitable treatment clause**
  - **The most constant protection principle**
- **Security of investments made**
- Security for investors through settlement of dispute mechanisms, including binding international arbitration
- **Conclusion: ultimate goal of securing a level playing field to promote and protect energy investments**

6

Dispute Resolution Procedures

- An opportunity for amicable settlement
- In failing the amicable settlement;
- Investor-to-state disputes (Article 26)
  - UNCTRAL
  - SCC
  - ICSID
- State-to-state disputes (Article 27)

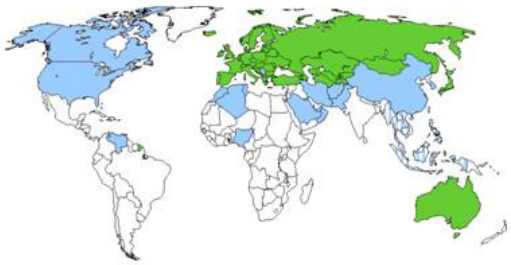
7

ECT and the regional framework approach

- **ECT: The first multilateral framework established under international law**
  - **Wide and diverse geographic coverage: 51 states party to the ECT, including, *inter alia*, the EU, Russian Federation, Australia and Turkey (*see the slide below for geographic coverage*)**
- **Broader context for energy security**
- **Possible synergies with regional frameworks, including the South East Europe Regional Energy Market Initiative**

8

Geographic Coverage of the Energy Charter Constituency



Member Countries Observers

9

Prospective investment in Albanian energy sector

By Mr. Fatjon Tugu (Albanian Ministry of Economy, Trade and Economy)

PROSPECTIVE INVESTMENT IN ALBANIAN POWER SECTOR

Ministria e Ekonomisë Tregtisë dhe Energjetikës

CURRENT SITUATION IN ALBANIAN POWER SECTOR

- The energy in general and it's security and sustainability of supply in particular are becoming more and more sensitive issue in national, regional and European level and big challenges to overcome.
- In this context Albania is facing difficulty to supply its consumers with electricity. Lack of primary energy resources, no network and gas resources, limited production and interconnection capacities and full dependence of it's power production on hydro resources, are some of these difficulties.
- The demand of electricity is much higher than domestic generation, which means that Albania is one of net importer countries in the region. In 2007 the utility has imported more than 50% of it's consumption and also has made 17 % load shedding.
- The large quantity of electricity supply from import, in case of Albania, is not only a question of costs to be faced, but much more it is a question of import capacities to be solved, in local and regional level

CURRENT SITUATION IN ALBANIAN POWER SECTOR

- To overcome this situation Albania is and will continue to be active in regional cooperation first of all in the implementation of the Energy Community Treaty provisions.
- So a program of reforms for improving energy sector performance, increasing tariffs to cover the cost, opening the market, unbundling KESH from a vertically integrated company, towards separated company according to the functions, is ongoing . Now the Transmission System Operator (TSO) and the Distribution System Operator (DSO) are fully unbundled and after a lot of works, in the end of this month, CEZ was selected the winner of the tender for privatization of the DSO.
- Also an investment program for increasing and diversification the production capacities as well as constructing interconnection capacities, is now guiding our actions.

In my presentation I would like to focus only in the main investment projects under implementation and some other new projects that we foreseen to realize in the future.

Projects in generation under implementation

- **Construction of Vlora Combined Cycle Power Plant**

  Co financed by World Bank, EIB and EBRD, fuelled by distillate oil, 97 MW and production is 700 GWh/year. It is under implementation and is foreseen to be put in operation by May 2009.
- **Kalivaci HPP, on Vjosa River**

  The development of this project is under a BOT concession agreement.

  Installed capacity is 93 MW and production 360 GWh/year. It is under implementation and is foreseen to be put in operation in the end of 2010.
- So far, are given in concession 26 small HPP's, with:
  - Totall installed capacities 130 MW;
  - Total annual electricity production 630 GWh;

NEW HYDROPOWER PROJECTS

- Construction of Ashta HPP in Drin River watershed. (The contract was signed)
  Installed Capacity 48 MW;
- Construction of HPPs on Devoll River Cascade. (Under negotiations)
  Installed capacity up to 319 MW
- Construction of Skavica HPP on Drin's River. (Tender to be launch)
  Installed capacity 300-350 MW;
- Construction of HPPs on Vjosa River Cascade.
  Installed capacity up to 400 MW;

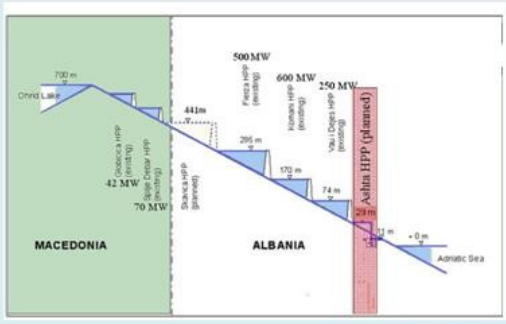
Ministria e Ekonomisë Tregtisë dhe Energjetikës

HYDRO POWER PLANT OF ASHTA

- **The Ashta Hydro Power Plant (HPP)** is located on the Drin river cascade.
- The Drin river, is the biggest river in Albania. It's located in the north of the country and already are in operation five hydro power stations, two in Macedonia and three in Albania.
- The three existing Albanian plants – Fierza, Komani and Vau i Dejes - have a total installed capacity of 1350 MW, representing more than 90 % of the country's total hydro capacity (1460 MW) and account for 98 % of our national energy production.
- Ashta HPP will be the most downstream project along the Drin river cascade. It will therefore benefit from the regulated flow from the upstream reservoirs and will operate as a run-of-river plant.
- Installed capacity is about 48 MW and the average annual electricity output 170 GWh/year.

Ministria e Ekonomisë Tregtisë dhe Energjetikës

EXPLOITATION SCHEME OF DRIN RIVER



ASHTA HPP LOCATION

ASHTA HPP – OUTLINE OF THE PROCESS

- In December 2006, the government of Albania retained the International Finance Corporation (IFC) to structure and implement the development of a hydropower project under a private-public partnership (PPP) arrangement that consists of a long-term concession contract with a private partner for the construction and operation of a hydroelectric power plant ("HPP") in Ashta.
- In September 2007 was submitted Inception Report from IFC;
- Publication of the Invitation for Expression of Interest was made in September 2007 and 18 companies have expressed interest;
- In January 2008 was launched the prequalification process and 11 company were selected in a short list;
- In February, 2008 , a public consultation was organized on Ashta Village;
- Invitation for Bids was sent to the prequalified bidders on March 3rd 2008.
- In April 1-2, 2008 a site visit was organized, followed by a pre-bid conference; Substantial feedback was conveyed to the Government, allowing to make transaction more bankable.

ASHTA HPP – OUTLINE OF THE PROCESS

- Submission of the bids – June 13th. Two bids received:
  - Verbund of Austria;
  - Consortium comprising Electrabel of Belgium and CNR of France
- The Bid Evaluation Committee qualified Verbund of Austria as the winner company for this project.
- Signing of the Concession Agreement – September 30th.
- Approval of the Concession Agreement by the Council of Ministers – mid-October.

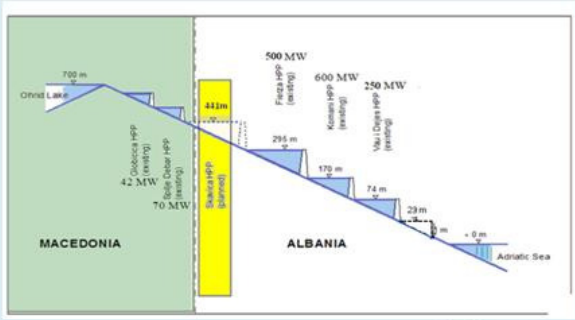
HPPs ON DEVOLL RIVER CASCADE

- **The Devoll cascade** is a big project; the installed capacity is about 319 MW and the electricity production is foreseen 985 GWh/year
- Based on the Albanian Concession Law No 9663/2006 , EVN AG, an Austrian Company, presented at METE an unsolicited proposal for construction several HPPs on Devoll River Cascade, in form of BOT concession.
- On November 11, 2007, METE opened an international concession Tender, in BOT form, for the exploitation of the full hydrological potential of the Devoll Cascade.
- 12 foreign and Albanian companies have expressed their interest, while only 2 of them participated in the tender: EVN AG, an Austrian company and the "Landsvirkjun & Kurum Holding", a company already operating in Albania.
- The Bid Evaluation Committee qualified EVN AG as the winner company for this project.
- The contract is under negotiations.

HYDRO POWER PLANT OF SKAVICA

- **Skavica HPP is also a big project**; The installed capacity is 350 MW and the energy production 1,05-1.1 TWh/year.
- Based on the Albanian Concession Law No 9663/2006 , the Consortium TGK Group Italy presented at METE an unsolicited proposal for the construction in form of BOT concession, HPP of Skavica, on Drin River Cascade.
- The Skavica reservoir allows planning the energy production through the optimization of the water recourse use. More electricity, 200-300 GWh, can be produced from the downstream power plants of Fierza, Komani and Vau Dejs .
- The reservoir will be entirely located in Albanian territory;
- Also for this HPP we will develop a private-public-partnership (PPP) arrangement.
- The estimated cost of Investment is up to 550 million Euro.
- We are elaborating the standard documents of the bid procedures and the tender is expected to be launch in November of 2008.

HYDRO POWER PLANT OF SKAVICA



VJOSA RIVER

- Vjosa River is the second largest river system in Albania. Its upper catchments include areas in Greece's Northern Mountains, with high precipitation.
- **Vjosa river** is 272 km long and annual average inflows is about 195 m3/sek
- Until now, the hydroelectric potential has not yet been exploited, except Kalivaci HPP.
- The latest river development study (1990s) was established by our Hydrogeotechnic Institute. **The study defines 8 plants** for the complete exploitation of the Vjosa River, with total capacity about 500 MW and production of 2.2 TWh.

Ministria e Ekonomisë Tregtisë dhe Energjetikës

EXPLOITATION SCHEME OF VJOSA RIVER

Name	Capacity MW	Annual generation GWh	Catchment km²	Mean flow m³/sek
Kaludh	75	200	2370	63
Badelouje	30	140	2780	74
Permet	25	115	2820	75
Kelcyre	35	165	3240	88
Dragot	130	500	5030	144
Kalivac	90	400		
Pocem	50	200	5570	159
Selenice	60	275	5710	163
Sum	495	2155		

NOTE
In 2001 a Concession Agreement BOT was made effective with an Italian group BEECHETTI for financing, engineering, construction, management and transfer of HPP of Kalivaci.

Ministria e Ekonomisë Tregtisë dhe Energjetikës

VJOSA RIVER

Albanian Government using World Bank funds has undertaken a consultant service project for preparing a feasibility study and project definition for the production potential over various rivers in Albania mainly to river Vjosa.

In February 2008 a Bid was opened to select the winning bidder and after the evaluation process the winner was selected. SOGREAH, a French company was selected to carry out the study for the assessment of production potential of Vjosa River.

These days the company sent the Inception Report and the final feasibility study shall be completed by January of 2009.

Ministria e Ekonomisë Tregtisë dhe Energjetikës

INTERCONNECTION LINES PROJECTS UNDER IMPLEMENTATION

- ***Construction of 400 kV line Tirana – Podgorica (KfW financing)***

Is very important line for Albania and the region.

- Contract signed on 25, July 2007
- Contract effective date: 08 November 2007
- Implementation consulting agency: FICHTNER/DECON
- Status of the project: Under implementation
- On-landing and separate agreement already signed
- Duration of the project: 24 months
- Overall project value (Euro): 49.5 million €
- The implementation is going on satisfactory;
- It is foreseen to be put in operation by the end of 2009.

INTERCONNECTION LINES PROJECTS UNDER IMPLEMENTATION

- ***Construction of 400 kV transmisson Line Elbasan 2-Tirana 2. (Italian Government financing)***

- Is part of 400 kV Elbasan-Podgorica.
- Overall project value (Euro): 13 million €;
- Contract signed on 21 February 2008,
- Implementation consulting agency: ELC/CESI
- Duration of the project: 16 months
- Status of the project: Is under implementation and is foreseen to be put in operation by the end of 2009.

Putting into operation of these lines will significantly increase our import capacity.

INTERCONNECTION LINES PROJECTS IN PREPARATION

Construction of the new overhead transmission line 400 kV from the 400/220/110 kV "Tirana 2" substation (Albania) to "Kosovo B" substation

- The feasibility study and environmental study has been conducted by CESI under a World Bank financing
- CESI final result was that the line is feasible and economically highly beneficial..
- In 2008 DECON updated the feasibility study.
- Overall length of the OH line = 238 km
  - 85 km in Kosovo, 153 km in the territory of Albania.
- Preliminary estimated value (DECON) = 59.9 M€
- Expression of interest for financing this Project are made by KfW, EBRD.


THANK YOU
FOR YOUR ATTENTION !
Ministria e Ekonomisë
Tregtisë dhe Energjetikës

Electricity transmission projects in the BSEC region

By Dr. Evangelos Lekatsas (HTSO)

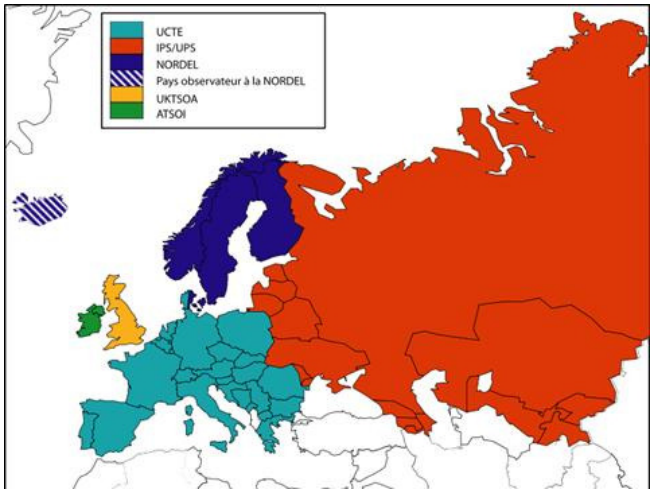
BLACK SEA ENERGY POLICY CONFERENCE
Athens, 8-9th October 2008

ENERGY INVESTMENTS and TRADE OPPORTUNITIES

ELECTRICITY TRANSMISSION PROJECTS IN THE BSEC REGION

Dr. Evangelos Lekatsas and Dr. Ioannis Daskalakis,
Hellenic Transmission System Operator S.A.

HTSO
ΔΕΣΜΗΕ



The Energy Community

Has the task:

- to organize the relations between the Parties,
- to harmonize network access rules,
- to facilitate Cross Border Trading,
- to mitigate congestion problems that impede free trade, and at the same time
- to secure the operation of the interconnected systems and create a legal and economic framework in relation to Energy.

Issues (I)

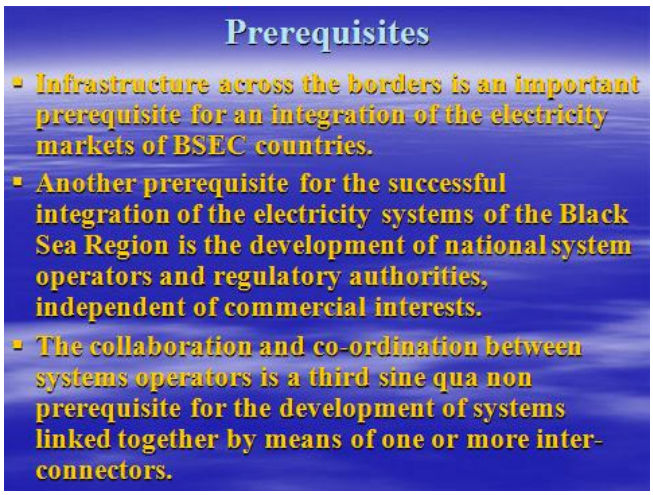
- The BSEC region consists of countries with various national, religious and cultural origins.
- Most countries of the region are going through a transition period that involves structural, political, and economic changes.
- The state owned, vertically integrated utilities covering all stages of power generation and supply has led to the development of national electrical systems with a number of shortcomings, especially with respect to the proper utilization of the investments.
- There are wide variations between the countries in terms of their existing and future internal electricity market structures, the pace at which reform may take place, the changing demand patterns and the fuel supply situation.

Issues (II)

- Retail prices, as set by governments, are far below the cost of new entry.
- The pricing mechanisms adopted are inadequate to encourage long-term investment in new electricity generation capacity.

CONCLUSIONS

It will be a great challenge for the politicians to provide the conditions for consumers to choose their suppliers, and, at the same time to convince them of the need to raise prices up to the level of real costs. The situation is even more difficult in those countries with economies in transition in which the rates of collecting electricity bills are still very low. It is obvious that such obstacles can only be overcome when the economies of the countries converge. And this needs time.



BLACK SEA ENERGY POLICY CONFERENCE

ENERGY INVESTMENTS and TRADE OPPORTUNITIES

Athens, 8-9th October 2008

ELECTRICITY TRANSMISSION PROJECTS IN THE BSEC REGION

by Dr. Evangelos Lekatsas and Dr. Ioannis Daskalakis,
Hellenic Transmission System Operator S.A.

1. General overview

At present, the power systems of South East European (SEE) countries (Albania, Bulgaria, Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia, Greece, Montenegro, Romania, and Serbia including Kosovo), operate in parallel and synchronous mode with the UCTE network.

It is worth to mention here that the power systems of Armenia, Azerbaijan, Georgia, Moldova, Russia and Ukraine belong to the IPS/UPS group of power systems that operate with different standards and independently from UCTE. The IPS/UPS group includes also many more countries such as the Baltic States (Latvia, Lithuania, and Estonia), Belarus, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan.

The Turkish system operates independently from both UCTE and IPS/UPS systems. Turkey has applied to become a member of UCTE and recently a study has been carried out investigating this possibility.

The synchronous interconnection of the IPS/UPS with the UCTE system is a very difficult task that has been investigated by a group of 80 experts from 17 countries from both sides. The size and complexity of such a task have never been mastered before on a worldwide basis. A series of technical studies are needed to asses the conditions under which the synchronous

interconnection of the two systems is feasible without negative impact on their reliability. The use of non-synchronous connections (DC links), a relatively easy to implement, proven, and reliable technology minimizing the influence of connected power systems on each other, should, in our view, be investigated. The connection of two huge power systems, with different generation and network structures, norms and standards, and rules of operation, needs the establishment of a minimum set of technical requirements, organizational structures and procedures, as well as legal agreements. Above all, it is also a delicate political problem.

Because of this many studies and multilateral negotiation procedures are required before any sound and concrete decisions become mature enough, in order to be accepted by all involved parties and be eventually implemented.

For the UCTE-IPS/UPS connection the feasibility study mentioned above has started in 2005 and was completed in April 2008. Following this, detailed connection studies have to be initiated and these could last several more years. **Consequently we do not expect, in the foreseeable future, a full (synchronous, asynchronous or mixed) connection of the UCTE and the IPS/UPS power systems**.

Thus the dream of an **"Electricity market from Lisbon to Vladivostok"** may need time, and maturity to be realized. As some of the BSEC countries are synchronized with the UCTE system where as others are synchronized with the IPS/UPS system, or are operating separately from both (e.g. Turkey), it seems reasonable that a **staged approach** is necessary to be developed in order to strengthen cooperation in the electricity sector.

Bilateral agreements between neighbouring countries to improve or build new interconnecting infrastructure and operate it by islanding a small part of the network of the one country and attaching it to the system of the other country may be a temporary, though not completely efficient, method of cooperation.

There are at least three cases where such a method has already been applied:

- The thermal power station of Burshtyn together with the substation of Mukacevo have been separated (islanded) from the rest of the Ukrainian system and, together with the necessary interconnecting lines, have been attached to the Rossiori substation of the Romanian system and to the Velke Kapusany and Sajoszoged substations of the Hungarian system, thus injecting power to UCTE.

- In Bulgaria, the thermal power station Maritsa Istok 3 has been attached, in the past, to the Turkish power system.

- A similar islanded operation of a part of the Turkish system (in Babaeski) with the Greek system may be applied, following the commissioning in June 2008 of the new interconnection line between the two countries, until the whole Turkish system is finally accepted to operate in full synchronous mode with UCTE.

Regarding the synchronization of the Turkish power system with the UCTE power system we note that the complementary technical studies to that effect have been performed from 11/2005 up to 3/2007. They were followed by the presentation to the UCTE Steering Committee of a catalog of technical measures to be taken by the Turkish TSO. Assuming the Turkish side

applies these measures promptly, a test synchronization period is foreseen before the definitive synchronization. Consequently we can probably expect that the Turkish power system will be synchronously connected to the UCTE power system in a couple of years (~2010) and that the power exchanges with the Turkish power system will take place only within the UCTE power system.

Despite the large number of interconnections between the Balkan countries none operate between a) Albania and the Former Yugoslav Republic of Macedonia, and b) the Former Yugoslav Republic of Macedonia and Bulgaria. This fact impedes the bilateral energy exchanges and thus the development of electricity transactions between the aforementioned countries.

The existing transmission lines and interconnections among the national power systems of the SEE region permit transactions ranging from 250 MW to 1600 MW, depending on the origin, destination, path, and time period. However, they are not always sufficient to cover the respective power transfer needs. Lack of interconnections between the Former Yugoslav Republic of Macedonia with either Albania (Vrutok-Burrel), or Bulgaria (Cervena Mogilla-Stip), is considered to be a serious obstacle limiting trade. One should not omit to mention the importance of the Adriatic interconnection line, the interconnection line Elbasan-Tirana-Podgorica, and the interconnection of the Former Yugoslav Republic of Macedonia with Nis (Serbia). These are some examples of important interconnections within SEE that have to be implemented in order to enhance trade in SEE region.

2. Energy Community

Achieving electricity market integration requires political agreement, as well as technical common understanding of the best ways of interconnection of networks and markets. For this reason, geographically gradual progress in integration across a region appears a pragmatic way to approach these objectives. This idea has led to the creation of what has been called Energy Community in SEE.

As is well known, all the countries from the South Eastern European (SEE) region have agreed upon the constitution of an **Energy Community** in SEE. The Treaty establishing the **Energy Community** was signed on the 25th of October 2005 in Athens and was set in force as of July 1st, 2006.

The Energy Community has as its task to organize the relations between the Parties, to harmonize network access rules, to facilitate Cross Border Trading, to mitigate congestion problems that impede free trade, and at the same time to secure the operation of the interconnected systems and create a legal and economic framework in relation to **Energy**. The main goals are to create a stable and regulatory market framework capable of attracting investment; to create a single regulatory space for trade; to enhance security of supply; to improve the environmental situation and to develop electricity and gas market competition on a broader geographical scale in accordance with EU Directives 2003/54 and 2003/55 for electricity and gas respectively.

The common objective of the Energy Community Treaty parties is to stimulate and underpin the secure supply of energy, especially electricity and natural gas, to their citizens, and to secure economic growth and investment in South East Europe by improving the availability, efficiency and reliability of network energy sources at reasonable cost. The parties seek to

achieve this objective through promoting greater regional integration, the creation of a compatible regional energy market, competition and increased trade within the SEE region and between it and the European Union internal energy market. The ultimate aim is to have a single regulatory space for electricity and natural gas trade in the region that will help as a prototype for the whole EU in its way towards the ultimate goal of creating a single Internal Electricity Market.

3. Obstacles

However, the development of a regional electricity market is a project far more complicated than the liberalization of a national electricity market. We must not forget that in EU, e.g., it took more than 10 years of hard negotiations between the Member States in order to adopt the initial Directive 96/92 for the establishment of the Internal Electricity Market in Europe. The project is even more difficult and challenging in the region of the BSEC countries, for, in this case, one must take into account the following important issues:

- The BSEC region consists of countries with various national, religious and cultural origins.
- Most countries of the region are going through a transition period that involves structural, political, and economic changes.
- The state owned, vertically integrated utilities covering all stages of power generation and supply has led to the development of national electrical systems with a number of shortcomings, especially with respect to the proper utilization of the investments.
- There are wide variations between the countries in terms of their existing and future internal electricity market structures, the pace at which reform may take place, the changing demand patterns and the fuel supply situation. As a starting point, it can not be assumed that all countries will have the same need or desire to trade in a similar manner at the time when a regional market is initiated. It may therefore be desirable to establish a market structure that has the flexibility to cope with the differing possibilities to trade. There are a number of possible market designs which may serve as models for consideration by the countries. However, the design of the regional market will be limited by the evolving structures of the individual markets and it is reasonable to presume that the medium term solution will be based on a much more restricted approach to regional trade.

4. A staged approach

The establishment of a regional market in SEE is expected to have immediate positive effects in system reliability, economies of scale in planning, constructing and operating generation and transmission systems. In addition to these immediate benefits the generation of a regional market will exercise competitive pressures on existing systems, increase their efficiency and encourage inflow of private capital.

An essential feature of the regional market design should be to acknowledge that flexibility might be required to accommodate the approaches taken in each country in restructuring their electric systems and in the design of their own markets. The regional market should ideally allow each country to have maximum flexibility in determining what capacity and energy it may wish to buy or sell and the type of transaction that it may wish to use. An efficient market design should allow market participants a maximum choice in trading opportunities. Therefore,

in developing options for a regional market design it is helpful to understand the type of transactions that would be possible between national systems.

There are many differences among the national power systems of the region, in terms of size, power mix and even load profiles. The BSEC countries are also characterized by a number of different, frequently separated, electricity systems with "markets" in various stages of early development. In some cases the pricing mechanisms adopted are inadequate to encourage long-term investment in new electricity generation capacity. In most cases this is due to the fact that retail prices, as set by governments, are far below the cost of new entry. It will be a great challenge for the politicians to provide the conditions for consumers to choose their suppliers, and, at the same time to convince them of the need to raise prices up to the level of real costs. The situation is even more difficult in those countries with economies in transition in which the rates of collecting electricity bills are still very low. It is obvious that such obstacles can only be overcome when the economies of the countries converge. And this needs time.

Infrastructure across the borders is an important prerequisite for an integration of the electricity markets of BSEC countries. If there is a need for developing infrastructures, investments should be carried out in a co-ordinated way and follow market integration.
Improving the infrastructure can increase the security of supply and contribute to a better environment and increased competitiveness. For these reasons supporting of investments in infrastructure is sine qua non.

Another prerequisite for the successful integration of the electricity systems of the Black Sea Region is the development of national system operators and regulatory authorities, independent of commercial interests. The operation of the system is one of the key functions in a common electricity market. The system operators are responsible for the security of supply and the reliability and efficiency of the electricity system in a given area and its inter-connectors with other systems.

The collaboration and co-ordination between systems operators is a third sine qua non prerequisite for the development of systems linked together by means of one or more inter-connectors.

BSEC_8-9.10.2008.doc
HTSO, October 2008

Opening the Eurasia Gas Corridor

By Mr. Naske Afezolli (TAP AG)

Opening the Eurasia Gas Corridor

Trans Adriatic Pipeline

Energy Investments and Trade Opportunities
8 – 9 October 2008 Athens, Greece

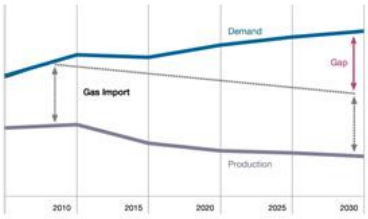
Naske Afezolli
Head of Gas & Power East, EGL AG

EGL NETWORKING ENERGIES

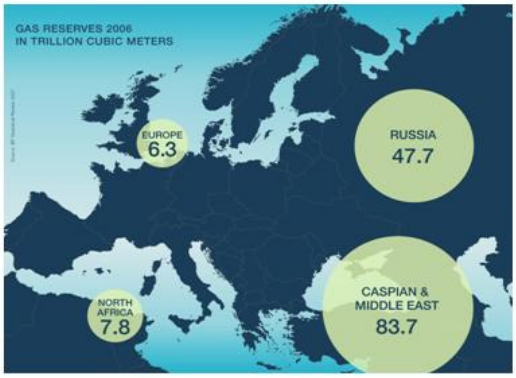
StatoilHydro

European Gas Demand

- European natural gas demand will likely increase continuously until 2030
- At the same time, European indigenous production is declining
- Additional gas imports will be needed to cover Europe's needs



Gas Reserves



TAP - The Missing Link

TAP is opening the Eurasia gas corridor

Pipeline Route

- TAP shall connect the existing national grids in Greece and Italy
- TAP is the shortest pipeline link between Greece and Italy
- TAP will be the first natural gas pipeline crossing Energy Community through Albania

Diversification and Security of Supply

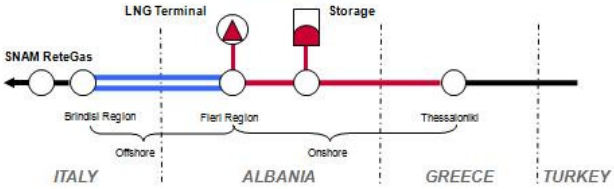
- TAP opens the access to new gas supply sources in the Caspian and Middle Eastern region
- TAP will add gas storage in Albania to provide security of supply and flexibility for long distance gas transport
- TAP will make a considerable contribution to the
  - diversification of gas supply and
  - security of supply

  for the EU and SEE gas markets
- TAP strengthens Greece's position as a natural gas hub

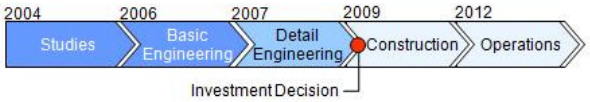
TAP Rationale

- TAP is the shortest pipeline link between Greece and Italy
- TAP opens the Eurasia gas corridor
- TAP joint-venture partners already have access to gas supply sources in the Caspian and Middle Eastern region
- TAP will make a considerable contribution to the diversification of gas supply and security of supply for the European gas market
- TAP strengthens the position of Greece as a transit country
- TAP goes directly through the Energy Community thus saving an additional link

Integrated Project Elements



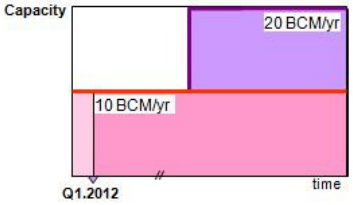
Project Plan



- Studies and the Basic Engineering were concluded in 2007
- TAP is now in the Front-End Engineering Design stage
- TAP project final investment decision is expected in the 2nd half of 2009
- The construction of the pipeline will take more than two years
- The pipeline is expected to be operational by 2012

Transportation Capacity

- TAP shall have an initial annual capacity of 10 billion cubic metres
- TAP provides enough energy to supply 3 million households
- The system is designed to be expandable to 20 billion cubic metres a year



TAP contributes to SEE Energy Community

- TAP provides sustainable energy solution for the Energy Community
  - Therefore, sustainable solution for economic growth
    - Finally, contributing to political stability

- TAP is the only major international and regional project passing through one of the contractual countries of Energy Community (Albania)
- TAP enables the re-gasification of a European region short on energy
- TAP contributes to energy security in Albania and SEE
- TAP will secure significant employment during construction and operation

Newest Development

Greece

- TAP AG, the project company, on June 13, 2008 filed a petition with the Greek Regulatory Authority for Energy, RAE, for the design, construction, and ownership of an INGS in line with Greek legislation
- Both TAP developers applied to DESFA for long term transit rights
- TAP is looking forward to fostering a close partnership with Greek stakeholders to accomplish this significant project with European Union and Southeast Europe energy policy dimensions

Italy

- Support in the Region of Puglia, being the landing point for TAP
- Geographical tie-in point agreed with SNAM Rete Gas, tie-in contract signed 12.05.08

Albania

- New gas law approved
- The content in full compliance with the EU gas directive

Law on gas sector introduced 30 June 2008

Selected Chapters	Content
General Provisions	Law applicable for the entire gas value chain
Policies	METE responsible to establish policies in accordance with EU Directives
Regulation	Regulator (ERE) responsible to approve all applicable licenses and to set access tariffs
Natural Gas Activities	TPA Exemption
Property Rights	Expropriation
Transition	Grandfathering rights for all applications under previous laws

Find out more about TAP at:

www.trans-adriatic-pipeline.com

TAP upside potential

TAP and IAP together would make half of the ECR (Energy Community Ring)

THANK YOU

FOR YOUR ATTENTION!

The Fourth Corridor Puzzle

By Mr. Spyros Paleoyannis (IENE)

INTERNATIONAL BLACK SEA ENERGY POLICY CONFERENCE

"ENERGY INVESTMENTS AND TRADE OPPORTUNITIES"

Athens, 8th & 9th October 2008

"The Fourth Corridor Puzzle"

A lot of pipeline projects, but where the gas will come from and flow to?

Spiros Paleoyannis
Deputy Chairman IENE

INSTITUTE OF ENERGY
FOR SOUTH-EAST EUROPE

Presentation Contents

- **Current challenges and business dynamics in the European gas industry**
- **The future of European gas**
- **Uncertainties related to Russian gas production and exports and the European gas supply dilemma**
- **The "fourth corridor" idea**
- **The today's "fourth corridor" puzzle**
- **Conclusions**

Current challenges and business dynamics in the European gas industry

- Unprecedented macroeconomic, social and geopolitical trends and uncertainties affect decisively all businesses, including business in the energy sector
- The European gas sector in particular faces a number of all new and of paramount importance challenges (and uncertainties):
  - ✓ Issues related to future gas supplies
  - ✓ Security of gas supplies
  - ✓ Environmental protection policies
  - ✓ Long-term investment decisions
  - ✓ Market liberalization and regulatory uncertainties
  - ✓ New business structures and dynamics

The future of European gas

- Gas demand was spectacularly increased in Europe in the last two decades
- All sectors of the economy contributed to gas demand growth, but the main driver was (and will continue to be, at least for the next years) the power generation sector
- Gas demand growth rates forecasts vary, depending on the scenarios and the assumptions used by the analysts, as well as on the time horizon looking at
- However, even for the low demand scenarios, significant investments are needed across the entire gas supply chain in order the projected gas demand in Europe to be covered

Russian gas uncertainties and the European gas supply dilemma

- Given the above reality, Europe is currently facing a great dilemma about its future gas supplies
- On the one hand, Europe knows that Russia has a 40-year history of reliability in gas exports, but worries about a further increase in its imports dependence on Russian gas, simply because such an increase is not consistent with its security of supply
- On the other hand, Europe realizes that at least for the next five years, there is no realistic and secured alternative for massive gas imports from other producing countries located in Central Asia, Middle East etc.

Russian gas uncertainties and the European gas supply dilemma

- In addition, Europe worries about Russia's ability to export enough gas in the years to come
- Gas production at Russia's traditional "big three" gas fields is rapidly "coming off the plateau" and "Gas Bridge" strategy seems to reach to its limits
- Russia should urgently proceed with huge upstream and other relevant investments in the Yamal Peninsula and in the Barents Sea, in order to have new gas for both domestic needs and exports beyond 2011-2012
- Last but not least, Europe concerns about Gazprom's by pass-and-develop strategy, because prevents its efforts to diversify gas supply sources and routes

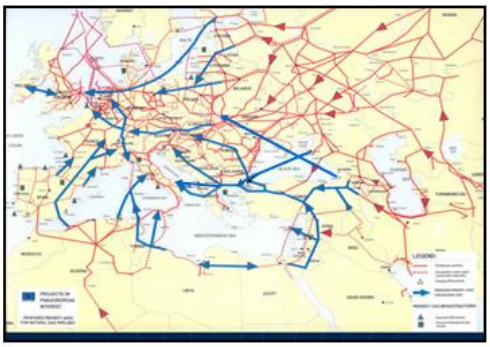
The "fourth corridor" idea

- The idea of establishing a new transport corridor for European gas supplies (the so-called "fourth corridor") from the Caspian region and the Middle East countries has been around for more than a decade
- It's basic concept is to supply gas to Europe via Turkey, not from a single gas producing country, but from several gas suppliers located in the above broader area
- European Union and USA strongly support the idea, because it could straighten Europe's energy security, diversify its gas supply sources and routes, and reduce its dependence on Russian gas

The "fourth corridor" idea

- Similarly, many SE European countries are strongly interested for the "fourth corridor", since, apart from obvious implications on regional security of gas supply, could upgrade the region's role and attract international interest and investments
- To this end, a considerable number of gas supply pipeline projects (with a total capacity of nearly 80 bcm per year), targeting or crossing mainly SE Europe, have been proposed
- However, although many important developments were made during the last five years, the final shape of the "fourth corridor" and gas flows from alternative sources are still clouded

The "fourth corridor" idea



The today's "fourth corridor" puzzle

Geopolitical tensions and uncertainties in the area

- Geopolitical tensions, political and ethnic instability and domestic security are always crucial factors for any gas pipeline project
- In our case, we witness an ongoing and long-standing intense political and diplomatic competition between USA and Russia to increase their influence in certain former CIS countries and secure "control" in the area's gas producing countries and transiting routes as well
- This political and energy "war", creates a very unstable business environment for project's investors and lenders and may threaten Europe's efforts to diversify its gas supply sources and routes

The today's "fourth corridor" puzzle

Gas availability from alternative sources

- Gas availability from alternative sources is probably the most critical factor for the future of nearly all the "fourth corridor" pipeline projects
- Gas supplies from Iran (the world's second richest country in gas reserves) are unlikely to occur in the near future, due to country's political isolation and USA sanctions, as well as due to lack of huge investments in both upstream and export pipeline infrastructure. The same roughly apply also for Iraqi and Egyptian gas
- The perspective for Turkmen and Uzbek gas flows to Europe, through the much discussed Trans Caspian Pipeline, remains still questionable and uncertain, especially after the recent Russia's preempt gas deal

The today's "fourth corridor" puzzle

Gas availability from alternative sources (cont)

- The only realistic option for European gas supplies seems to be the Azeri gas, not only because such a perspective gathers strong political support from EU and USA, but also because Shah Deniz Phase I gas production started and deliveries to Turkey and Greece commenced last year
- However, since all the Shah Deniz Phase I gas quantities (8.6 bcm per year) are either used in Azerbaijan or exported to Georgia and Turkey, Europe and "fourth corridor" pipeline projects should wait, till the time that Phase II gas production will come on stream (in 2013 the earliest).

The today's "fourth corridor" puzzle

Gas availability from alternative sources (cont)

- At present, the gas outlook for Azerbaijan is still clouded and thus difficult to accurately predict how much gas would be produced in Shah Deniz Phase II and what quantities would be available for regional pipelines
- Worth to mention here, that many voices put these quantities at only 8-10 bcm per year, while we cannot ignore the existing constrains in the SCP export capacity
- Under such circumstance:
  - which pipeline project will manage to secure these limited gas supplies from Azerbaijan?
  - Or, even worse, will we witness once again another deal, this time between Russia and Azerbaijan and gas will be purchased "at market prices" by Gazprom?

The today's "fourth corridor" puzzle

Competition among gas supply projects

- Interstate gas pipeline projects have to compete with other (existing or new) gas pipelines and LNG facilities in terms of non-gas costs (transportation costs and transit fees)
- Consequently, gas pipelines may be exposed in serious and unexpected risks due to possible deviations in the assumed gas transit volumes, which are necessary to support projects development and operational costs
- These factors of competition have became more critical in nowadays, since construction and material costs in pipeline projects rose substantially during the last years (more than 70% compared with 2000 costs, according to CERA/IHS indexes).

The today's "fourth corridor" puzzle

Competition among gas supply projects (cont)

- As a result, even if future gas demand in Europe justifies nearly all the regional pipeline projects under discussion, Nabucco and South Stream will unavoidable compete each other, not only due to their completely different gas supply sources, but also because they target the same markets
- Similarly, South Stream and IGI will compete for gas transit volumes to Italy, since their sponsors (ENI and Edison respectively) are simultaneously market competitors in the domestic market, and thus competitive pressures in gas trading activities will move backwards to pipelines

The today's "fourth corridor" puzzle

Turkey's gas transit uncertainties

- Due to its geographic position Turkey is a key transit player for non Russian gas
- The increasing gas demand in the domestic market (36 bcm in 2007 from 18 bcm in 2002), reduces rapidly BOTAS transportation system's spare capacity and limits gas transit possibilities to Europe
- Today, only 12-13 bcm of gas per year could be transited via the Turkish system
- Without new significant investment and expansion will not be possible to satisfy both the growing domestic gas demand and supplies to Europe after 4-5 years
- As a consequence, regional pipelines projects are currently obliged to compete for limited Turkish transit capacity

The today's "fourth corridor" puzzle

The future of Russian-Turkish gas relationships

- Probably one of the most important factors for the future of all the "fourth corridor" pipelines projects
- The southern corridor idea cannot be translated into a reality without Turkey's crucial role and, at the same time, such a perspective could directly be affected by relevant Russia's strategic choices
- Turkey is increasingly rely on Russian gas imports (65% of country's gas imports in 2007)
- However, during the last five years Turkey systematically worked to promote the east-to-west corridor and its gas transit and trading strategy

The today's "fourth corridor" puzzle

The future of Russian-Turkish gas relationships (cont)

- Since South Stream could in the one or the other way affect Turkey's role as a key transit player for non-Russian gas:
  - Will Turkey renew its 6 bcm per year contract with Russia, which will expire in the near future (2012)?
  - Will Russia continue to apply the last years' strategy and insist in blocking or at least limiting the east-west flow of non Russian gas via Turkey?
  - Or Russia will partially revise its strategy and leave some room for limited gas transit through Turkey, mainly from Azerbaijan and Iran, but not from Turkmenistan, Uzbekistan and Kazakhstan?

Conclusions

- Europe will need more gas from both traditional and alternative sources to fuel its socio-economic development, at least in the short and medium-term
- To this end, significant new gas supply infrastructure (upstream and midstream) should be timely promoted, in a way that balances Europe's wariness for increased dependence on Russian gas and its interests to gain access to alternative gas sources
- For the time being, gas availability and many other barriers/uncertainties prevent "fourth corridor" pipelines sponsors to make their final investment decisions

Conclusions

- The soonest these barriers and uncertainties will be overcome, the easiest Europe will achieve its strategic objectives to secure sufficient gas quantities from alternative sources and pipelines
- Otherwise, Europe will be forced in the near future to find once again a "modus vivendi" with Russia for additional gas supplies, as it was happened for many decades in the past

INSTITUTE OF ENERGY
FOR SOUTH-EAST EUROPE

THANK YOU FOR YOUR ATTENTION

Armenia – Policy trends in the areas of renewables and energy efficiency

By Mr. Levon Vardanyan (Armenian Ministry of Energy and Natural Resources)

Армения
Тенденции политики в области возобновляемой энергетики и энергоэффективности

Основным принципом энергетической стратегии Министерства энергетики и природных ресурсов Армении является обеспечение устойчивого развития энергетики, руководствуясь тенденциями развития экономики, перспективами расширения регионального сотрудничества и с учетом накопленного в энергетическом секторе опыта, а также с максимальным применением энергоэффективных технологий как в самой энергетической отрасли, так и в других отраслях экономики.

Целью принятого в 2004г. Закона РА «Об энергосбережении и возобновляемой энергетике» являлась формулировка и утверждение принципов государственной политики в реализации энергосбережения и развитии возобновляемой энергетики направленных на:

- укрепление экономической и энергетической независимости Республики Армения;
- повышение степени надежности энергосистемы РА;
- создание новых производств и организация услуг содействующих развитию энергосбережения и возобновляемой энергетики;
- уменьшение последствий техногенного влияния на окружающую среду и здоровье человека.

В 2005 году Правительством РА одобрена «Стратегия развития энергетической отрасли до 2025-30 гг. в контексте устойчивого развития экономики Республики Армения». В основу последней заложено обеспечение разумного уровня энергетической безопасности страны. Армения, преодолевшая глубокий энергетический кризис, на практике испытала последствия утраты энергетической безопасности.

Армения во многом зависит от импортируемых энергоносителей. Единственным производимым в стране первичным видом энергии является электроэнергия, вырабатываемая гидроэлектростанциями и одной атомной электростанцией на долю которых приходится порядка 25% общего объема источников первичной энергии. В этой связи энергетическая стратегия Армении предусматривает как обеспечение поставок топливно-энергетических ресурсов из-за рубежа, так и дальнейшее развитие потенциала собственных возобновляемых энергоресурсов.

В настоящее время из всего энергопотенциала ВИЭ в Армении в основном используются гидроресурсы и за их счет в среднем около 30% электроэнергии вырабатывается на гидроэлектростанциях.

По экспертным оценкам полное освоение потенциала энергоресурсов ВИЭ позволит покрыть более половины сегодняшних потребностей в электроэнергии и значительную часть - в тепловой энергии.

Основная часть возобновлемых источников энергии приходится на долю **гидроэнергетики.** Экономически обоснованный гидропотенциал составляет 3,5

млрд.кВтч. Если учесть, что 1,5 млрд. кВтч уже освоено, то за счет строительства новых ГЭС можно получить дополнительно еще до 2 млрд.кВтч.

В результате новой политики государства в области энергетики частными инвесторами уже построены и действуют 75 малых ГЭС обшей мощностью порядка 105 МВт и суммарной расчетной выработкой электроэнергии – 380 млн. кВтч. Планами развития гидроэнергетики предусмотрено освоение всего экономического гидропотенциала Армении.

В ближайшие 15-20 лет намечено построить три крупных ГЭС общей мощностью около 275 МВт и более 100 малых ГЭС.

Ветровой режим Армении оценивается достаточно высоко. Анализ многолетней фондовой метеоинформации и последние исследования позволяют оценить технически и экономически обоснованный потенциал в 1,1 ТВтч. Согласно «Атласу ветроэнергетических ресурсов Армении» ветроэнергетический потенциал страны достаточен для строительства ветроэлектростанций общей мощностью 450 МВт.

На Пушкинском перевале Армении, в качестве пилотного проекта, построена и эксплуатируется ВЭС мощностью 2,6 МВт с перспективой расширения до 20 МВт, в ближайшие 5 лет в Армении предполагается построить ВЭС в районе Зода (50 МВт) и Карахачского перевала (90 МВт), расширяется проведение мониторинговых работ на других перспективных площадках.

Армения относится к странам с высоким потенциалом **солнечной энергии**.

Среднегодовое значение притока солнечной энергии на 1м^2 горизонтальной поверхности составляет 1720 кВтч/м^2 (средне-европейское – около 1000 кВтч/м^2). Доля прямого излучения по всей территории в годовом разрезе тоже значительна - 65-70 %, что весьма примечательно с точки зрения применения фокусирующих концентраторов солнечной энергии. Освоение потенциала солнечной энергии развивается в Армении в основном по двум направлениям: изготовление и установка панелей фотоэлектрических преобразователей, и изготовление и установка плоских солнечных коллекторов для нагрева воды.

Первое направление пока не получило достаточного развития из-за высокой стоимости фотоэлектрических преобразователей. Однако по отдельным заказам такие преобразователи изготавливаются с единичной мощностью в пределах 5 кВт.

Второе направление – использование солнечных коллекторов тепла – развивается довольно успешно. Уже изготовлено и установлено более 500 м^2 солнечных колекторов.

Улучшение экономической ситуации и большой потенциал солнечной энергии стимулируют неуклонный рост числа используемых солнечных коллекторов и позволяют прогнозировать на ближайшие 15-20 лет наличие у 3-5 % населения таких коллекторов.

Армения обладает значительным потенциалом **геотермальной** энергии, но ее применение в настоящее время ограничено в основном использованием в курортных и лечебных учреждениях, т.к. до настощего времени обнаружены в основном низкотемпературные (с температурой ниже 100^0 С) геотермальные ресурсы. Однако, согласно результатам проведенных исследований есть серьезные основания предполагать наличие источников геотермальной энергии с температурой воды около 215^{0}С на глубине 1600-1700 м на юге Армении.

Начато и расширяется использование **биомассы** для производства биогаза. В 2002-2003 г.г. построены 2 биогазовые установки – одна с объемом метан-танка 50м^3 , с перспективной расширения до 3000 м^3, вторая – 25 м^3. Суммарный объем газа, который можно было бы получить на базе крупных животноводческих хазяйств и предприятия «Аэрация» по сегодняшним оценкам превышает 100.000 м^3 в сутки.

В Армении создано необходимое правовое поле для успешного развития ВИЭ. Законом об энергетике гарантируется покупка на внутреннем рынке всей электроэнергии, выработанной электростанцией использующей ВИЭ, с момента получения лицензии на деятельность. Комиссия по регулированию общественных услуг формирует тарифную политику, которая также способствует привлечению инвестиций в развитие возобновляемой энергетики. Комиссией установлены долгосрочные тарифы для малых ГЭС, построенных на естественных водотоках, для ветроэлектростанций и на электроэнергию, производимую на основе биогаза, полученного из твердых отходов.

Принятым в 2004 году Законом РА «Об энергосбережении и возобновляемой энергетике» были определены основные направления государственной политики по энергосбережению, в том числе:

- разработка, принятие и реализация государственных (национальных, целевых) программ по энергосбережению,
- обязательное включение требований по энергосбережению в государственные программы развития отраслей экономики РА,
- разработка и внедрение стандартов по энергосбережению и энергоэффективности,
- создание системы обеспечивающей проведение энергетической экспертизы проектов строящихся объектов, на эффективное использование энергоресурсов,
- оказание финансового содействия проектам и программам по энергоэффективности,
- организация обучения, содействие научно-техническому прогрессу, информированности и рекламе с целью развития энергоэффективности,
- содействие международному сотрудничеству в реализации энергоэффективных проектов.

Государственная политика проводимая в области энергосбережения основывается на принципе добровольности участия вовлеченных в эту деятельность сторон. Государственные структуры не несут каких либо контрольных и надзорных функций. Намечено применение только экономических механизмов стимулирования.

В 2007 году Правительством Армении была одобрена «Национальная Программа Энергосбережения», которая определила основные цели энергосбережения, в том числе и в количественном выражении как для энергетической отрасли, так и для других отраслей экономики.

В соответствии с этим документом:

Первым приоритетным направлением в области энергетической эффективности является промышленный сектор который потребляет 40% всех видов энергоносителей, а среди отраслей промышленности: электроэнергетика, горнодобывающая, химическая и строительных материалов.

Вторым приоритетным направлением является транспорт, потребляющий 24% всех видов энергоносителей, с учетом ежегодных темпов увеличения его количества, степени его отрицательного влияния на окружающую среду и количества выбрасываемых им в воздух вредных веществ и парниковых газов. Актуальным видится государственное содействие процессу перевода автотранспорта на альтернативные виды моторного топлива (природный и жидкий газ, биогаз), стихийно происходящим сегодня в Армении.

Третьим приоритетным направлением видится жилищно-бытовой сектор, потребляющий 15% всех видов энергоносителей. Несмотря на ожидаемый и возможный большой эффект, внедрение энергосберегающих мероприятий затруднено из-за требуемых больших объемов капиталовложений в этот сектор и социальной несостоятельностью населения.

Четвертым приоритетным направлением является сельское хозяйство потребляющее 4% всех видов топливно-энергетических ресурсов. Внедрение мероприятий затруднено из-за отсутствия достаточных средств у сельских жителей, а также отсутствие высококвалифицированных специалистов в перерабатывающей промышленности продукции сельского хозяйства.

Правительством РА совместно со Всемирным Банком, Европейским Банком Реконструкции и Развития, Глобальным Экологическим Фондом ООН и благотворительным Фондом Кафесджян, учрежден Фонд Энергосбережения и Возобновляемой Энергетики, Совет Учредителей которого возглавляет Министр энергетики и природных ресурсов РА. Первоначально средства фонда направляются на внедрение энергоэффективных технологий в восстанавливаемые системы теплоснабжения многоквартирных жилых зданий и школ, на исследование потенциала различных видов возобновляемых источников энергии, на строительство малых гидроэлектростанций. Средства выделяемые Фондом будут возобновлятся за счет разумной процентной ставки возврата кредитов и, со временем, ожидается рост объема финансовых средств направляемых на внедрение энергосбережения и развитие возобновляемой энергетики.

В настоящее время деятельность в области энергосбережения и на улучшение показателей энергоэффективности в экономике Армении проводится хозяйствующими субъектами самостоятельно и развивается следуя законам конкуренции в условиях рыночной экономики. Для содействия ускорению и углублению этих процессов Правительством РА должны быть предложены действенные меры экономического стимулирования в соответствии с положениями Закона РА «Об энергосбережении и возобновляемой энергетике».

Renewable Energy Sources & Energy Efficiency in Cyprus

By Mr. Solon Kassinis (Cypriot Ministry of Commerce, Industry and Tourism)

Black Sea Energy Policy Conference
Energy Investments & Trade Opportunities
FP6-PROMITHEAS-2
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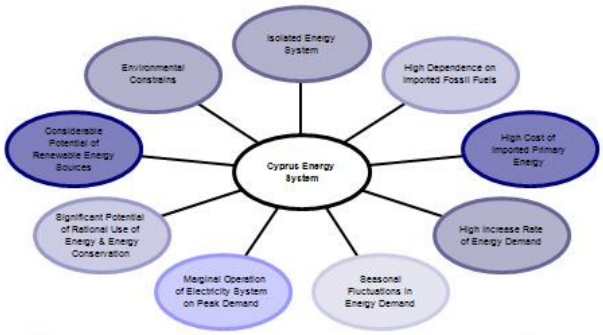
Athens, Greece

Renewable Energy Sources & Energy Efficiency in Cyprus

Solon Kassinis
Director of Energy Service
Ministry of Commerce, Industry and Tourism
Republic of Cyprus

Energy System of Cyprus – General Overview



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Isolated Energy System

- No oil or gas pipelines interconnections
- No existence of electricity interconnections with other countries

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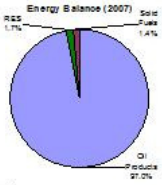
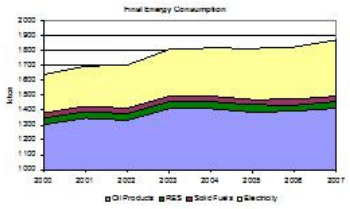
High Energy Dependence

- Primary Energy Consumption (2007): 2660 ktoe
  - Oil Products: 2580 ktoe
  - RES: 44.8 ktoe
  - Solid Fuels: 36.2 ktoe
- Final Energy Consumption (2007): 1881 ktoe





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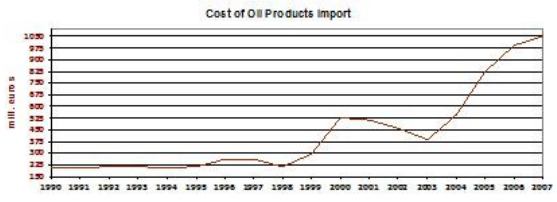
High Cost of Energy Supply

- In 2007, the energy imports cost raised to 1.05 trillion euros, which corresponds to 16.7% of the country's total imports
- In 2007, the energy imports cost was equivalent to 97% of the country's total export earnings



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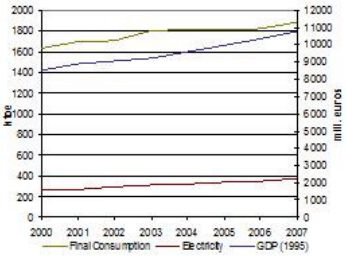
High Increase Rate for Energy Demand

- 6.5% annual increase in electricity consumption for the period 2000-2007
- 2.1% annual increase in final consumption for the period 2000-2007
- 3.7% annual increase in national GDP for the period 2000-2007



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Cyprus Energy Policy – Main Objectives

Adequate, Secure, Clean and Cost-Effective Energy Supply

- Enhancement the security of energy supply:
  - Diversification of energy sources
  - Improving the energy infrastructure
- Decoupling the economic growth from energy use
- Promoting the use of renewable energy sources
- Promoting the efficient use of energy and energy conservation
- Deregulation the energy sector
- Integration of the environmental, economic and social policies in the context of sustainable development

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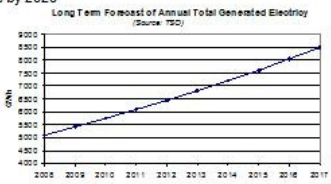
RES Development in Cyprus – Challenges

- Lack of indigenous conventional energy sources
- Almost entirely energy dependent country
- Pressure on the national economy due to the rise in international oil prices
- 7.4% estimated annual increase in electricity generation for the period 2008-2017
- National indicative target (2001/77/EC): Increase in electricity generation from RES, to reach 6% of the final electricity consumption in 2010
- EU New Energy Policy:
  - Legally binding target for Cyprus, 13% RES contribution to the final energy consumption by 2020
  - Increase the share of biofuels in overall transport petrol and diesel consumption to 10% by 2020



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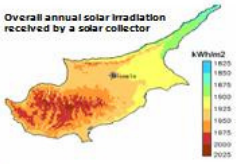
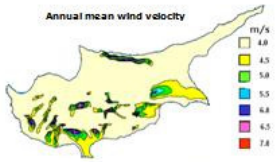
RES Potential in Cyprus

- High solar potential with mean daily sunshine from 9.8 to 14.5 hours
- Available wind potential which can be exploited (some areas with mean wind velocity 5-6m/s, while few areas with 7m/s)
- Biomass exploitation refers to a significant amount of agricultural residues and biogas potential





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RES – Legislative Framework

- Legislative Framework for RES was enacted in 2003
  - A Special Fund has been created aiming at support of RES investments in Cyprus. The revenues of this fund are coming from the consumers paying an additional tax of €0.0022/kWh
- Procedures for licensing and interconnecting wind and photovoltaic installations to the national grid have been specified
- Integrated land planning policy for large RES developments
- Promotion of Biofuels for transport
- Establishment of the Cyprus Energy Regulatory Authority (CERA)
- Establishment of the Transmission System Operator (TSO)

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Energy Efficiency – Policies and Measures

- National Energy Efficiency Action Plan has been adopted in July 2007 in conformity with EU Directive on Energy Services (2006/32/EC)
  - The target (above requirements) consists to 10% by 2016
  - It will be reached by applying cost effective energy efficiency improvement measures and domestic RES
  - Priorities are buildings, transport and industry
- Buildings:
  - Implementation of the energy performance buildings directive
  - Regulations for minimum energy efficiency requirements for new buildings have been enforced since 23/11/07
  - For existing buildings the Government operates a financial support scheme providing grants and subsidies for energy efficiency investments:
    - thermal insulation, PV, geothermal, solar thermal
  - For the tertiary sector grants are given for any technology which satisfies the 10% savings criterion
  - CFL lamps: Cyprus Government will provide 6 lamps for every household

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Energy Efficiency – Policies and Measures

- Industry:
  - The sector has shown significant energy efficiency improvement the last 10 years
  - The main tool used for energy savings is the governmental financial support scheme. Emphasis is given to heat recovery, efficient use of electricity, CHP
  - Introduction of natural gas and CCGT technology
- Transport:
  - Governmental support schemes for purchasing of hybrid, electric, FFV, low emissions vehicles (120g CO_2/km)
  - Promotion of clean and efficient vehicles by imposing new tax coefficients based on engine capacity, CO_2 emissions, vehicle technology
  - School buses/Free

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Energy Efficiency – Policies and Measures

- Vasilikos Energy Center - Larnaca Airport Pipeline:
  - Aviation fuel pipeline to replace the present method of transporting fuel via road fuel tank vehicles
- Public Sector:
  - Action Plan in force for the green public procurement. This policy integrates into the procedures environmental and energy efficiency criteria for public purchasing such as vehicles, equipment, buildings etc
  - Awareness raising and education of civil servants on simple measures and behaviour to save energy in the workplace
- Energy Label:
  - Energy labelling for appliances is operating successfully in Cyprus and market surveillance authorities provide data that a minimum 80% are labelled in shops

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Example of Remarkable Energy Saving Projects

Project	Technology	Saving %	Payback Period With Grant (No Grant) Years	Total Grant (Total Investment) €
Hotel	Energy IT system	15	2 (5.2)	41,058 (136,688)
Hotel	Electricity conservation	11.5	2.3 (3.3)	16,338 (54,458)
Hotel	Electricity conservation	15.5	1.9 (2.7)	36,817 (122,722)
Hotel	Electricity conservation	10.5	2.7 (3.8)	9,119 (30,396)
Construction Company	Central solar system	63	4.3 (6.2)	12,473 (41,577)
Hotel	Central solar system	32	6 (8.1)	11,487 (38,290)
Enterprise	Power and electricity conservation	11	2 (3)	30,447 (101,491)
Industry	Electricity conservation with heat recovery	16 electricity 25 heat	6.5 (9.2)	63,094 (210,158)
Industry	Electricity conservation	15	0.9 (1.3)	15,372 (51,241)

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Measures & Policies for the Encouragement of Use of RES

- The allocation of an explicit RES development program
- Financing tools for the support and implementation of RES investments
- The elimination of the administrative barriers that prevent the development of RES
- Measures of raising public awareness

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RES Development Plan – Electricity Generation

	Development of RES Systems (Large Scale RES Installations for Electricity Generation)					Total (MW)
Year	Wind	Solar Thermal	PV	Biomass	Biogas	
2009	0	0	2	1	0	3
2010	100	0	4	1.5	0.5	106
2011	100	0	6	2	1	109
2012	200	50	8	2.5	1.5	262
2013	200	50	10	3	2	265
2014	300	50	12	3.5	2.5	368
2015	300	50	14	4	3	371
2016	300	50	16	4.5	3	373.5
2017	300	50	18	5	3	376
2018	300	50	20	5.5	3	378.5
2019	300	50	22	6	3	381
2020	300	50	24	6	3	383

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RES Development Plan – Biofuels

- Oil marketing companies are obliged to replace a minimum percentage of conventional fuels (gasoline and diesel) with biofuels based on their energy content over the years 2008 to 2010

Year	National Indicative Target %
2008	2.5
2009	2.5
2010	2.5

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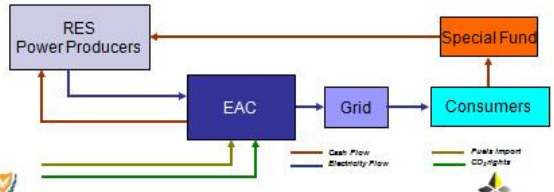
Business Framework for RES

- Support Grant Schemes for RES: *Financial incentives for the materialization of investments for the promotion of renewable energy sources technologies*
  - Implementation of a New Grant Scheme for large scale RES developments in electricity generation
  - Continuation of the existing Grant Scheme for individuals and organizations
- Electricity Authority of Cyprus (EAC) is obliged to buy in priority the RES electricity produced by independent producers at a fixed price based on its marginal power production cost



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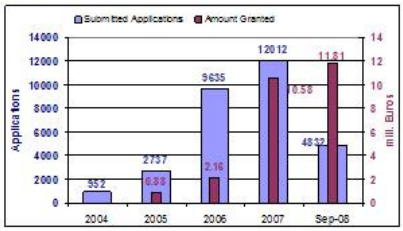
Grant Scheme for RES & Energy Conservation

Main Categories

- Energy conservation:
  - Heat insulation
  - Geothermal heat pump for heating and cooling
  - Hybrid, electric, dual propulsion, low emissions vehicle
- RES:
  - Wind energy systems
  - Solar thermal systems
  - Biomass utilization
  - Photovoltaic systems
- Cogeneration of Electricity – Heating/Cooling



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Elimination of the Administrative Barriers

- The Energy Service of the Ministry of Commerce, Industry and Tourist has undertaken the role of "one stop shop" in order to:
  - expedite the procedures
  - facilitate the materialization of investments for the promotion of alternative energy sources and energy conservation technologies.
- Fair and transparent terms for connection of an electricity producer from RES to the national grid
- Existence of energy market rules which eliminate distortions

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Raising Public Awareness

- Save Energy exhibitions
- Public hearings and RES info days
- School presentations to promote "energy awareness"
- Introduction of awards for the households and industries with the best record in energy saving

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Obstacles - Problems

Wind Farms

- Limited potential for wind energy generation
- Land planning problems (Cyprus, developed tourism country)
- Oppositions of local communities – Problems with acceptance of people
- Limitation on account of system stability

PV

- Low efficiency
- High capital investment (very high initial cost)
- Need very high subsidies in order to be viable

Biofuels

- Limited suitable agricultural land
- Water Scarcity
- High dependence on imports to satisfy the targets (indicative and mandatory targets)
- High cost of imports
- The use of Biofuels produced by genetically modified plants is prohibited
- Various reports suggest that Biofuels can only be used in quantities more than 5% v/v, if the engine is appropriately modified (in the case of Cyprus, more than 500,000 cars would have to be modified or withdrew)
- The cost of cultivation energy crops in Cyprus is prohibited (limited irrigable land and water shortages)

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RES Projects Co-Funded by EU

- Concentrated Solar Power station
- Installation of PV systems in Schools/Governmental Buildings/Army Camps
- Solar Heating/Cooling Systems in Governmental Buildings

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European Programmes

- Intelligent Energy for Europe
- SOLCO: Removal of non-technological barriers to solar cooling technology across southern islands
- PromoScene: Promoting the use of the structural funds and cohesion funds for energy investments in new member states and candidates countries
- SOLATERM: Promotion of solar hot water, heating and cooling systems for complex buildings in the Mediterranean partner countries
- Aqua-Ret: Aquatic renewable energy technologies
- Monitoring of energy demand trends and energy efficiency in the EU

SOLATERM

SOLCO

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Ministry of Commerce, Industry & Tourism

Applied Energy Centre

Experimental testing of:

- solar collectors (100-120 per year) and,
- solar water heating systems (30-40 per year)

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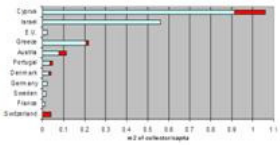
International Recognitions

Cyprus is the world leader in solar water heating with 90% of households, and 53% of hotels having installed solar water heaters. According to the EU study, "Sun in Action", Cyprus has the highest installed solar collector per capita with almost 1m² of solar collector per person



Cyprus has been chosen by IEA (International Energy Agency) and WREN (World Renewable Energy Network) to be winner of "World Renewable Energy Congress Trophy" (2006-2008)

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Thank you for attention!

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Ministry of Commerce, Industry & Tourism

Large Scale Thermoelectrical Cogeneration – 334 MW CHP – Its contribution to enhanced energy efficiency

By Mr. Pantelis Vogiatzis (Endesa Hellas)

ENDESA HELLAS

Black Sea Energy Policy Conference

Energy Investments and Trade Opportunities

Large Scale Thermoelectrical Cogeneration

334 MW CHP

Its contribution to enhanced energy efficiency

Dr. I. N. Desypris
Director Institutions

P. S. Vogiatzis
Project Manager Institutions

8 – 9 October 2008 Athens, Greece

Climate and Energy Targets: A technology and social approach

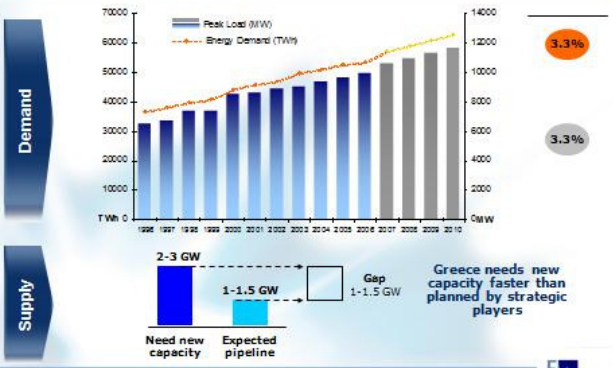
- **Reduction of primary energy consumption and increase of Energy Efficiency**
- **Reduction of greenhouse gases by 20%** compared to 1990 levels (or 30% in case of adoption of a post-Kyoto international agreement)
- **Increase contribution of RES in electricity production by 20%** including a 10 % biofuels target

Climate Action

Are there conventional technologies to reach the targets?

- Long term new technologies are needed for large scale "clean" electricity generation
- Short term available
  - Wind turbines, reaching larger single capacity in future
  - Nuclear, but with social reservations
  - Gas CCGTs, reaching the limits of efficiency
  - Large scale Cogeneration, where heat demand exists, already highly efficient
- CHP offers energy savings ranging between 15-40% when compared to the supply of electricity and heat from conventional power stations and boilers

From 2007-2010, electricity demand is expected to continue to grow while insufficient capacity will be developed …



Cogeneration of Heat and Power

Typical Cogeneration Scheme:

Typical conventional power generation scheme:

EC Policy and CHP Directive

- **EU target to double the electricity share of CHP by 18% until 2010 (COM/97/514) to emissions reduction of 65 Mt CO_2/year by 2010**
- **Directive 2004/8/EC , originally required complete transposition by 21 February 2006 (but delayed because of comitology)**
- Following January 2008 EU targets, Germany,Spain, UK announced enhancing measures for CHP electricity to the system

The largest SEE Thermoelectrical CHP plant is in Greece:
334 MWe CHP Plant at St. Nicholas, Viotia

334 MW CHP Plant, St. Nicholas

- Largest high-efficiency CHP plant in South Eastern Europe
- Investment of more than 200 million Euros by Aluminium S.A. under Mytilineos Holdings management
- EPC Contractor METKA S.A., high quality construction completed on time
- Ownership and operation by Endesa Hellas S.A.
- To supply all necessary steam for the alumina plant of Aluminium S.A. and replace fuel oil used for that purpose

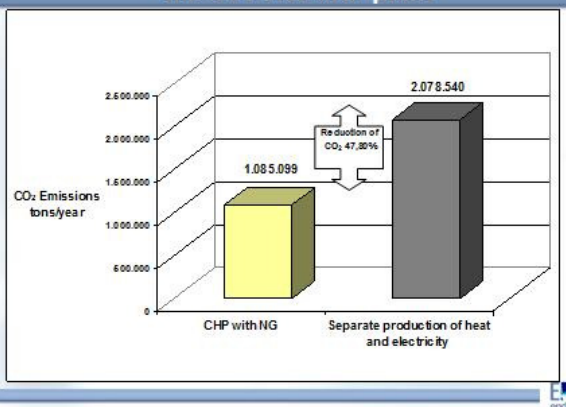
334 MW CHP Plant, St. Nicholas

- Two General Electric high-efficiency gas turbines / power generator units (9E/PG171E)
- One steam turbine / power generator unit, ALSTOM heat recovery systems
- The steam turbine and each gas turbine are connected to a local sub-station that will be connected to the grid (150 kV).
- Natural gas pipeline ready on time by DESFA, HV interconnection completed and tested
- Testing almost complete, target for commercial operation in mid-October 2008

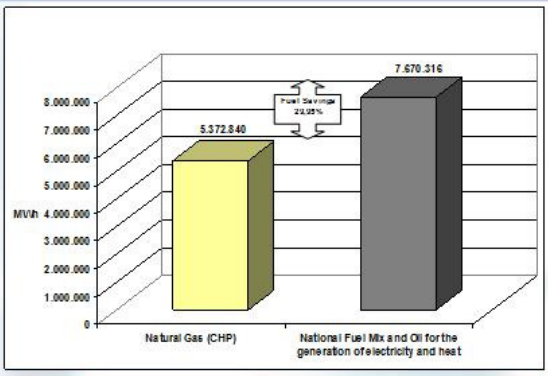
334 MW CHP Plant: Fact sheet

- Full operation achieves primary energy savings of **12%-15%** when compared to the separate electrical and thermal processes.
- Reduction of the annual consumption of oil fuel by **160,000 tons** for the steam production process
- Reduction of CO_2 emissions by at least **1.25 million tons/year** at national level to the benefit of the country
- Continuous efficient energy supply on competitive terms, is expected to produce **2,719 GWhe** and **1,760 GWhth** annually with an annual NG consumption of **510 million Nm^3**

Reduction in CO_2 Emissions from the operation of the 334 MW CHP plant



Fuel Savings from the Operation of the CHP Plant



Barriers to cogeneration admitted by EU

EC Communication COM (97) 514

- "Many of the important barriers to the development of CHP in Europe result from the relationship between cogenerators and electricity production utilities."
- "Market dominance of existing utilities act as a barrier to new market entrants by distorting the economics in such a way as to make CHP appear to be economically unattractive"

Major Barriers to Cogeneration

Lack of Motivation for industrial investors

- Power production usually has no necessity and is rather unfamiliar

Utilities used to conventional power generation

- Utilities „reserved" in enganging or investing in CHPs, therefore
  - Unfavourable conditions for supply of all, additional or stand-by power
  - Price Dumping to prevent CHP installation

New CHP-plants compete with depreciated generation capacity

Major Barriers to Cogeneration

- High dependence on conventional heat and power generation forms
- Natural Gas
  - High prices
  - Necessity to further expand the supply network
- EC CO_2 policy (2013-2020)
  - Unfavourable projected policy towards CHP

Major Barriers experienced

- Administrative Barriers (e.g. licensing, operational)
- Uniqueness of the project (no prior experience on large-scale CHP)
- Inadequacy of present Legal and Regulatory Framework to fully support large-scale CHP
  - No incentives to CHP units larger than 35 MW
  - Differentiation of large-scale CHP units
- The right to participate in the market under current rules
  - Dispatched unit in the electricity market
  - Directive 2004/8/EC has not yet been incorporated into national law
  - Resolution of the Greek Regulator on the promotion of CHP on the basis of useful heat demand

The way forward...

- Complete transposition of Directive 2004/8/EC into national law
- Promotion of the Resolution of the Greek Regulator in support of large-scale CHP ("must run")
- Overcome comitology and operational procedures
- Regulatory and Institutional development
- Further elaboration of support actions by the State towards CHP installations (incentives)
- Enhancement of energy efficiency operations

The way forward...

- Favourable treatment of high efficiency CHP installations in the revised EU ETS from 2013-2020
- Support of investment initiatives for energy production from cogeneration of heat and power
- Improvement of the investment environment for the installation of CHP plants
- Equitable exploitation of the scientific potential for the development of commercially viable innovations in the field of efficient energy production.


Thank you for your attention!

Recent developments in promoting EE &RES in Romania

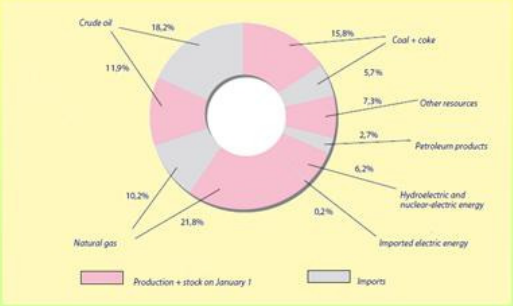
By Mrs. Irina Nicolau (ARCE)

ROMANIAN AGENCY FOR ENERGY CONSERVATION

Recent developments in promoting EE &RES in Romania

"Energy Investments and Trade Opportunities"
8,9 October 2008, Athens (Greece)

Primary Energy Resources, in 2006



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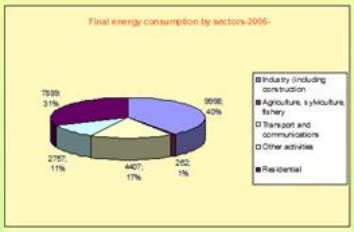
The situation of ENERGY SECTOR in Romania

The largest energy consumer sectors are:

- **Industry 40 %**
- **Residential; 31 %**
- **Transport and communications 17 %**



Source: National Institute of Statistics – "Romanian Statistical Yearbook 2007

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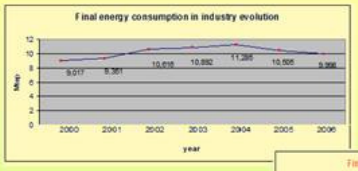
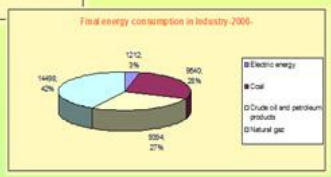
40 % of energy consumption is in industrial sector





Source: National Institute of Statistics – "Romanian Statistical Yearbook 2007

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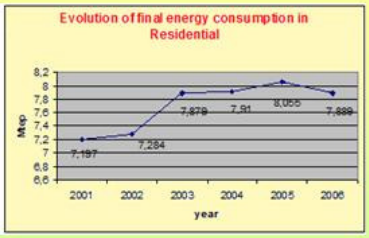
31 % of energy consumption is in residential sector



National Thermal Rehabilitation Plan

- 34 % state budget
- 33 % local budget
- 33 % budget of owners associations

Source: National Institute of Statistics – "Romanian Statistical Yearbook 2007

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ARCE - Energy Efficiency

1.1 Energy managers and auditors certification program
1.2 Market survey activity
1.3 Financial incentives for energy efficiency investments
1.4 International cooperation :
- 1.4.1 Energy Intelligent Europe
- 1.4.2 Long Term Agreements
- 1.4.3 Third Party Financing
- 1.4.4 International partnership
- 1.4.5 Communication/information

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1.1 Energy managers and auditors certification program

	Energy auditors		Energy Managers
	Natural persons	Legal persons	
Total number of diplomas released by ARCE	103	13	187

1.2 Market survey activity in 2007

a. Energy Labeling
The total number of economic agents controlled on energy labeling was 1090 out of which 435 complying economic agents from legal provisions, 257 warnings and 178 fines were applied.

b. Verification of compliance with the law no.199/2000
Control actions for a total number of 744 economic agents, energy consumers, on the grounds of Law no. 199/2000 regarding efficient use of energy, republished, on consumers categories: 365 economic agents with energy consumption> 1000 toe/year, 279 economic agents with energy consumption between 200 -1000 toe/year,49 public building with an useful area >1000sqm,19 authorities of the local public administration from localities with>20000 citizens, 17 companies that own > 25 vehicles and 15 economic agents with activities of generation, transport and distribution of energy

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1.3 Financial incentives for energy efficiency investments

The National program for the reduction of energy costs for the population, by increasing energy efficiency and using renewable sources of energy- in 2007

Through its territorial subsidiaries, ARCE has drafted a list of proposals for co-financing of investment objectives from the state budget, and from this list were co-financed 37 projects and total amount in financial incentives was 11 mil euros .

Energy efficiency investments co-financed from the state budget

in 2003 - 3 million Euros
in 2004 - 6 million Euros
in 2006 - 13.6 million Euros
in 2007 - 11 million Euros

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1.4 International Cooperation

- European Programs
- Intelligent Energy Europe – 8 projects (REMODECE, CEECAP, NewGreenlight, PromoScene, EL-Tertiary, Ex Bess, OdyseeMure, Selina)

- Bilateral cooperation
- Protocol for cooperation between ARCE and ADEME (France)
- Long Term Agreement Project (LTA) with SenterNovem (Netherlands)
- Third Party Financing (TPF) Project with Energy Agency from Berlin

- International partnership
- On February 2006 Romanian Agency for Energy Conservation, became member on European Energy Network (EnR).
- On 27th October 2006, Romania signed the adherence documents on The Renewable Energy and Energy Efficiency Partnership (REEEP). Therefore, Romania become the 33-th member state of The Renewable Energy and Energy Efficiency Partnership,

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EU ENERGY POLICY TARGETS

• Directive 2006/32/EC (ESD)

Purpose

Energy efficiency increase in energy end-use sectors, by:

- *providing the indicative targets as well as mechanisms, incentives and institutional, financial and legal framework necessary for the promotion of efficient energy end-use;*
- *creating the conditions for the development and promotion of the market for energy services*

Target

• Energy savings of 9% for the end of the period 2008-2016, respectively 1% per year, of the annual average of the final energy consumption in the last 5 years (period 2001-2005) (the companies under emission trading scheme are excluded)

↓

National Energy Efficiency Action Plans
Deadlines : 30th June 2007; 30th June 2011; 30th June 2014

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• Integrated Energy and Climate Change Package, January 2007

Target

- *Reducing GHG by 20% by 2020 comparatively with 1990;*
- *Energy savings of 20% of the EU total primary energy supply by 2020;*
- *Share of the renewable energy of 20% in overall energy mix by 2020, and a minimum target of 10% for biofuels.*

→ *Legislative proposals:*

- *Modifying the ETS Directive (2003/87/EC)*
- *Directive proposal on the use of the renewable energy sources*
- *Proposal for establishing the GHG targets for the non-ETS sectors*

Proposal for Romania:

+19% *Target on GHG emission for non-ETS sectors*
-21% *Target on GHG emission for ETS sectors*
24% *Share of RES in final energy consumption*

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Renewable Energy Source used to produce
Electrical power

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WIND ENERGY

	PRODUCER	RES	P_i [MW]
1	S.C. ILEXIMP S.R.L.	wind	0,250
2	S.C. ECOPROD ENERGY S.R.L.	wind	0,660
3	S.C. PENTIUM S.R.L.	wind	1,650
4	S.C. BLUE LINE IMPEX S.R.L.	wind	0,285
5	S.C. ELECTROGRUP S.R.L.	wind	1,035
6	S.C. ELECTRO MARCO LINE SRL	wind	0,285
7	S.C. E MARKET S.R.L.	wind	0,300
8	S.C. ELECTRO PROD S.A.	wind	0,600
9	S.C. SERVOPLANT ECO ENERGIE S.R.L.	wind	0,090
10	S.C. GREEN ENERGY GRUP S.R.L.	wind	0,750
11	S.C. HYDRO WIND POWER S.R.L.	wind	0,750
12	S.C. GERVIS S.A.	wind	0,990

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	PRODUCER	RES	P_i [MW]
1	Energy Holding S.R.L.	hydro	5,950
2	UZINEXPORT GENERAL CONTRACTOR S.A.	hydro	4,600
3	S.C. HIDRAL INVEST S.A.	hydro	0,760
4	S.C. UZINA MECANICA SADU S.A., Filiala C.N. ROMARM S.A.	hydro	1,200
5	S.C. COMPLEXUL ENERGETIC TURCENI S.A.	hydro	9,900
6	S.C. ESPE ENERGIA S.R.L.	hydro	5,000
7	S.C. COLTERM S.A.	hydro	1,200
8	S.C. TERMOFOREST S.R.L.	hydro	0,526
9	S.C. ELECTROMAGNETICA S.A.	hydro	4,069
10	S.C. HIDROCONSTRUCTIA S.A.	hydro	0,600
11	S.C. EVIVA HIDRO București	hydro	0,202
12	S.C. APAVIL S.A. VÂLCEA	hydro	0,710
13	Administrația Națională "APELE ROMANE"	hydro	1,304
14	S.C. ROMELECTRO S.A.	hydro	1,648
15	S.C. RAFINARIA STEAUA ROMANĂ	hydro	0,820
16	S.C. Exploatare Sisteme Zonal PRAHOVA S.A.	hydro	0,290
17	S.C. ELSID S.A.	hydro	0,197
18	S.C. NEPTUN S.A.	hydro	0,071
19	S.C. SOBES Solutions S.R.L.	hydro	0,236

The hydro power is the most important RES in Romania

	PRODUCER	RES	P_i [MW]
20	S.C. ISPH S.A.	hydro	12,470
21	S.C. HIDROELECTRICA S.A.	hydro	143,790 39,800
22	S.C. LUXTEN LIGHTING COMPANY S.A.	hydro	10,525

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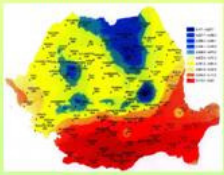
SOLAR ENERGY that can be transformed in electrical power in PV

-Polytechnic University of Bucharest (30 kW)

- Valahia University (10 kW)

ROMANIAN SOLAR RADIATION MAP



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Renewable Energy Source used to produce Thermal Energy

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Project "Sawdust 2000"

Vatra Dornei
12 MW

Huedin- -4 MW

Gheorgheni
6 MW

Vlăhiţa-6 MW

Întorsura Buzăului - 7 MW

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SOLAR ENERGY that can be transformed in thermal energy

Giurgiu

Mangalia

Peparation of hot sanitary water to a power plant in **Brasov** through solar collector

The National program for the reduction of energy costs for the population, by increasing energy efficiency and using renewable sources of energy

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GEOTHERMAL POTENTIAL IN ROMANIA

At Ministry of Administration and Interior there is PILOT PROGRAM : 10 schools will be equipped with heat pump that replace stoves and decrease pollution.

Applications:

- Oradea
- Calimanesti – Caciulata
- North Bucharest (Otopeni)

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Financial schemes to support energy efficiency and renewable projects

- **The promotion system**: the obligatory quota combined to the green certificates transaction
- **Environmental Fund** is a fund supplied by penalties for pollution and state budget. Only renewable projects could be financed from this fund, not energy efficiency
- **The National program** for the reduction of energy costs for the population, by increasing energy efficiency and using renewable sources of energy
- **Sectoral Operational Program**
  Priority axis IV - "Increasing energy efficiency and security of supply in the context of combating climate change"
  4.1. Energy efficiency and sustainable (improving energy efficiency and sustainability of the energy system
  4.2. use of renewable energy to produce "green" energy
- **FREE** (Romanian Energy Efficiency Fund) is a revolving fund established by World Bank.
- **ESCO** in Romania
- **Long Term Agreement** (LTA)

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Contact us:

ARCE HEADQUARTERS

Tel.: +40213145929

Fax: +40213123197

16 Boulevard Nicolae Balcescu,
1st district
RO 010052 Bucharest 37

www.arceonline.ro

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Development of the Georgian electricity and gas markets in line with the EU energy policy

By Mr. George Abulashvili (EEC Georgia)

Development of the Georgian electricity and gas markets in line with the EU energy policy

by V. Jankauskas, T. Gochitashvili and G. Abulashvili

1. Introduction

Georgia has chosen the way of integration into the European political and economic structures. One of the key objectives of the Georgian energy policy is its harmonisation with the EU energy policy principles and trends. Harmonisation of the legislative and institutional structure of the energy sector has entered an important phase in 2004 when Georgia joined the European Neighbourhood Policy (ENP). ENP Action Plan, agreed jointly by the two parties, has set "gradual convergence towards the principles of the EU internal electricity and gas markets" as one of the main tasks in the energy sector [1].

On 30 November 2006 in Astana the Littoral States of the Black and Caspian Seas, including Georgia, met with the EU Presidency, the European Commission, and EU Member States and agreed to endorse the Road Map in the framework of the enhanced energy co-operation. One of the focuses of the Road Map is converging of energy markets on the basis of the EU internal energy market principles taking into account the particularities of the Partner Countries. Long-term objective is creation of integrated regional energy markets and their progressive integration with the EU internal energy market (where applicable) [2].

Government of Georgia has recently taken important steps revising and amending the Law on Electricity and Natural Gas. It set a new structure of the electricity market as also improved operation of the natural gas market. The Parliament of Georgia in June 2006 has approved "The basic directions of the state policy in energy sector of Georgia" setting the key objectives of the energy sector development [3]. New energy policy is under preparation.

This article analyses the recent developments in the Georgian electricity and gas markets, compares legislative background and operation of the markets with those in the European Union, including the latest legislative package. Legislative, structural and operational gaps between the Georgian and EU market models are identified and the ways of the further harmonisation of the Georgian market models with the EU ones are proposed.

2. Development of the EU electricity and natural gas markets

The process of liberalising the electricity and gas market in the EU started about 10 years ago. The ultimate goal of the reform was to create an internal European energy market without borders. The main idea of the restructuring and liberalisation was separation of competitive parts in the electricity sector (generation and supply) from the monopoly activities (transmission and distribution). Competitive parts of the sector were gradually opened for competition and monopolies were regulated but the third party approach was introduced, i.e. independent producers and eligible consumers obtained the right to accede the market.

Market access, in particular of new entrants, is only possible when access to the network is granted on the basis of fair and non-discriminatory rules. The effective separation (unbundling) of generation and transmission activities is crucial for achieving competition in wholesale electricity markets as this will help prevent anti-competitive behaviour by incumbent

generators and ensure non-discriminatory network access for others. Failure to do so can prevent generators from participating in the market and will discourage new entry. Unbundling can take the form of functional, accounting, legal, or ownership separation, with the latter being the most effective. Similarly, unbundling supply from distribution is important for effective retail competition. Therefore, the most important principle of unbundling was developed and implemented gradually. The first Electricity and Gas Directives required separation of accounts only, while the second Directives (2003) stipulated the legal and management unbundling [4, 5].

The principle of the regulated third party access to the grids, based on clear, non-discriminatory rules and tariffs set by an independent Regulator, was introduced in the second Electricity and Gas Directives. At the same time requirement to establish an independent energy regulator was defined and its functions were described. The regulator needs to establish clear rules for the wholesale market and to minimise regulatory uncertainty. Where competitive and monopoly stages remain integrated, the regulator must ensure that there is real and non-discriminatory access to transmission and distribution networks for generators and suppliers. Regulated third-party access has proven the most effective and widely used approach to the provision of network access. The only one country in Europe which did not adopt such a system at the beginning of its reform process, Germany, was forced to adopt it following multiple difficulties in competitive suppliers gaining access to incumbent company networks.

The main steps in the electricity sector liberalisation are given in the Table 1.

Table 1. Main steps in the electricity sector liberalisation

Restructuring	Vertical unbundling of generation, transmission, distribution and retail activities
	Horizontal splitting of generation and retail supply
Competition and Markets	Wholesale market and retail competition
	Allowing new entry into generation and retail supply
Regulation	Establishing an independent regulator
	Provision of third-party network access
	Incentive regulation of transmission and distribution networks
Ownership	Allowing new private actors
	Privatising the existing publicly owned businesses

European reform was pursued at two parallel levels. First, under EU Electricity and Gas Directives, member countries were required to take at least a minimum set of steps by certain key dates toward the liberalisation of their national markets. Second, the European Commission promoted efforts to improve the interfaces between national markets by improving cross-border trading rules, and to expand cross-border transmission links. The underlying aim of both of these policies was to extend the principles of the European single energy market by Directives that would enable companies from across the EU to compete with national incumbents, while improved interconnection would reduce cross-border transport costs and increase competition. Regulation of cross border trade aims to facilitate market integration

Liberalisation has clearly led to some efficiency improvements in energy supply and delivered savings to customers, particularly in the initial phase. Competitive markets render the supply of energy as efficient as possible and eliminate undue monopoly profits. As well as improving efficiency, the internal market contributes strongly to the objectives of security of supply. The prospect of a large EU market for electricity and gas with common rules is a strong incentive for new investment. The fact that retail electricity prices have, on average across all users, remained relatively constant in real terms over the last ten year period, despite very

obvious price increases in the cost of primary fuels, clearly demonstrates the effect of increasing efficiency in electricity supply. The electricity prices in particular for households would in fact have decreased if the effects of taxation were excluded [6].

Against the background of obvious achievements by liberalising European electricity and gas markets the Commission has identified some significant hurdles and deficiencies [7]:

- markets are heavily concentrated;
- integration of generation and supply, long-term contracts, non-liquid wholesale market;
- insufficient market integration: lack of interconnections, market models are not compatible;
- lack of transparency in the wholesale market;
- different powers and competences of the regulators;
- large consumers are not sure if prices are competitive.

Therefore the third energy liberalisation package was proposed in September 2007. The main proposals are as follows:

- the effective separation of supply and production activities from network operation;
- the further harmonisation of the powers and enhanced independence of the national energy regulators;
- the establishment of an independent mechanism for cooperation among national regulators;
- the creation of a mechanism for transmission system operators to improve the coordination of networks operation and grid security, cross-border trade and grid operation; and
- greater transparency in energy market operations [8].

The main proposal for the separation of network activities from the competitive generation and supply is ownership unbundling, i.e. requirement that those activities were run by different owners. For the better cooperation of the national regulators the Agency for cooperation of the regulators is proposed, and for the transmission system operators an improved cooperation mechanism is also developed.

The third package was met not without a controversy – different proposals are widely discussed by the different stakeholders. A full implementation of the package may thus happen not faster than in two-three years.

3. Legal framework for the electricity and gas sectors in Georgia

The main legal document regulating activities in the Georgian electricity and natural gas sectors is the Law on electricity and natural gas. It was passed in 1997 and recently (in 2005 and 2006) amended to reflect the main objectives of development of competitive electricity and gas markets. The Law clearly describes roles and functions of the two main state institutions responsible for the development and operation of the electricity and gas markets: Ministry of Energy and National Energy Regulatory Commission.

The Ministry of Energy is responsible for drafting the main directions of the energy sector policy and implementing them after approval by the Georgian Parliament. The Ministry has usual functions as in the EU member states (elaborates programmes for the sector development, promotes restructuring and privatisation of the state owned enterprises in the sector, develops emergency measures for the sector, promotes consumption of renewable energy resources, drafts legal documents for the sector, approves various rules and standards).

The Law clearly declares that the Ministry shall relinquish ownership, regulatory and operational rights in the electricity and gas sectors. Nevertheless, the Ministry approves Electricity market rules and Natural gas market rules (usually approved by the Regulator), Electricity balance and Natural gas balance. This means that some remnants of the central planning system are still in place.

The Law describes in detail the establishment and operation of the National Energy regulatory Commission (hereinafter Commission). Members of the Commission are appointed by the President of the State for a fixed six year term; they cannot be removed from the office before the end of their term except of the cases defined by the Law. Independence of the Commission is guarantied by this appointment/dismissal procedure, its funding from the regulatory fees and not from the State budget, as also by irreversible decisions of the Commission in the areas defined by the Law. Resolutions and decisions of the Commission may be appealed to the Constitutional or Supreme Court of Georgia. The Law defines the main functions of the Commission: licensing of the regulated activities, setting tariffs based on the methodologies approved by the Commission, resolution of disputes between market players – these functions are very similar to the ones prescribed to the European energy regulators. Hence, Georgian energy regulator is legally an independent and powerful institution.

Further the Law defines the wholesale electricity market: trade is based on bilateral contracts between producers and eligible consumers or distribution companies.

Roles, functions and requirements to different market players are described in the Article "Licenses and licensing procedures". In the electricity market licenses are mandatory for the generation, transmission, dispatch and distribution activities, and in the natural gas market – for the gas transportation, distribution and supply. If company carries several activities including some licensed activities it should keep separate accounts for each regulated activity – unbundled accounts.

Compared with the domestic electricity and gas laws enacted in the EU member states, the Georgian Law in general pays too much attention to the definition of roles and functions of the Ministry of Energy and, especially, of the Commission, but does not describe the rules and requirements for the electricity and natural gas market operation [9]. But the Georgian approach is also possible and preferred by some legislators. If the roles and functions of various state institutions are clearly described these institutions may approve the necessary implementing provisions, thus assuring clear and transparent market operation principles.

The main gaps in the Law, compared with the typical European laws, may be identified as follows:

- it does not set development of liberalised, competitive electricity and gas markets as an objective,
- it does not set consumer protection and does not define public service or universal service obligations as an objective,
- electricity supply is not properly defined and hence mixed with the monopolistic distribution activity,
- there is a separate dispatch licensed activity which should be merged with the transmission activity,
- different regulated activities should be unbundled not only in terms of accounts but also in management and operation terms (legal unbundling) with the later possible ownership unbundling.

The next very important legal document is "The main directions of the state energy policy" approved by the Georgian Parliament in June, 2006. It defines the main objectives of the long term energy policy: development of local energy resources achieving partial or full

self sufficiency, security of supply by rehabilitation and enforcement of the infrastructure of the sector and diversification of sources and routes of the imports. One of the important policy directions is development of bilateral and multilateral regional cooperation which may allow diversification of energy transport routes and creation of regional electricity and gas markets – this would guarantee security of supply and the lowest cost energy supplies for the benefit of all consumers in the region.

"The main directions of the state energy policy" set also a timetable for the gradual electricity market opening but the time span for the full market opening is relatively long – until 2023. It was better if market opening deadlines and principles were given in the Law on electricity and natural gas and not in secondary legal documents, it would give certainty to consumers and investors.

The document declares development of competition in the natural gas sector also, but does not speak about any deadlines for the natural gas market liberalisation, eligible consumers according to the ministerial order are those directly connected to the main grid (transmission). The Law on electricity and natural gas also enables direct contracts between gas suppliers and eligible consumers and gas distribution companies.

The Ministry of Energy approves also Electricity market rules and Natural gas market rules defining the main principles of operation of the electricity and natural gas markets.

4. Development of the Georgian electricity market

Georgian electricity market system is a rather complicated one. There are many generators, state owned and private, most of them are hydro power plants, and others are thermal power plants operated as peak or shoulder (semi-peak) units. As there are strong interconnections with the neighbouring Armenia, Azerbaijan and Russia, electricity could be imported or exported too.

There are two companies having transmission licenses: Georgian state electricity system (GSE) and Sakrusenergo. Sakrusenergo owns and operates 500 kV high voltage line, connecting Russia and Georgia, and GSE owns and operates all other high voltage lines, transformers and other related facilities as also the dispatch centre and system.

A newly established unit – Electricity system commercial operator (ESCO) – is responsible for the system's reserves and balance.

Finally, there are three distribution companies: Energo-Pro Georgia, Telasi and Kakheti Distribution Company and a number of small distribution companies. They are in charge of energy distribution and supply to the incumbent customers.

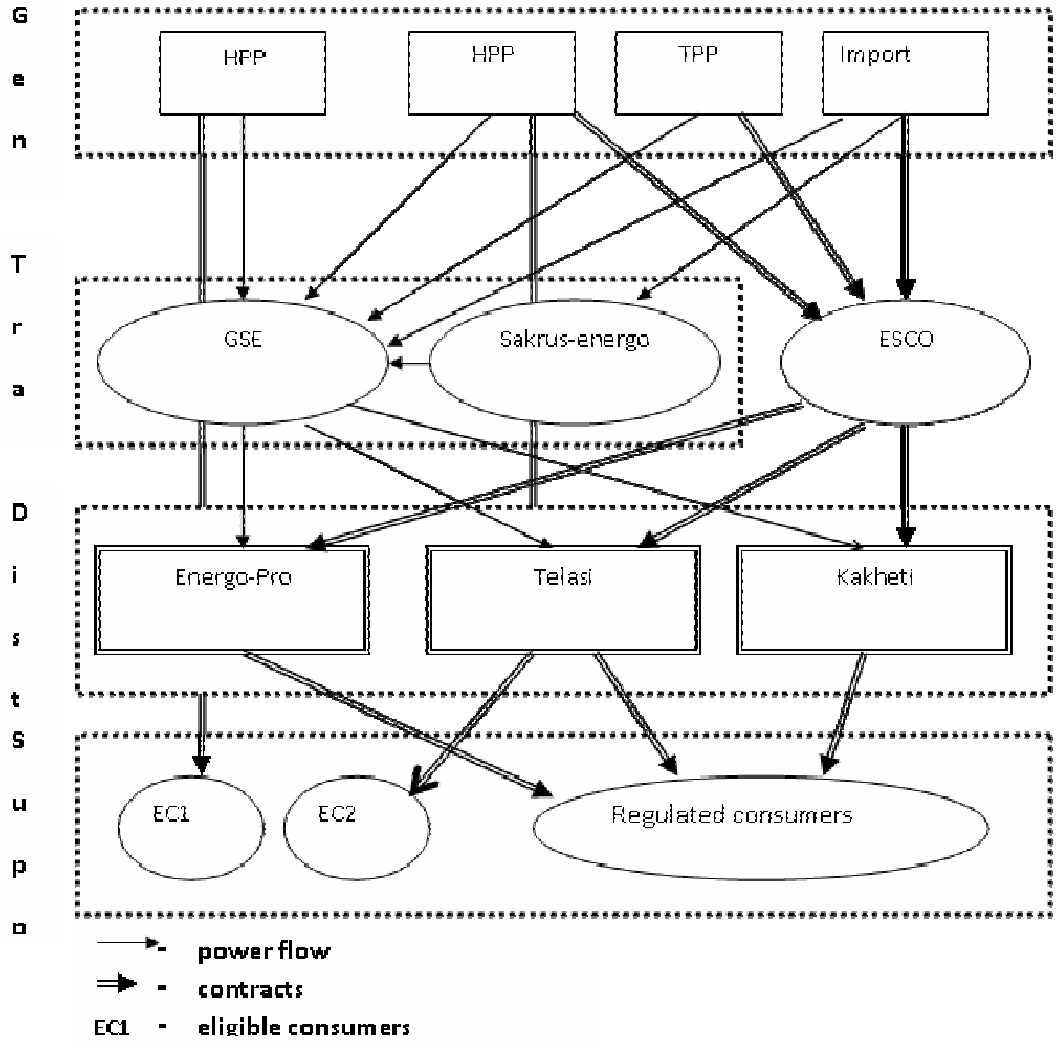
Structure of the Georgian electricity sector is given in Fig. 1.

According to the Electricity market rules, the licensed electricity producers and distributors as also eligible consumers may have short term (one year) or long term (five years) direct contracts for electricity sales and purchases. Eligibility status is defined in the "The main directions of the state energy policy" and in 2006-2009 was given to the consumers which consumed not less than 30 GWh in 2004-2005. Distribution companies should distribute 120 GWh per year in order to get the distribution license.

The national energy regulatory commission sets all generation prices or price caps for all generators (with capacity more than 10 MW), for small hydro power plants there is no price cap set, these generators may sell directly to the eligible consumers or distribution companies at the negotiated prices or to the ESCO at the average generation price of the previous month. Under the new amendments to the Electricity market rules electricity produced at newly built small hydro power plants shall be mandatory purchased by the Electricity system commercial operator under the tariff fixed by the Commission. This tariff should allow recovering

investments made into the construction of the new power plant and encourage construction of new power plants.

Fig. 1. Georgian electricity market



Distribution companies and eligible consumers are obliged to buy reserve capacity equal to 10% of their used capacities and dispatcher monitors if the necessary reserves were bought and assured. Before 2007 those capacities were bought by direct contracts between distribution companies or eligible consumers and generators only. With the recent amendments of the Law on electricity and natural gas and newly revised Electricity market rules the system of reserve capacity was introduced. Besides, the newly established Electricity system commercial operator was empowered to buy the reserve capacity from the guaranteed sources (thermal power plants and newly constructed power plants) and sell it to the distribution companies and eligible consumers if they did not purchase their own reserve. The Electricity system commercial operator balances the difference between the actual consumption and the amount of the electricity agreed by the direct contracts between customers and producers.

The operation of two transmission companies may cause some problems in system planning and development as also in the dispatch control. It would be expedient to merge both transmission companies as also transmission and dispatch licensed activities – this would allow creating a strong system operator responsible for the system planning and operation. Alternative option would be a creation on an independent system operator (ISO), leaving

ownership of the transmission assets to the both current transmission companies (this model is applied in several EU member states, e.g. in Scotland). In any case TSO or ISO should be much stronger and take care not only about the wires but deliver the system services necessary for the functioning of the complicated electricity system (spinning, hot and cold reserves, etc.).

The establishment of ESCO and introduction of the system reserve capacity by strengthening the requirement for each distribution company and each eligible consumer to secure the reserve capacity has made this service more transparent and easier controlled. With the further market opening and liberalisation of generation ESCO may become an energy exchange.

In the Georgian electricity market there is neither separate supply activity nor supply licensing. Distribution companies are obliged to supply electricity to the incumbents and eligible consumers may purchase electricity for their own use. In the European legislation there are licensed independent suppliers which are allowed to purchase electricity from any producer and sell it to any eligible consumer. This allows separating competitive (supply) and monopolistic (distribution) activities as also avoiding cross-subsidies between these two activities.

In general, different activities in the Georgian electricity market are unbundled (except of supply), there are even different owners of generation, transmission and distribution companies. But during the recent privatisation of some distribution companies to Energo-Pro, in order to increase the value of the companies standing for privatisation, distribution was bundled with generation. This is the breach of the market principles, and an unbundling should be done as soon as possible. Georgian legislation requires having different accounts for generation and distribution activities in those companies but this is not enough as legal unbundling is required by the EU Electricity Directive (2003). Unbundling of accounts only does not guarantee the non-discriminatory and transparent operation of the market, as transmission and distribution licensees having transmission or distribution assets together with the generation assets or carrying supply activities may give preference to their own generation or supply branches and discriminate outsiders (this is shown by many examples in the EU).

5. Development of the Georgian natural gas market

Georgian natural gas market is developing fast, different import routes are being built and new external suppliers are entering the market. Main gas pipelines in Georgia are designed to transport natural gas to the Georgian consumers and to provide gas transit to Armenia and Turkey. Developing its role as an energy transit country and pursuing the regional integration Georgia is taking an active role in the development of the Baku-Tbilisi-Erzurum export gas pipeline (recently completed) which allows to export the Caspian energy resources and increase security of supply in Georgia and in the region. At the same time rehabilitation of the existing pipelines is going on: rehabilitation of the main pipeline from the Russian border to the Armenian border is going on with the first stage of works already completed and the second stage to be finished in 2009, it will increase reliability of system operation; re-construction of the pipeline between Georgia and Azerbaijan is going on, it will allow to diversify supply routes and reduce monopolistic power of Gazprom; feasibility study for the underground storage construction is completed and is under revision now in order to take account the latest developments in region (it could become a regional storage).

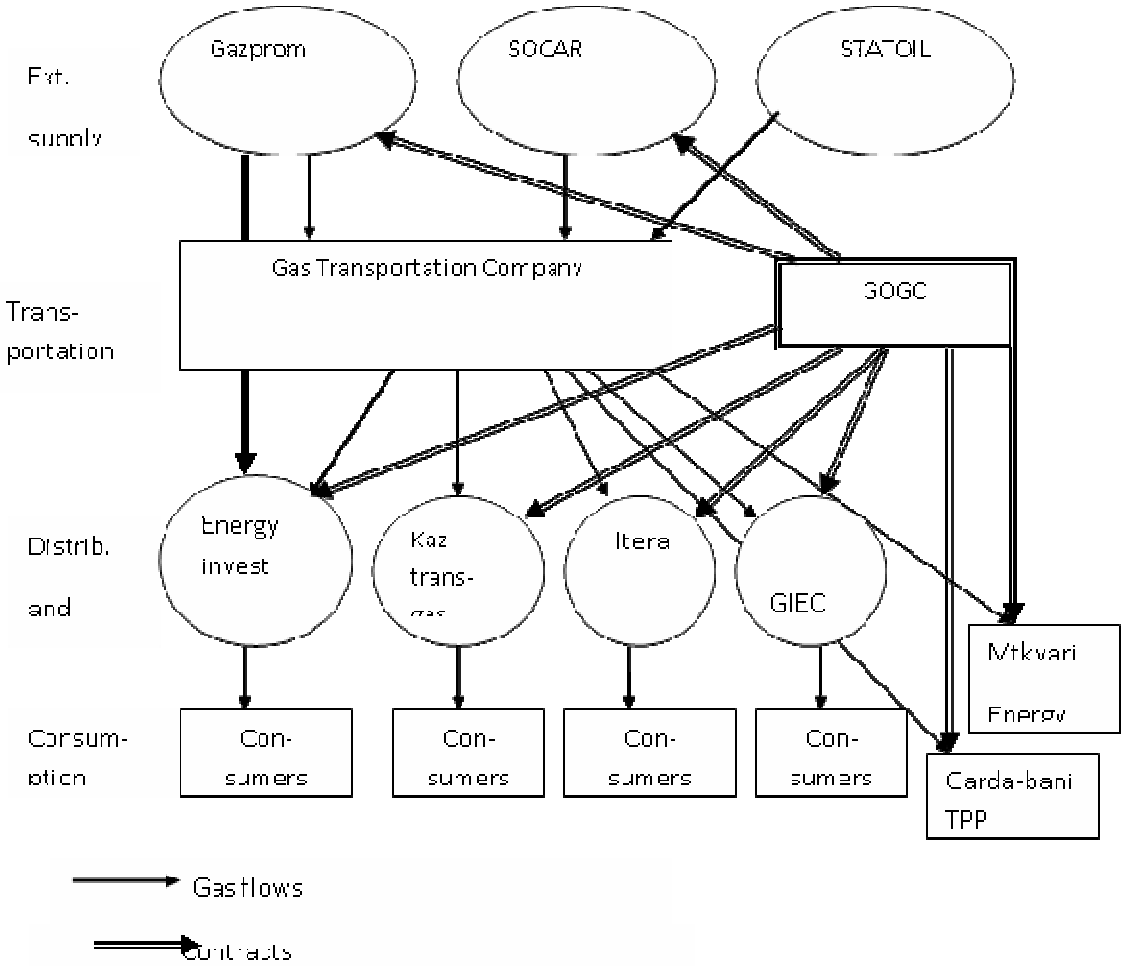
At present Georgia may import natural gas from Russia and from Azerbaijan. There is one external gas supplier from Russia – Gazprom, and two external suppliers from Azerbaijan – State oil company of Azerbaijan (SOCAR) and Statoil – commercial operator of the BP led South Caucasian pipeline consortium. Gas is transported by the main pipelines by the system operator Gas Transportation Company (GTC) which is a newly established subsidiary of the

Georgian Oil and Gas Corporation (GOGC). GTC possesses a gas transportation license issued by the Commission. Commission sets also transportation tariffs. At present there are cross-subsidies in the gas transportation tariffs: thermal power plants are paying a lower price for the transportation, i.e. other consumers are subsidizing the power producers.

There are 4 big gas distribution companies (Kaztransgas, IteraEnergy Invest, GIEC), 2 direct consumers (Gardabani TPP and Mtkvari Energy), a number of small distribution companies in a process of privatisation and many natural gas filling stations (for the transport). GOGC has made contracts with the three foreign suppliers and acts in the country like a wholesaler. Every distribution company and eligible (direct) consumers buy gas from GOGC but according to the recent Order of the Minister for Energy on the liberalisation of the gas sector, gas supply prices are not regulated. Even more this Order allows distribution companies and eligible consumers to arrange direct supply contracts with the external suppliers (at present there is one direct contract between Energy Invest and Gazprom). Gas distribution companies and large consumers may negotiate for their supply prices. Gas transportation business is run by an affiliate of the GOGC – Gas Transportation Company, so the requirements for unbundling of the activities are fulfilled. But in the natural gas market, similarly like in the electricity market, there is no separation of distribution and supply activities. Consumers connected to the distribution grid are not allowed to make direct contracts and this not foreseen in the Law or in the Main energy policy directions.

A scheme of the Georgian natural gas market is shown in Fig. 2.

Fig. 2. Georgian gas market



Conclusions

1. The liberalisation of the electricity and natural gas markets in the EU has led to improved efficiency and stable electricity prices despite steeply growing primary fuel prices. Therefore, liberalisation of the European electricity and gas markets could serve as a good example for the neighbouring countries, including Georgia. But there is still a way to go to creation of the common European electricity and gas markets without borders. To this end, the "third energy package" is proposed to foster further development of the liberal regional electricity and gas markets and finally pan-European market.

2. Georgian Law on electricity and natural gas describes the roles and functions of the main supervisory institutions: Ministry of Energy and National Energy Regulatory Commission, as also functions and requirements to the main market players; time schedule for the electricity market opening is defined in the Main Directions of the State Energy Policy. In order to comply with the EU legislation, some amendments to the Georgian Law on electricity and natural gas are needed: to set as the objectives electricity and gas market liberalisation as also consumer protection, to separate commercial supply activity from the monopolistic distribution activity, to require not only account unbundling (for generation and network activities) but also legal or ownership unbundling.

3. There are many generators in the Georgian electricity market; eligible consumers as also distribution companies are allowed to make direct contracts for the energy purchases. For the development of the liberal market it is necessary to further liberalise the generation market (removal of price regulation and abolishment of central planning of the energy balance). The two existing transmission companies should be merged and transmission system operator or alternatively, without the merger, an independent system operator should be established, with the main function to provide all necessary system services to the market.

4. During the last couple of years there was a clear evidence of the development of a more secure and competitive Georgian gas market. There are three external gas suppliers now, with GOGC buying gas from all of them. Gas transportation activity is unbundled from the wholesale activity by establishing subsidiary of the GOGC – Gas Transportation Company. Distribution companies as also eligible consumers are allowed to purchase gas directly at the negotiated prices from the wholesaler GOGC. Legal separation of supply and distribution activities is necessary here as also in the electricity sector.

References

1. Ministerial declaration on enhanced energy co-operation between the EU, the Littoral States of the Black and Caspian Seas and their neighbouring countries. Astana, 30th November 2006. http://ec.europa.eu/dgs/energy_transport/international/regional/caucasus_central_asia/baku/doc/2006_11_30_astana_conclusions.pdf
2. Road map for the energy co-operation between the EU, the Littoral States of the Black and Caspian Seas and their neighbouring countries. Annex 1. Astana, 30th November 2006. http://ec.europa.eu/dgs/energy_transport/international/regional/caucasus_central_asia/baku/doc/2006_11_30_astana_conclusions.pdf
3. The basic directions of the state policy in energy sector of Georgia. Tbilisi, June 2006. www.minenergy.gov.ge
4. Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive

96/92/EC. Official Journal of the European Union, L 176/37, 15.7.2003. http://www.ewea.org/fileadmin/ewea_documents/documents/policy/external_documents/030715_directive_internal_market_electricity.pdf
5. Directive 2003/55/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in natural gas and repealing Directive 98/30/EC. Official Journal of the European Union, L 176/57, 15.7.2003 http://www.energie-cites.eu/IMG/pdf/directive_gaz_en.pdf
6. P. Bulteel. Eureletric's roadmap to an integrated European electricity market. Presentation at the Eurelectric's Conference. June, 2006. http://www2.eurelectric.org/content/default.asp?PageID=705
7. DG competition report on energy sector inquiry. Brussels, 10 January 2007. www.ec.europa.eu/comm/competition/sectors/energy/inquiry/index.html#final
8. The EU electricity and gas markets: third legislative package. September 2007. www.ec.europa.eu/energy/electricity/package_2007/index_en.htm
9. T. Gochitashvili, M.Krakauskas, G.Abulashvili. Georgia in the context of EU energy policy. - Georgian Economic Trends. Quarterly review. June 2006. P. 59-66. http://geplac.org/files/georgian-june.pdf

Abbreviation used

ENP - European Neighbourhood Policy;
EU - European Union;
GSE - Georgian state electricity system;
ESCO - Electricity system commercial operator;
GWH - Giga Watt Hours;
MW - Mega Watt;
HPP - Hydro Power Plant;
TPP - Thermal Power Plant;
EC - Eligible Consumer;
ISO - Independent System Operator;
TSO - Technical System Operator;
SOCAR - State Oil Company of Azerbaijan
BP - British Petroleum;
GTC - Gas Transportation Company;
GOGC - Georgian Oil and Gas Corporation;
GIEC - Georgian International Energy Corporation.

RES opportunities in South East Europe

By Mr. Vasilis Papandreou (CRES)

RES Opportunities in SEE

RES OPPORTUNITIES IN SOUTH EAST EUROPE

Dr. Dimitris Papastefanakis
Director of Division of Development Programs CRES
dpapas@cres.gr

Vasilis Papandreou
Mech. Engineer
Division of Development Programs CRES
vpapandr@cres.gr

RES Opportunities in SEE

The common USAID-HellenicAid SYNENERGY project

- Kicked Off: May 2008
- Duration: 24 months
- Budget: 8 million € (Hellenic Aid 50%, USAID 50%)
- Nine E.C. Countries:
  Albania, Bosnia Herzegovina, Croatia, FYROM, Moldavia, Montenegro, Serbia, Georgia, Ukraine
- Implementing bodies: IRG, CRES

RES Opportunities in SEE

The common USAID-HellenicAid SYNENERGY project

Objectives

- Promotion of the use of RES for electricity and heat production
- Promotion of Energy Efficiency in residential and public buildings
- Promotion of scientific and business cooperation for RES and E.E.
- Support for the development of institutional and legislative framework for supporting RES and EE investments
- Development and strengthening of regional RES and EE technologies and services market

RES Opportunities in SEE

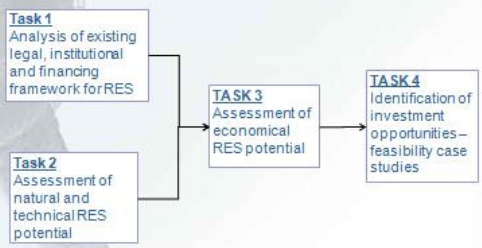
The common USAID-HellenicAid SYNENERGY project

Four areas of activity:

- Activity 1: Regional assessment of RES
- Activity 2: E.E. in residential and public buildings
- Activity 3: Strategic planning for RES and E.E.
- Activity 4: Capacity building and institutional network development

RES Opportunities in SEE

Activity 1 – RES assessment



RES Opportunities in SEE

The Region

- Albania
- Bosnia & Herzegovina
- Croatia
- FYROM
- Moldova
- Montenegro
- Serbia

RES Opportunities in SEE

The Region - Statistics

Country	Surface 10^3 km²	Population million	GDP billion US $	GDP growth %
Albania	28.7	3.18	10.6	6
Bosnia - Herzegovina	51.2	3.78	15.1	7
Croatia	56.5	4.44	51.3	6
FYROM	25.7	2.04	7.5	5
Moldova	33.8	3.79	4.3	3
Montenegro	14.0	0.60	3.6	8
Serbia	88.4	7.39	41.5	7
Total	298.3	25.22	133.9	~7

Source: World Bank

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RES Opportunities in SEE

RES Status – Electricity Production

Country	Electricity Generation	Electricity Consumption	RES				
			Large Hydro	Small Hydro[1]	Biomass	Wind	Solar
Albania	5443	3601	5373	87	-	-	-
Bosnia - Herzegovina	12718	7680	5455	137	-	-	-
Croatia	12459	14384	6438	108	14	10	-
FYROM	6942	6227	1492	64	-	-	-
Moldova	3865	4927	63	0.4[2]	-	-	-
Serbia & Montenegro	36474	25663	12032	54	-	-	-
Total	77901	62482	30853	450	14	10	-

Source: IEA. Data for 2005. All figures in GWh.
[1] Data from various sources (GWh); [2] Estimates

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RES Opportunities in SEE

RES Status – Heat Production

Country	Solid Biomass & Waste	Biogas	Solar Thermal	Geo-thermal
Albania	9.63	-	0.084	-
Bosnia – Herzegovina	7.62	-	-	-
Croatia	14.74	-	-	-
FYROM	6.32	-	-	-
Moldova	2.85	-	-	-
Serbia & Montenegro	33.58	-	-	-
Total	74.74	-	0.084	-

Source: IEA. Data for 2005. All figures in PJ

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RES Opportunities in SEE

Electricity Demand Forecast

- Annual growth rates from 4% to 17%
- Growth rates may be more moderate due to
  - Energy Efficiency measures
  - Fuel switch for heating in residential sector
- Still demand is growing so are the needs for sustainable electricity production

Country	Demand 2005	Forecast	Source
Albania	3601	9500-12500 (2015)	National Energy Strategy, 2003
Bosnia - Herzegovina	7680	15880 (2020)	Energy Sector Study, 2008
Croatia	14384	31750-36452 (2030)	Energy Sector Development Strategy,
FYROM	6227	NA	NA
Moldova	4927	NA	NA
Serbia	25663	31424 (2010)	Energy Demand Forecast (SEEA)

All figures in GWh

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RES Opportunities in SEE

RES Strategies

Country	Strategies
Albania	National Energy Strategy (under review); Duty exemption; Fee exemption for SHPP; Fixed price for HPP; Feed in Tariffs for SHPP; Regulation for GO/GC adopted in 2007; Guarantee of purchase for RES
Bosnia - Herzegovina	Favorable RES treatment; Feed in tariff based on medium voltage price; Legislative measures needed
Croatia	National target 5.8% in 2010; Feed in tariff system; GO/GC system to be adopted; Guarantee of purchase for RES
FYROM	Feed in tariff system for SHPP, wind and biomass; Guarantee of purchase; GO/GC system to be adopted
Moldova	Law on Renewables passed in June 2007; Guarantee of purchase; Feed in tariff system to be approved; EE Fund to be established
Montenegro	Strategy for SHPP adopted in 2006; Priority to RES producers
Serbia	Feed in tariff to be introduced early 2009; Environmental Fund; Amendments on Energy Law expected.

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RES Opportunities in SEE

Kyoto Protocol

Country	Status	Remarks	DNA establishment	Emission target
Albania	Accession	non Annex I	YES	-
Bosnia - Herzegovina	Accession	non Annex I	NO	-
Croatia	Ratification	Annex I	-	5%
FYROM	Accession	non Annex I	YES	-
Moldova	Accession	non Annex I	YES	
Montenegro	Accession	non Annex I	YES	-
Serbia	Accession	non Annex I	NO	-

Source: UNFCC as of 13/05/2008

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RES Opportunities in SEE

RES - Albania

- No wind installations - No reliable data
- Promising site along the Adriatic coast:
  - average speed 4-6 m/sec (10m height)
  - 400 GWh/year envisaged in the future
- Hydro : Large hydro produce 98% of total electricity
- SHPP:
  - Existing Capacity 14 MW (83 plants – 45 private)
  - 41 new sites ~140 MW
- Biomass : No modern installations – no reliable data
  - ~ 6 Mtoe of wood
  - ~130 toe agricultural residues
  - ~340 toe biogas form animal waste

RES Opportunities in SEE

RES - Bosnia & Herzegovina

- No wind installations – No complete wind atlas
- Preliminary estimates:
  - 2000MW technical potential
  - 600 MW economic viable
- Ongoing measurements
  - 18 locations at the south west
  - average speed 6-7 m/sec
  - Capacity factor up to 32%
- SHPP : Economic potential estimated at 5,6 GW (!)
  - Existing Capacity 31 MW
  - Over 280 MW planned. Some already under construction
- Biomass : No installations
  - Over 1 million tonnes wood residues
  - Over 3.8 million tonnes agricultural residues

RES Opportunities in SEE

RES - Croatia

- ~ 45 MW of wind turbines in operation
- Wind atlas under preparation (CARDS)
- Good wind potential along the Adriatic Coast
- Preliminary data: 1300 MW technical potential (new estimates up to 4 GW)
- Target of 400 MW wind by 2030
- SHPP : Economic potential estimation 177 MW (77 locations)
  - Existing Capacity 33 MW (13 plants)
  - Over 280 MW planned. Some already under construction
- Biomass : 512 MW industrial heating – 2 MW electricity (as of 2005)
  - Total potential 11 TWh (BIOEN)

RES Opportunities in SEE

RES - FYROM

- No wind installation – No data
- Wind atlas under preparation (?)
- SHPP : Great interest (400 requests !)
  - Existing Capacity 30 MW
  - Potential capacity 258 MW (study 1982)
  - Concession for 41 locations (2007)
  - Calls every 6 months (30-40 plants)
- Biomass:
  - No data on potential
  - Some industrial uses for heating exist
  - A CDM project under preparation (Biomass to Energy)

RES Opportunities in SEE

RES - Moldova

- No wind installations – Lack of reliable data
- Early studies did not show wind potential - New studies indicate locations with average speed ~7m/sec at 50 m
- SHPP : Significant potential ~200 GWh/a
  - Existing Capacity 141 kW
  - Some 22 MW are readily available
  - Target to 2010 is 36 MW
- Biomass:
  - Estimated potential ~820 ktoe wood & wood waste
  - Only small scale projects

RES Opportunities in SEE

RES - Serbia & Montenegro

- Wind: No wind installations – No wind atlas
- Ongoing measurements from private companies - indication of locations with average speed 6-7 m/sec (10 m)
- Estimated wind potential figures range from 1 to 11 GW
- SHPP : Significant potential – over 900 possible locations ~ 500 MW potential (!)
  - Existing Capacity ~ 5MW
  - 21 SHPP ready for concession in early 2009 – more to follow
  - Feasibility studies needed
- Biomass: High priority RES
  - Estimated wood potential ~1 Mtoe
  - Estimated potential from agriculture ~1.5 Mtoe
  - Pellet production ~ 1 million tones of wood residues


RES Opportunities in SEE
RES Development Barriers
Lack of complete - reliable data
Not defined RES targets and strategies (in some countries)
Inadequate regulatory – legislative framework
Inadequate implementation of existing RES strategies and plans
Administrative issues (complicated licensing procedure)
Grid access
Lack of skilled personnel (in some countries)
Delays on Kyoto mechanisms implementation
Insufficient funding mechanisms
Uncertain investment environment
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RES Opportunities in SEE
RES Opportunities
Excellent potential for small hydro and biomass, promising for wind
Green certificates (for eligible countries)
Kyoto mechanisms (for eligible countries)
Athens Treaty – binding political targets for E.C. member countries
Interconnection
Environmental protection
RES development
More stable economic – political environment
Creation of special energy funds
RES market in its beginning – Time for dynamic entry
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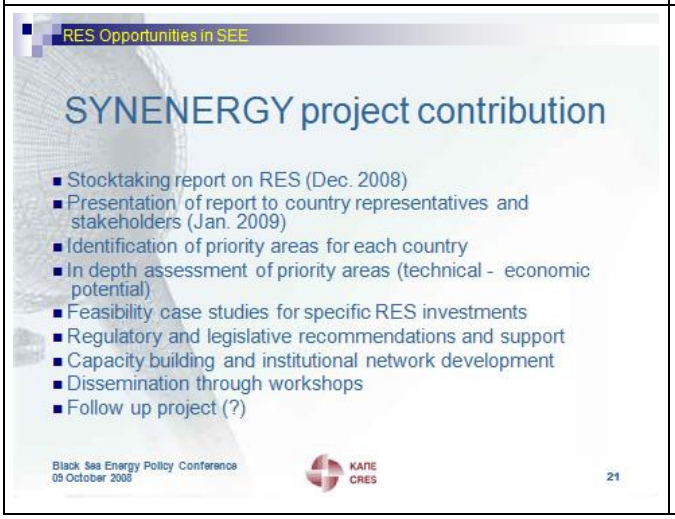
RES Opportunities in SEE
SYNENERGY project contribution
Stocktaking report on RES (Dec. 2008)
Presentation of report to country representatives and stakeholders (Jan. 2009)
Identification of priority areas for each country
In depth assessment of priority areas (technical - economic potential)
Feasibility case studies for specific RES investments
Regulatory and legislative recommendations and support
Capacity building and institutional network development
Dissemination through workshops
Follow up project (?)
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RES Opportunities in SEE
THANK YOU
Further Communication:
Center of Renewable Energy Sources
19th km Marathonos Av., 19009 Pikermi
www.cres.gr – cres@cres.gr
Vasilis Papandreou
Mech. Engineer
Division of Development Programs CRES
vpapandr@cres.gr
SYNENERGY web-site available soon
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Building of Sustainable Energy System in Ukraine (acitivities and prospects)

By Prof. Evgenij Inshekov (ESEMI)

"International Black Sea Energy Policy Conference – Energy Investments and Trade Opportunities", October 8-9, 2008, Athens

Building of Sustainable Energy System in Ukraine (acitivities and prospects)

Prakhovnyk A.V., Inshekov E. N.
Institute for Energy Saving and Energy Management
NTUU "KPI"

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Content:

- Introduction
- Creating a Smart distribution system
- Development of the Distributed Generation (DG) & Low Carbon energy technology
- Development & Accelerate the penetration of DG with the Renewable Energy Sources (RES)
- Creating a Eco – SmartBuildings
- Barriers on the way to the energy efficiency

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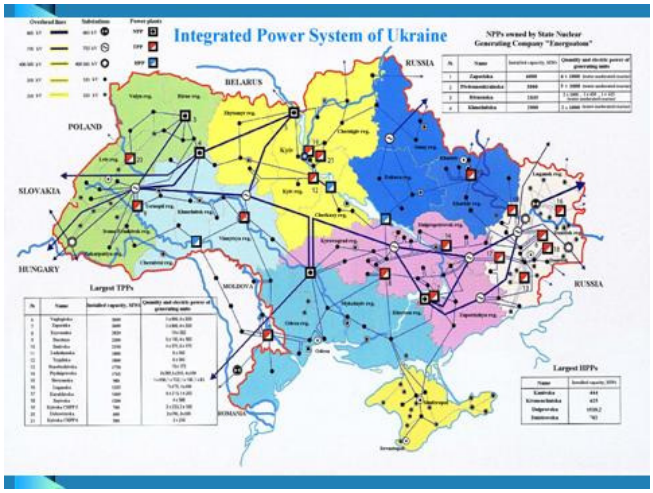
Geo-situation of Ukraine, base Statistic Indicators

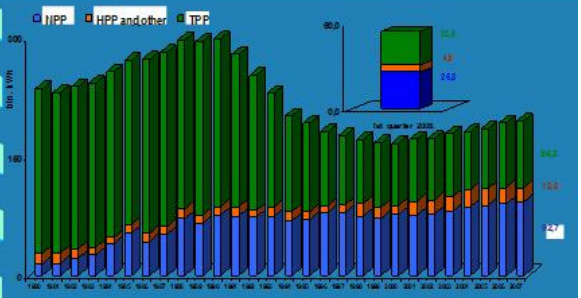
Territory (mln km2)	- 603.50
Population (mln)	- 46.20
GDP (billion 2000 US$)	- 45.24
GDP (PPP) (billion 2000 US$)	- 286.82
TPES (Mtoe)	- 143.24
TPES/Population (toe/capita)	- 3.04
TPES/GDP (toe/thousand - 2000US$)	- 3.17
TPES/GDP (PPP) (toe/thousand)	- 0.50
Electricity Consumption (TWh)	-152.21
Electricity Consumption/Population (kWh/capita)	- 3248
Energy Production (Mtoe)	- 80.98
Net Imports (Mtoe)	- 59.70
CO2 Emissions (Mt of CO2)	- 296.82
CO2/TPES (t CO2/toe)	- 2.07
CO2/Population (t CO2/capita)	- 6.30
CO2/GDP (kg CO2/2000 US$)	- 6.56
CO2/GDP (PPP) (kg CO2)	- 1.03

Energy system of Ukraine

- **Electric Power Industry** (incl. Nuclear Power)
- **Heating Industry** (Production of thermal power)
- **Coal Industry**
- **Oil & Gas Production Complex**
- **Oil & Gas Transportation System**
- **New Generation – Energy Saving !**

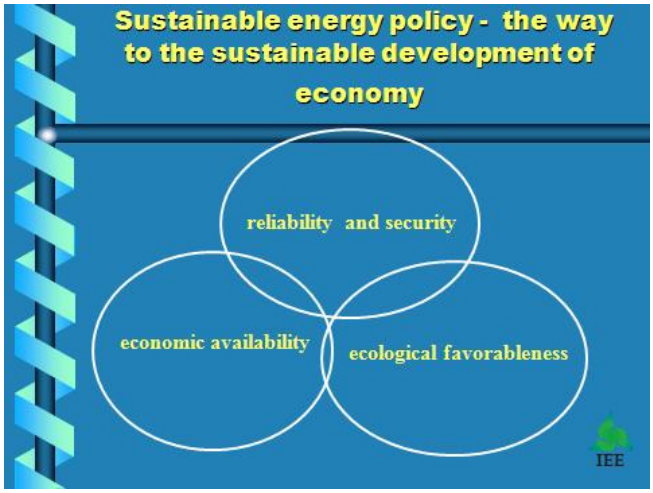


Electricity Generation at TPP, NPP and HPP




Ukrainian Oil Transportation System Current State and Development


Driving forces for sustainable energy development in Ukraine
1. Permanent growth of traditional energy prices.
2. Possibility to increase energy independence.
3. Possibility to develop local economy (money does not go to the oil and gas exporting countries but remains in the region).
4. Growing possibilities for biomass export.
5. Kyoto Protocol process with CO_2 emission reduction request and possibilities of CO_2 credits.
6. Permanent strengthening of ecological norms.
7. Possibility to reduce unemployment.


Sustainable energy policy - the way to the sustainable development of economy
reliability and security
economic availability
ecological favorableness
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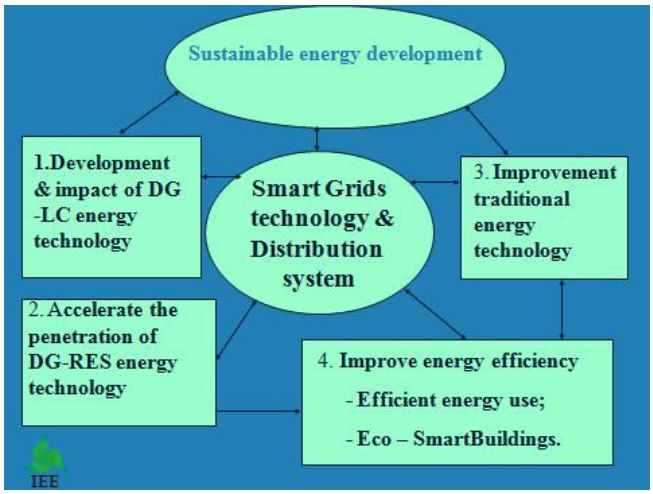
Sustainable energy development
1.Development & impact of DG -LC energy technology
Smart Grids technology & Distribution system
3. Improvement traditional energy technology
2. Accelerate the penetration of DG-RES energy technology
4. Improve energy efficiency
- Efficient energy use;
- Eco – SmartBuildings.
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Smart distribution system (1)
Adapting the Ukrainian energy system into a distribution system, based on a diverse mix:
• of DG-LC & DG-RES energy sources for market electricity;
• heating and cooling;
• energy efficiency;
• storage options.
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