



Economic and Social Commission for Western Asia (ESCWA)**REPORT****EXPERT GROUP MEETING ON THE “ROLE OF ENERGY NETWORKS
IN REGIONAL INTEGRATION”
BEIRUT, 22-23 DECEMBER 2009****Summary**

The Economic and Social Commission for Western Asia (ESCWA) organized an Expert Group Meeting on “The Role of Energy Networks in Regional Integration” on 22 and 23 December 2009, in Beirut. The meeting brought together 40 participants, experts from ESCWA member countries, European experts and representatives from several regional and civil society organizations.

The meeting was divided into six sessions in which participants discussed a set of issues related to the role of energy networks in achieving regional integration, namely: the current situation and future plans for electrical interconnection projects in the region; the role of energy networks in achieving regional integration; electrical interconnection experience in European countries and possible European-Arab cooperation in this field; the current situation and challenges for gas networks and regional plans; and lessons learned, as well as regional and interregional future plans in the field of energy networks. A number of participants presented documents on energy networks in their respective countries and their role in regional projects.

A set of recommendations was addressed to ESCWA as well as to Arab and regional organizations, bodies and member countries. Recommendations called to strengthen and develop national energy networks (electricity and gas networks); to motivate the private sector to invest in energy network projects and to prepare those networks for making use of renewable energy sources; to benefit from available European experiences; to offer technical support to member countries; and to put regional programmes in order to increase awareness and to build capacities in fields related to energy networks. Participants called upon secretariats and organizations concerned with electrical interconnection, as well as the League of Arab States, specialized Arab organizations and other Arab and regional organizations, to enhance regional cooperation in the field of electrical and gas networks; to intensify efforts for the implementation of the resolutions of the Arab Economic, Social and Development Summit on the study of comprehensive Arab electrical interconnection, making use of natural gas to produce and export electricity; to establish a coordination control centre; and to prepare for the establishment of an electrical energy market.

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Introduction

1. The ESCWA region lacks the necessary resources to meet its energy needs, forcing a large number of its countries to import despite its important oil and gas sectors. In spite of efforts to strengthen power supply in various Arab countries, around 20 per cent of the population are deprived of energy services, particularly in rural and remote areas. For several decades, Arab countries have been experiencing a trend towards cooperation in the field of electrical interconnection and construction of gas pipelines. Despite significant progress in this field, achieving the integration of these networks and making the utmost use of them still require further steps. It should be noted that the expansion of electrical interconnection range and the optimal utilization of natural gas reserves constitute a strategic investment that contributes to achieving economic integration between countries of the region and in international energy markets, particularly in Europe.
2. The Arab Economic, Social and Development Summit held on 20 January 2009 issued the Kuwait declaration in which Arab leaders stressed the strengthening of Arab cooperation in the field of energy as a means of achieving sustainable development, strengthening the Arab electric networks, and establishing an Arab electrical energy market, as well as strengthening and expanding natural gas networks. The Summit issued as well a decision to accelerate the achievement of Arab electric networking projects and work on the completion of the ones already launched. It urged Arab countries to take necessary steps to overcome obstacles to the implementation of these projects.
3. In this context, ESCWA is keen to support member countries in their efforts to strengthen cooperation in the field of energy networks and to issue necessary policies in this regard. ESCWA prepared a number of relevant studies and is also cooperating with the Council of Arab Ministers Responsible for Electricity in the League of Arab States.
4. Therefore, in line with international and regional conferences and conventions on energy, and in view of the importance of energy networks and their role in supporting sustainable development in the region and contributing to the achievement of regional integration, ESCWA included the Expert Group Meeting on the Role of Energy Networks in Regional Integration in its programme of work for the 2008-2009 biennium.
5. The objective of the meeting was to review and discuss energy network projects (electrical networks and natural gas lines) and to look at their role in achieving regional integration and supporting sustainable development in the region. It aimed as well at drawing lessons from regional and interregional experiences, and indentifying projects that can be implemented in the future to support regional integration in this field. The meeting discussed the prospects of establishing an energy market in the region, the potential electrical interconnection with European countries, and the opportunities to integrate large-scale, renewable energy projects in network interconnections.

I. RECOMMENDATIONS

6. Based on documents presented and discussions raised during the sessions, participants concluded with a set of recommendations addressed to member countries, as well as to secretariats and bodies concerned with electrical interconnection, to ESCWA, to the League of Arab States and to Arab and regional organizations.

A. RECOMMENDATIONS ADDRESSED TO MEMBER COUNTRIES

- (a) To strengthen national networks for the transfer and modernization of electricity, as well as to enhance reliability in order to allow for electric energy imports through countries with favourable geographical locations;
- (b) To issue and adopt necessary policies in order to improve the performance of the electricity market and to pave the way for the establishment of an electrical energy market in the region;

(c) To make use of available experiences in the field of electrical interconnections in European countries in order to build technical capacities, transfer knowledge, issue policies and prepare necessary plans to protect the networks;

(d) To prepare electrical networks to make use of and link to large-scale renewable energy sources;

(e) To encourage the private sector to invest in projects of electrical transfer and production networks, to provide it with sufficient guarantees, and to encourage it to adopt long-term contracts;

(f) To adopt policies that encourage the expansion of the use of gas, in particular in the field of electrical energy production; to take into account the needs of large gas consumers; to plan for the establishment of national networks; and to look for feeding possibilities from the regional network;

(g) To ensure that the needs of rural and remote areas of gas supplies are met, and to encourage them to develop productive projects whenever means and resources are available;

(h) To adopt legislation, policies and procedures that would encourage the private sector to invest in projects common to the countries of the region;

(i) To encourage industries related to energy networks and their settlement;

(j) To raise the level of awareness and knowledge in sectors related to energy networks.

B. RECOMMENDATIONS ADDRESSED TO SECRETARIATS AND BODIES CONCERNED WITH ELECTRICAL INTERCONNECTION

(a) To look with member countries into the enhancement of the Eight Electric Interconnection Project through the establishment of new interlinking lines with an appropriate voltage and high transfer power through Jordan and the Syrian Arab Republic. In parallel, to implement the linking project of Saudi Arabia-Egypt and Saudi Arabia-Yemen in order to maximize the benefits of such links, and to seek to make use of the new suggested lines to link to the Arabian Gulf and European networks;

(b) To follow-up the implementation of the decision of the Arab Summit on the establishment of a coordination control centre in one of the countries of the region to undertake the tasks of coordination, control and trade among these countries, and between them and the neighbouring regions, as well as to establish a market for electrical energy trade.

C. RECOMMENDATIONS ADDRESSED TO ESCWA IN THE FRAMEWORK OF ITS COOPERATION WITH THE LEAGUE OF ARAB STATES AND ITS SPECIALIZED ARAB ORGANIZATIONS

(a) To provide technical support to member countries, secretariats and bodies concerned with electrical networks to complete necessary studies or participate in relevant studies undertaken by regional bodies;

(b) To develop and implement regional programmes to build capacities in fields related to the development of energy networks in the region, and support their role in achieving sustainable development;

(c) To offer technical support to member countries in order to benefit from available experiences in other regional committees, different regional organizations and neighbouring blocs in the field of policy-making and project implementation;

(d) To organize workshops for the participation of the private sector in energy networks projects, to restructure the electricity sector and to review laws governing it;

(e) To inform secretariats and bodies concerned with interconnections of all relevant activities organized by ESCWA;

(f) To continue to assess the electrical interconnection status.

D. RECOMMENDATIONS ADDRESSED TO THE LEAGUE OF ARAB STATES,
AS WELL AS ARAB AND REGIONAL ORGANIZATIONS

(a) To intensify efforts in order to accelerate the implementation of decisions taken at the Arab Summit on the integrated Arab electrical interconnection study and to utilize gas in order to generate and export electricity;

(b) To look into the potential use of regional gas networks to export and/or import gas;

(c) To promote regional cooperation in the field of national gas networks through the exchange of experiences, capacity-building, joint ventures, and making use of private-sector funding and its participation in the gas industry.

II. TOPICS FOR DISCUSSION

A. CURRENT SITUATION AND FUTURE PLANS FOR ELECTRICAL
INTERCONNECTION IN THE ESCWA REGION

7. Participants discussed five papers on the following topics:

(a) *The Eight Electric Interconnection Project*: (Jordan, Syrian Arab Republic, Turkey, Iraq, Palestine, Lebanon, Libyan Arab Jamahiriya and Egypt). In this regard, the delegate of the secretariat of the Eight Electric Interconnection Project presented the background of the project, conventions governing it and its management system. The delegate pointed to the exchanged energy between participating parties, future prospects of the project, development requirements and its most important accomplishment to date;

(b) *The Gulf Cooperation Council (GCC) Electrical Interconnection Project*: the delegate of the GCC Interconnection Authority (GCCIA) presented a brief history of the GCCIA, its establishment, vision, tasks and the distribution of shares in its capital. He also reviewed the Interconnection Project, stages of its implementation, its desired benefits, the amount of exchanged energy between countries and relevant legal agreements;

(c) *The Maghreb Electrical Interconnection Project*: (Tunisia, Algeria, Libyan Arab Jamahiriya, Morocco and Mauritania). The delegate of the League of Arab States reviewed developments achieved in the field of energy exchange between Arab Maghreb countries, and the strategy aimed to integrate the Maghreb network into the European one;

(d) *Electrical interconnection between the Sudan, Egypt and Ethiopia*: the consultant at the Egyptian Ministry of Electricity and Energy reviewed the features of this interconnection through a two-part study. The first part discussed the current situation and future prospects of the demand on electricity in the Sudan, Egypt and Ethiopia, as well as the potential cooperation between those countries. The second part examined the feasibility of interconnecting those countries and the main obstacles to the implementation of the project; and

(e) *Integration of electrical interconnection projects – considerations and potentialities*: ESCWA presented this paper to review the current status of electrical interconnection in the region, future interconnection projects with European countries and the possible benefit from European expertise. The study reviewed contractual associations and technical conditions required to ensure the success of integrated

electrical interconnection, as well as difficulties impeding the integration of interconnection projects and the means and possibilities to overcome them. The study concluded with a set of recommendations.

B. ROLE OF ENERGY NETWORKS IN REGIONAL INTEGRATION, EXISTING TECHNICAL
CONSIDERATIONS, ELECTRICAL INTERCONNECTION EXPERIENCES IN EUROPE
AND POTENTIAL ARAB-EUROPEAN COOPERATION

8. Participants discussed seven papers in this context:

(a) *Cooperation in the energy sector and dialogue in the framework of the International Energy Forum*: the delegate of the International Energy Forum presented a paper outlining the desired gains of regional integration through energy networks and stressed the importance of investing in them. He also emphasized the necessity to develop the institutional and legislative framework and technical compatibility in achieving such integration, in addition to the importance of political support and making use of other experiences in the field of energy networks;

(b) *Cross-border electricity market in Europe*: the representative of the Electricité de France (EDF) company reviewed the properties of electrical energy trade, as he classified buyers in three categories, namely single buyer, pool and open market. He discussed the relationship between local and global markets, and the impact of the local market on the cross-border market, referring to the short- and long-term electricity trade contracts, as well as service contracts, and how to deal with the losses, transfer fees and auxiliary services;

(c) *Role of electricity networks in preserving the environment and mitigating climate change*: a climate change, environment and energy expert from Egypt presented information on projects for the transfer of oil, gas and electricity in Arab countries, and the impact of using cleaner fuel on the reduction of emissions and mitigating climate change.

(d) *Solar electricity for regional consumption or export: which way to lean?* The delegate of the Euro-Mediterranean Energy Market Integration Programme (MED-EMIP) presented a paper with information on the prices of gas and electricity in the Middle East, North Africa, Russia and the United States of America, as well as the curves of electrical loads in a number of Arab countries. The paper noted that energy cannot be separated from politics and economy, and highlighted the existence of technological, economic and political considerations and variables to be taken into consideration when making decisions on the consumption or export of solar energy within the region;

(e) *Technical elements of interconnections*: the EDF delegate presented the types of electrical interconnection, listed technical advantages and disadvantages, reviewed adopted rules and pointed to experiences in Europe and in Arab countries;

(g) *Technical and financial aspects for integrating large-scale, renewable energy in electric grids*: ESCWA made a presentation on overall renewable energy sources, with emphasis on its application on a large scale in the Arab region. The ESCWA representative indicated that the generation of electricity out of large-scale, renewable energy faces a series of economic and technical challenges;

(h) *The need for an electricity trade market in the region*: ESCWA presented a paper on the experience in electrical energy exchange in the ESCWA region, and the extent to which desired benefits of electrical interconnection are met, in particular economic and environmental benefits. The paper pointed to difficulties and obstacles hindering electrical energy trade through interconnection lines, and to the necessity of establishing an electrical energy market in the region. The paper reviewed desired benefits of such a market, the requirements for its establishment and favourable circumstances, as it highlighted the necessity to adopt necessary policies and measures to prepare for its establishment, as well as to make use of other experiences and the transfer of necessary knowledge.

C. GAS NETWORKS: CURRENT SITUATION AND FUTURE PLANS

9. Participants discussed three papers in this context:

(a) *Natural gas: transportation and trading.* The representative of ESCWA reviewed in this paper gas reserves, production, and consumption on the regional and global levels, as well as the transfer of compressed gas through pipes and liquefied gas through maritime tankers. The paper highlighted the absence of an international price of gas, due to the challenges facing the transfer of gas compared with oil. It pointed out that the share of Arab countries of gas trade represents around 20 per cent of the global rate, and addressed the main provisions of gas contracts, to conclude with stressing the necessity to develop gas transport and trade through pipes between Arab countries;

(b) *Role of gas networks in supporting sustainable development and integration in Arab countries:* In this paper, ESCWA reviewed the role of natural gas in sustainable development and regional integration in the Arab region and the benefits of establishing an Arab network for gas. The document addressed projects of current and planned gas networks in the Arab region and its neighbouring countries, as it highlighted the challenges to such projects and concluded with a set of recommendations;

(c) *Regional integration of Arab gas networks, prospects and challenges:* The consultant of the Minister of Energy and Industry in Qatar discussed in this paper the strategies of gas use, and compared the use of oil and gas in the Arab region as he highlighted the main features of gas, in particular environmental ones. He discussed the rationales for establishing an Arab network and the challenges of implementing such a network, referring to the historical, cultural, economic and political ties between Arab countries, which enhance the ability to cooperate in the field of all forms of energy.

D. NATIONAL PAPERS ON ENERGY NETWORKS AND THEIR ROLE IN REGIONAL PROJECTS

10. Delegates presented in this session seven papers on the projects of Arab interconnections and natural gas lines, as well as the efforts exerted in this field within countries and in the region, and the role of these projects in achieving regional integration. Presentations were as follows: Saudi Arabia, "Electric interconnections with neighbouring countries"; Yemen, "SYIEP Project"; Syrian Arab Republic, "Role of the Syrian Arab Republic as a regional centre for the transition of electrical and fuel energy, as well as regional integration"; Palestine, "Palestinian electrical interconnection project with neighbouring countries"; Egypt, "Egypt experience in coordinating between interdependent countries"; United Arab Emirates, "United Arab Emirates Interconnections"; and Oman, "Current situation and future prospects of energy networks". These papers focused on experiences and lessons learned from energy networks projects (electrical interconnections and gas lines), and on the challenges to these projects, as well as the need to exert more efforts to overcome them.

E. ROUNDTABLE ON THE PROSPECTS OF COOPERATION AND REGIONAL AND INTERREGIONAL COOPERATION IN THE FIELD OF ENERGY NETWORKS

11. This roundtable was organized to discuss topics raised during the meeting sessions and to allow for experts to comment thereon.

12. Mr. Abd El Halim Qassem, Vice-Chairman of ESCWA Committee on Energy and representative of the Syrian Arab Republic, stressed the need to link between the GCC network and the Eight project, which would facilitate the interconnection with European countries. He pointed to the need to benefit from the experience of other countries, and to the importance of organizing a workshop on restructuring the electricity sector and discussing electricity laws.

13. Mr. Ali Bin Hamad Al Ghaferi, member of ESCWA Committee on Energy and representative of Oman highlighted the importance of activating the role of regional secretariats and bodies concerned with interconnections, in order to achieve comprehensive Arab electrical interconnection.
14. Mr. Imad Abu el-Naaj, representative of the League of Arab States, affirmed the necessity to cooperate and coordinate between ESCWA and the Council of Arab Ministers Responsible for Electricity as he pointed to the importance of the private sector participation and the potential cooperation between ESCWA and the League of Arab States to prepare a seminar in this regard.
15. Mr. Saad Al-Jandal, representative of Kuwait, pointed to the importance of regional cooperation and integration to achieve development in the ESCWA region, capacity-building and using diversified energy sources, including renewable energy, as priorities. He reaffirmed the need to diversify energy in order to improve its efficiency, use nuclear energy, enhance relevant legislation and make use of available expertise in ESCWA member countries.
16. Ms. Fatima Mustapha Ali, representative of Egypt, pointed to the importance of electrical interconnection and its role in enhancing cooperation and synergy between countries, and the necessity to coordinate in this field between different stakeholders.
17. Mr. Adnan I. Al-Mouhaisen, executive secretary of the GCCIA, indicated that the Gulf interconnection is characterized by the allocation of an interconnection network that does not rely on the internal networks of member countries. He indicated that a number of member countries have largely succeeded in liberalizing the electricity market, hoping to make progress in the preparation of the comprehensive Arabic electrical interconnection.
18. Mr. Emad Al-Din Adly, general coordinator of the Arab Network for Environment and Development (RAED), discussed the potential civil society participation in the transfer of knowledge in the field of energy and climate change, and the necessity to call upon the media to contribute to awareness activities. He assured that the Forum for Environment magazine issued by RAED invests its capacities to raise awareness.
19. Mr. Ragui El-Etreby, advisor to the Ministry of Foreign Affairs in Egypt, stressed that the matters of energy, cooperation, regional integration and global energy security are of the priorities of national policies, emphasizing the need to deliver the recommendations of the meeting to competent authorities and the important role of the media.
20. Mr. Yassir A. Al-Turki, consultant to the Deputy Minister of Electricity in Saudi Arabia, stressed the importance of establishing a committee to organize the sector in all countries, and the necessity to enact relevant legislation. He spoke of the difficulties facing electrical interconnection, and the necessity to present interconnection projects to investors from a convincing economic perspective.
21. All participants emphasized the importance of the meeting and topics addressed, commending the good organization and expressing their gratitude to ESCWA for its work.
22. Ms. Anhar Hegazi, Chief of ESCWA Sustainable Development and Productivity Division, commended the close cooperation with the League of Arab States, and the Council of Arab Ministers Responsible for Electricity. She pointed to existing partnerships with the Council of Arab Ministers for Environment and Water, and expressed her hope that the current cooperation evolves to ensure benefits capable of advancing regional cooperation for sustainable development.
23. At the closing session held on 23 December 2009, participants discussed and adopted the proposed recommendations.

III. ORGANIZATION OF WORK

A. DATE AND VENUE

24. The Expert Group Meeting on the Role of Energy Networks in Regional Integration was held at the United Nations House in Beirut, on 22 and 23 December 2009.

B. OPENING

25. Ms. Anhar Hijazi, Chief of ESCWA Sustainable Development and Productivity Division, made the opening statement, in which she stressed the importance of energy networks and their role in supporting sustainable development and achieving regional integration. She indicated that expanding the scope of electrical interconnection and the best use of natural gas reserves are a strategic investment that would achieve economic integration between the countries of the region and facilitate their integration in global energy markets. Ms. Hegazi talked about the Kuwait Declaration issued by the Arab Economic, Social and Development Summit held on 20 January 2009, in which Arab leaders affirmed the need to enhance Arab cooperation in the energy field as a means to achieve sustainable development, enhance and strengthen electrical interconnection networks and natural gas lines, and establish an Arab market for electrical energy. She commended the efforts of member countries in implementing electrical interconnections and gas network projects, and the role of ESCWA in supporting efforts exerted by member countries in order to strengthen cooperation in the field of energy networks, including the enactment of necessary policies.

C. ATTENDANCE

26. The meeting brought together 40 experts from ESCWA member countries as well as from regional and civil society organizations active in this field, as shown in the list of participants.

D. AGENDA

27. The agenda included the following main topics:

- (a) Current situation and future plans for electrical interconnection in the region.
 - The Eight Electric Interconnection Project;
 - The Gulf Cooperation Council Electrical Interconnection project;
 - The Maghreb Electrical Interconnection project;
 - Electric interconnection between the Sudan, Egypt and Ethiopia;
 - Integration of electric interconnection projects – considerations and potentialities.
- (b) Role of energy networks in regional integration: general perspective.
 - Cooperation in the energy sector and dialogue in the framework of the International Energy Forum;
 - Role of energy networks in preserving the environment.
- (c) Electrical interconnection experiences in Europe and potential Arab-European cooperation.
 - Cross border electricity market in Europe;
 - Solar electricity for regional consumption or export: which way to lean?
- (d) Technical considerations and diversification of electric interconnection sources: opportunities and potentialities.

- Technical elements of interconnections;
 - Technical and financial aspects for integrating large scale renewable energy in electric grids;
 - The need for an electricity trade market in the region.
- (e) Gas networks: current situation and future plans.
- Natural gas: transportation and trading;
 - Role of gas networks in supporting sustainable development and integration in Arab countries;
 - Regional integration of Arab gas networks, prospects and challenges.
- (f) National papers on energy networks and their role in regional projects.
- (g) Roundtable on the prospects of cooperation and regional and interregional cooperation in the field of energy networks.
- (h) Recommendations.

E. ASSESSMENT

28. An assessment form was distributed to participants to evaluate the meeting. The results were as follows:

| (a) Targets of the meeting | | | | |
|---|----------------------|--------------------------------|--------------------------------|---------------------------|
| Achieving the defined targets | Not achieved (0%) | Achieved to some point (0%) | Achieved sufficiently (40%) | Largely achieved (60%) |
| (b) Arrangements, presentations and scientific materials | | | | |
| Organizational arrangements before and during the meeting | Bad (0%) | Average (11%) | Good (27%) | Very good (62%) |
| Clarity of presentations | Bad (0%) | Average (8%) | Good (38%) | Very good (54%) |
| Quality of scientific material presented | Bad (0%) | Average (11%) | Good (39%) | Very good (50%) |
| (c) Usefulness of the meeting as to: | | | | |
| Sharing information between participants | Bad (0%) | Average (0%) | Good (69%) | Very good (31%) |
| Establishing new and useful work communications | Bad (0%) | Average (8%) | Good (57%) | Very good (35%) |
| Making use of the meeting in the future | Bad (0%) | Average (19%) | Good (46%) | Very good (35%) |
| (d) Requiring the implementation of follow-up activities | | | | |
| | No (15%) | | Yes (85%) | |

29. The analysis of the responses to the 27 forms filled shows the following:

- (a) The expert group meeting targets were 100 per cent achieved;
- (b) 89 per cent of participants commended the good quality of organizational arrangements before and during the meeting;
- (c) 92 per cent of participants commended the clarity of presentations and the quality of the scientific material, whereas all participants pointed to the usefulness of the meeting as an opportunity to share information and expertise and establish communications. It was deemed to pave the way for future benefit from the meeting outputs;
- (d) More than 85 per cent of participants called for the implementation of follow-up activities.

Annex

LIST OF PARTICIPANTS

A. ESCWA MEMBER COUNTRIES

Bahrain

Mr. Ibrahim Mohammed Makki Omran
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