Roundtable on Opportunities and Challenges in the Water, Sanitation and Power Sectors in the Middle East and North Africa Region

Summary of Proceedings

May 26-28, 2003
Beit Mary, Lebanon
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Acknowledgements

This report prepared by Anna Bjerde, Fanny Missfeldt-Ringius and Lizmara Kirchner (World Bank) and Elisabetta Capannelli and Manuela Chiapparino (PPMI) and summarizes the discussions held during the Roundtable on Opportunities and Challenges in the Water, Sanitation and Power Sectors in the Middle East and North Africa Region (MENA), which took place in Beit Mary, Lebanon May 26-28, 2003. It also includes electronic copies of the presentations made at the Roundtable and the list of attendees.

The event was organized by the World Bank Middle East and North Africa Region’s Energy and Water Unit in collaboration with the Joint European Commission/World Bank Program on Private Participation in Mediterranean Infrastructure (PPMI). Sponsors included the Public-Private Infrastructure Advisory Facility (PPIAF), the Energy Sector Management Assistance Program (ESMAP), and the Water and Energy Department of the World Bank.

The task team wishes to thank the participants of the roundtable for making the discussions rich and interesting. A special thanks is extended to the Ministry of Energy and Water in Lebanon for hosting the event. The team also wishes to thank Omar Razzaz, Country Manager and the staff at the World Bank’s office in Beirut for their support, as well as Ms. Sylvie Brebion for her assistance with the event logistics. Finally, we would like to thank the management team at the World Bank for their guidance and support to the event, notably Françoise Clottes, Sector Manager, Middle East and North Africa Region and Jamal Saghir, Director of the Energy and Water Department.
# Table of Contents

1. Background ................................................................. 1
2. How can the region catch up in attracting capital and improving sectors’ operational and financial performance? .................................................. 3
3. How can tensions in objectives between public and private interests be managed? ................................................................. 5
4. What is the best subsidy mechanism to ensure that the poor have access to services? ................................................................. 7
5. What assistance should the international community, including the World Bank focus on? ................................................................. 9
6. Conclusions ................................................................................... 11

Appendix 1: Roundtable Program ...................................................... 13
Appendix 2: List of Speakers and CV Synopsis ....................................... 16
Appendix 3: Water and Power Brochures ............................................... 23
Appendix 4: List of Registered Participants ........................................... 27
### Abbreviations and Acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFD</td>
<td>French Development Agency</td>
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<tr>
<td>CCGT</td>
<td>Combined Cycle Gas Turbine</td>
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<td>DFID</td>
<td>UK Department for International Development</td>
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<td>ESMAP</td>
<td>Energy Sector Management Assistance Program</td>
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<td>FDI</td>
<td>Foreign Direct Investment</td>
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<td>GCCIA</td>
<td>Gulf Cooperation Council Interconnection Authority</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GTZ</td>
<td>German Technical Cooperation</td>
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<td>IEA</td>
<td>International Energy Agency</td>
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<td>IPP</td>
<td>Independent Power Producer</td>
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<td>JBIC</td>
<td>Japan Bank for International Cooperation</td>
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<td>JICA</td>
<td>Japan International Cooperation Agency</td>
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<tr>
<td>KfW</td>
<td>German Financial Cooperation</td>
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<td>MEDRC</td>
<td>Middle East Desalination Research Center</td>
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<td>MIGA</td>
<td>Multilateral Investment Guarantee Agency</td>
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<tr>
<td>MENA</td>
<td>Middle East and North Africa</td>
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<tr>
<td>NGO</td>
<td>Non-governmental Organization</td>
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<tr>
<td>NORAD</td>
<td>Norwegian Agency for Development</td>
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<tr>
<td>O&amp;M</td>
<td>Operation and Maintenance</td>
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<tr>
<td>PPA</td>
<td>Power Purchase Agreement</td>
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<td>PPI</td>
<td>Private Participation in Infrastructure</td>
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<td>PPIAF</td>
<td>Public-Private Infrastructure Advisory Facility</td>
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<td>PPMI</td>
<td>Private Participation in Mediterranean Infrastructure</td>
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<td>PPP</td>
<td>Public-Private Partnership</td>
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<td>SWCC</td>
<td>Saline Water Conversion Corporation</td>
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<td>USAID</td>
<td>United States Agency for International Development</td>
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Roundtable on Opportunities and Challenges in the Water, Sanitation and Power Sectors in the Middle East and North Africa Region

Summary of Proceedings

1. Background

Over the past few years, there have been significant activities in the infrastructure sectors in the Middle East and North Africa (MENA) region. Infrastructure growth has provided services to the population and facilitated economic growth. Providing infrastructure services in parts of the region, including the efficient provision of safe water and sanitation and electricity, continues to be a challenge. Constraints to the provision of these services place significant burdens on public health, economic development and growth.

Private participation in infrastructure brings the promise of better, faster and cheaper ways in providing services, helps develop economies and improves lives. However, foreign direct investment in infrastructure, which has traditionally been low in the region, has further declined in recent years. Partnership between the public and private sectors is required for this process to be efficiently managed. Key reforms in the existing utilities, sector restructuring, increased competition, regulation and protection of the poor, are all elements that can ensure the success of this partnership.

In response to the opportunities and challenges in water supply, sanitation and power in the MENA region, a Roundtable on Opportunities and Challenges in the Water, Sanitation and Power Sectors in the Middle East and North Africa Region was organized on May 26-28, 2003 in Beit Mary, Lebanon. The aim of the Roundtable was to discuss how to move from the identification of reform needs in the water and power sectors into actions.

The two-day Roundtable gathered around 150 participants from governments, power and water utilities, operators, investors, NGOs and the donor community. Regional participants came from Algeria, Djibouti, Iran, Jordan, Lebanon, Morocco, Oman, Saudi Arabia, Tunisia, West Bank and Gaza, and Yemen. Private sector representatives came from ONDEO, Siemens, ABB, Lyonnaise des Eaux, Tractebel, Veolia Water and Electricité de France (EDF). The donor community included the African Development Bank, the European Commission, French Development Agency (AFD), German Technical Cooperation (GTZ), Japan International Cooperation Agency (JICA), Japan Bank for International Cooperation (JBIC), UK Department for International Development (DFID), German Financial Cooperation (KfW), Norwegian Agency for Development (NORAD), United States Agency for International Development (USAID), and the World Bank.

Participants - Breakdown (Total - 150)

- Governments & Utilities: 45%
- Donors: 25%
- Private Sector: 14%
- Other*: 16%

* Private financing institutions, academics.
The Roundtable was held in two days. The first day focused on (i) the linkages between sector reform and economic growth and competitiveness; and (ii) the role of reform in improving service and attracting investment and expertise. The second day focused on the role of the private sector in improving sector performance and how to mitigate risks. Break out groups on key topics around these focus areas allowed for more in-depth discussion. The Roundtable concluded with two panels, the first one attended by donors and the second one by the private sector.

This report is structured around four key themes identified as important early on and discussed in more detail in break-out groups. These themes are: (i) how the region can catch up in attracting capital and improving the sectors’ operational and financial performance; (ii) how tensions in objectives between public and private interests can be managed; (iii) how to set subsidies keeping the interests of the poor in mind; and (iv) how the international community can respond to the needs of the countries in the region in the power and water and sanitation sectors.

The workshop program can be found in Appendix 1. A list of participants is enclosed in Appendix 2. A synopsis of main speakers’ CVs is attached under Appendix 3. A brochure on the status of the energy and water sector in the region is in Appendix 4. Copies of all presentations made are included in a CD ROM attached to this report. All seminar materials can also be downloaded by accessing the World Bank MENA Region Website at http://www.worldbank.org/mena or the PPMI web site at http://www.ppmi.org/Roundtable-Beirut.htm.
2. How can the region catch up in attracting capital and improving sectors’ operational and financial performance?

Foreign Direct Investment (FDI) in the Middle East and North Africa Region has been low when compared to other regions. Private sector investment in water amounted to a mere US$60 million from 1990 to 2001 (or 1 percent of private funds invested in water worldwide), while investment in the electricity sector was slightly higher at 4 percent of private funds invested worldwide.

The Roundtable participants identified a number of reasons that can explain the lack of private sector funding in the region, such as:

- Lack of government commitment
- Lack of cooperation on regional integration of power and water markets
- Unclear regulatory frameworks
- Low public awareness on the benefits of reform and private sector participation
- Decline in private sector interest

Many participants stressed that often governments in the region fail to act, and have taken limited actions to build an environment conducive to private sector participation and investment. If governments were willing to commit to reform and develop a favorable investment climate, foreign capital could be attracted more readily. In terms of investment needs, projects have to be material in scope and able to generate reasonable profits to attract private operators. This often requires that government commit to invest in infrastructure before the private sector comes in or in cooperation with the private sector. Such partnerships can help keep financing needs to a reasonable level and makes it attractive for the private sector to invest.

Increased cooperation and integration on power and water issues in the region were perceived as another avenue to make investment projects more attractive. Participants at the Roundtable discussed an example of successful regional collaboration on power, the Nordic Power Pool (Nordpool). The Nordpool enables the trade of electricity on a spot market and includes companies from Denmark, Norway, Sweden and Finland. The development of this spot market evolved over a period of forty years, driven and closely followed by governments in this region. The Nordpool itself was launched in 1991, and since then, the trading volume has reached close to 900TWh per year. The key elements that contributed to the establishment of the power trade were the sustained political will in the region, the technical and management support provided from the power industry, and the support of other stakeholders (e.g., customers).

In the Middle East and North Africa Region, many options for interconnection exist, including the establishment of a Mediterranean Ring. Efforts for the full interconnection of the Gulf States are underway. If completed, the Gulf Cooperation Council Interconnection Authority (GCCIA) could become a key player in a regional power market. A first study to connect the six Gulf countries was carried out in 1986 and updated in 1990-92. The study is set to be updated again by mid-2003, and at this time, interconnection between the Gulf States is scheduled to be implemented between 2004-2010.

Another issue raised by participants was the lack of clarity in the regulatory framework across the region. In many countries regulatory bodies do not exist, or if they do, they are not truly
independent and lack the necessary authority and/or capacity to carry out their mandate, especially the recently established regulators. Sound legal and regulatory frameworks are essential in ensuring the long-term sustainability of the water and power sectors. Regulators should be independent and the application of rules needs to be sufficiently transparent, with parties held accountable for their actions and responsibilities.

A number of comments raised by participants related to the nature of the regulatory body itself, its independence was raised several times as a very important concept. Participants agreed that all stakeholders, including consumers, should be represented on the board of regulatory bodies. One participant suggested that the board of regulators should represent the interests of the nation, where board members are appointed in their individual capacity, as opposed to becoming a platform for constituencies to fight one another. In addition, specific country circumstances should be considered when setting up a regulatory body.

Finally, public awareness of the benefits of private investments in water and power are limited. A commonly held view among the general public is that the involving the private sector in the financing and provision of infrastructure will result in the sale of publicly owned assets at a discounted price to foreign companies. This contributes to perception that there would be a “loss of sovereignty” from privatization. While some of these concerns may be justified under specific circumstances, the public needs to be made aware that private sector involvement, when properly implemented, can bring better services, lower prices and improved economic performance.

When it comes to direct private investments, there has been a significant decline in private sector interest. As a result of the global economic downturn, major private sector players, in particular operators, have reduced their presence in the region due to financial difficulties, followed by a series of restructuring. Normally, during these hard pressing times, the private sector becomes increasingly risk-averse. This situation, coupled with the perceived high-level security and political risks currently associated with the region, are not conducive to encouraging investment.

At the same time, a new breed of domestic, regional and smaller foreign operators/investors have emerged, such as medium sized municipal operators and partnerships between consulting firms and financial institution. These new players present opportunities for innovative partnerships that should be explored by sector stakeholders.

### Conditions for Private Sector Participation Discussed at the Roundtable

<table>
<thead>
<tr>
<th>Governments to ensure:</th>
<th>Government to be:</th>
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<tr>
<td>- Political commitment;</td>
<td>- Capable of negotiating fair contract conditions;</td>
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<tr>
<td>- Adequate regulatory framework;</td>
<td>- Sufficiently equipped to measure and enforce contract compliance by private parties.</td>
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<td>- Clear and transparent procurement;</td>
<td>- Private Sector to be:</td>
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<tr>
<td>- Government guarantees;</td>
<td>- Willing to take some degree of risk;</td>
</tr>
<tr>
<td>- Mitigate perception of country risk;</td>
<td>- Geared towards the long-term;</td>
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<tr>
<td>- Develop domestic and capital markets.</td>
<td>- Engaged in local partnerships, that can facilitate local financing of investments.</td>
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Source: Contribution from Marina Meuss, GTZ (2003)
3. How can tensions in objectives between public and private interests be managed?

Tensions between public and private sector interests in the area of water and power are not limited to the Middle East and North Africa region. These tensions stem from the fact that the water and power sectors need to respond to a wide range of political and social demands, while at the same time having to be concerned with the economics of producing water and power. Among the issues that need to be addressed is the appropriate management of water and energy resources at the country and regional levels, as a way to ensure that a sustainable level of these resources will be available for future generations.

The Roundtable raised the issue that often times public utilities are inefficiently operated, a situation that leads to significant budget deficits. Many public companies in the region are overstaffed, since in many instances public utilities have to live up to an implicit social contract whereby they should offer employment. As a result, governments are under strong pressure to maintain the employment numbers and are unable to sustain sector and utility reform. 

It is generally recognized that the private sector has a better track record at enhancing the efficiency in operations than the public sector. This coupled with investment requirements present a strong case for private sector involvement. However, some highly publicized private sector experiences have failed worldwide, and engendered a movement against privatization of and private sector participation in public enterprises. The increased investment risk in developing countries has also led to the private sector withdrawing from the developing markets.

In order to reduce tensions between the public and private sectors, there is a need for a clear identification of: (i) goals of the public sector reform, (ii) respective roles of the private and public sectors, and (iii) potential issues such as tariff increases, regulatory accountability, etc. that may or may not add risk to the project. These identified goals, roles and issues should be realistic and commonly directed towards achieving sustainable cost recovery and affordable access, and should not be overly ambitious, as failure to meet them will lead to disappointment, which may in turn have a backlash on future privatizations to come.

An issue at the heart of the debate of private sector involvement is to what extent the private sector should take responsibility for the production of water and electricity. Concessions in the water sector and Independent Power Producers (IPPs) in the power sector have become the most common modes of private sector involvement in the region. The responsibilities and duties of the public and private partners have to be clear and transparently enforced. Good and enforceable contracts are essential to the success of good public-private partnerships.

Another important issue is the appropriate timing of private sector involvement. Participants stressed that it is advisable for governments that are willing to increase public-private partnerships (PPP) in a particular infrastructure sector to first restructure and reform the sector and its operators/utility. In particular, this would include, among other actions, developing a clear strategy/vision for the sector and for PPP, unbundling and liberalizing the sector, creating a transparent regulatory environment, restructuring the utility/utilities, building capacity with the public sector to deal with the private

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1 Combined with Power Purchase Agreements (PPA).
sector partners. Unless this is done, private sector involvement has the potential of being detrimental. As the aim of reform in the water and power sectors is to reduce costs and provide better services to customers, restructuring and PPI should lead to the establishment of a more competitive market.

Reform and restructuring entail the need for capacity building in the public sector, since public sector civil servants need to be prepared for negotiations with the private sector. Raising public awareness for the needs of private sector involvement and the potential benefits of such a partnership is equally important.

Participation of local private investors can lead to a real long-term partnership between the public and the private sector by bringing together local and foreign owners. A good example for local private financing in the power sector is the co-financing of 75 percent of a US$285 million investment for a 385 MW(e) combined cycle gas turbine (CCGT) plant in northern Morocco through local banks (ONE, 2002).

Any process of reform and restructuring needs to take into account those that are bound to loose, at least in the short term, from such reform. Transition costs need to be actively identified and addressed, these costs can emerge, for example, as a result of a temporary increase in unemployment. As the water and power sectors in the process of reform are commonly giving up some of their previously assumed social responsibilities, these need to be catered for in other ways. An example is the need to continue to provide basic services to those who cannot afford them. While tariffs may be raised during restructuring, subsidies and lifeline rates could be maintained. Table 2 below summarizes a few pillars for successful collaboration between the public and the private sector, and how they can be reached.

<table>
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<th>Critical Success Factors for Public-Private Partnerships</th>
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<tr>
<td><strong>Pillars for success:</strong></td>
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<tr>
<td>• Clear, realistic goals of public sector reform</td>
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<tr>
<td>• Clear and specific roles of all stakeholders</td>
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<tr>
<td>• Clear responsibilities and duties of all stakeholders</td>
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<tr>
<td>• ‘Losers’ of reform need to be avoided</td>
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<tr>
<td><strong>Tools to reach them:</strong></td>
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<tr>
<td>• Adoption and commitment to a long-term strategy of sector development</td>
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<tr>
<td>• Capacity building in the public sector</td>
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<tr>
<td>• Appropriate timing of reform</td>
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<tr>
<td>• Raising public awareness</td>
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<tr>
<td>• Involve the local private sector</td>
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4. What is the best subsidy mechanism to ensure that the poor have access to services?

While the economic viability of public-private services in both the water and the energy sectors often require tariff increases, the water and energy needs of the poor and their ability to pay for services need to be taken into account. Today, 20 percent of the Middle East and North Africa's population live on less than US$2 per day. Moreover, the demand for both water and electricity is growing quickly in the region, mainly as a result of high population growth. In fact, with a regional population growth rate of 2 percent per year, MENA’s growth rates are surpassed only by sub-Saharan Africa (at 2.4 percent). In 2010, the population in the region is estimated to be 20 percent larger than in 2000 (World Bank, 2002). This implies that simply maintaining existing access levels to electricity and water supply will require infrastructure to expand in both sectors to cater for the growing population.

**Subsidies are heavily affected by chosen tariff structures.** When the tariff structure is flat, the poor and rich receive the same per-unit subsidy. Moreover, with larger quantities consumed per capita, the rich may receive a larger per capita subsidy than the poor. This situation is further aggravated when access to water and/or electricity is limited. A participant from Yemen explained that in Sana’a people who are not connected to the water supply network are forced to purchase water from tanks and the price for this water is five times higher than that provided by the public utilities. The same situation can be found in Djibouti. In addition, there are quality concerns with the water from tanks, as it is generally not properly treated, nor under adherence to water quality standards.

On the other hand, progressive tariff structures, used by most countries in the region, entail the incorporation of a flat rate, such as a baseline tariff rate in addition to the connection charge, and a progressive tariff increase that varies with the quantity of electricity and/or water consumed. A participant suggested that, while per capita consumption of the rich may be higher, large poor families often rely on only one connection as well. Thus, these families and rich households may have similar consumption per connection, and the large poor families would be just as penalized through a progressive tariff structure as the richer part of the population would.

The issues above clearly highlight the need for a balanced country-specific approach to subsidies in order to appropriately **target subsidies to the poor**, including what is being subsidized, for whom, and at what level has to be clear. The question of what is being subsidized needs to be addressed by the operating utility. The answer is often times least clear when the operator is a fully vertically integrated public utility. The decisions on what is being subsidized can range from investment in infrastructure expansion or replacement (for example rural investment funds), to medium-term investment in upgrading of existing infrastructure, and/or to operation and maintenance (O&M) costs. However, in order to be sustainable, O&M costs cannot be subsidized for long periods of time. There was consensus among participants that **tariffs have to be set in a transparent manner and provide a minimum basis for cost-recovery** (at least covering O&M). In addition, consumers need to be made aware of the true cost of service. Malta is a country that has successfully made the true cost of water supply service provision clear to water users by reflecting it in their utility bills. This in turn has raised public awareness on the absolute levels of subsidies.
The question of ‘who’ is being subsidized also needs to be clearly answered if the subsidy is to reach its target population. Thus, a subsidy may target an individual user, a local community, or the state at large. The response should take into account country-specific circumstances.

During the Roundtable, numerous ways on improving the way subsidies to the poor are administered were discussed. As discussed above, a flat tariff structure subsidizes all customers at the same rate, while a progressive tariff increase provides subsidies based on quantity/level of consumption. An alternative discussed was to administer the subsidy directly to those who are poor in a country, as opposed to indirectly through the electricity or water bills. Accordingly, the subsidy would be given to those who qualify through coupons or cash redeems, as it is done in the case of Chile. Some participants expressed the view that this system may not be feasible in the Middle East and North Africa Region, due to problems related to corruption, making it difficult for such lump-sum payments to reach the end-user.

Participants thought that it was important to hear the views of the low-income users of water and power to understand what their needs are. Surveys seem to constitute the most appropriate way to solicit such views.

The application of such schemes hinges on the specific institutional framework in place in a particular country. When the public sector is economically sound, the need for private sector intervention may not be necessary.

In the context of public-private partnerships, the question becomes how to engage the (private) operators to take on board the concerns of the poor. Possibilities mentioned by participants ranged from the suggestion to build lifeline tariffs into contracts with operators, which include a set aside subsidy, to output-based targets. In the case of the Casablanca water concession, a target of connecting 45,000 lower income households over a period of five years has been set. Global operating companies, who are typical candidates for public-private partnerships in developing countries, are under increasing pressure to apply the same social standards worldwide, which also applies for the subsidization of poor customers.
5. What assistance should the international community, including the World Bank focus on?

Participants expressed that involvement of donors is desirable at all levels of sector development. Among the most important issues is the involvement upstream during the reform process. This includes:

- Bringing in key political stakeholders to ease the decision-making process with regard to development and reform
- Setting reasonable targets
- Designing long-term solutions
- Discussing with all partners involved including private sector and NGOs
- Discussing with private operators risks associated with the current investment climate, as well as identification of other risks
- Regional integration and cooperation

Participants widely accepted the usefulness of donor involvement, but it was felt that concessionary funds could in general be better targeted and coordinated. One participant suggested that there are instances where donor money brings more benefits to the donors than to the beneficiary itself.

In cases where donor assistance is given directly to a government, that government defines the priorities as part of a contract. Priorities and conditions of the contract need to be well specified at the outset so the government cannot later go back and re-specify them.

Other participants thought that while upstream involvement of donors was important, emergency planning at the local level was equally significant. Moreover, it was felt that too much planning and studies can be frustrating if they do not trigger and/or lead to action.

As private operators are looking for a longer-term perspective on contracts, the participation of donors through risk mitigating instruments can help establish such a perspective. These interventions go beyond the traditional role of the donor as one who merely brings forward financing capital and technical assistance. Views were divided as to whether donors should develop more instruments to mitigate the risk or whether sufficient tools are available. Among the private operators present, some thought that the re-appraisal of existing instruments had already led to a useful portfolio, and that new instruments were not necessarily important. An appropriate appraisal of risks, in addition to the instruments is perceived as equally desirable.

A panel session, with representatives from the donor community and international finance institutions (IFIs) present at the event, provided participants with an overview of each of these entities’ activities and priorities in the MENA region. Some of the themes touched upon by the majority of the panelists included:

- The importance of water in the region as a key resource and ingredient to regional stability
- The fact that governments are in the driver seat and are ultimately responsible for the programs implemented in their countries, donor financing should be viewed as a needed supplement to getting the job done
• The fact that strategy, institution and policies need to be in place and are critical to getting results on the ground and to benefit the poor

Representatives from the World Bank expressed their commitment to listening more to clients and their needs, sharing knowledge that is customized to local conditions and aligned with each country’s particular strategy, and working with clients on solutions, provided there is a clear definition of the needs and/or issues and which direction each country wants to take.
6. Conclusions

The Roundtable only launched a debate on key issues in the water and energy sectors in the Region and that the debate needs to continue. There were no definite answers to all the questions that were raised, nor were there any “one-size-fits-all” solutions generated. Nevertheless, important findings emerged:

• Water is scarce, and yet this valuable resource is wasted, as evidenced by the high rates of losses, inefficient allocation and limited reuse. In addition, pollution of aquifers and excessive extraction threatens resources.

• The region is energy rich and access to power is high in most countries; however, there are important contrasts between countries, regional markets are very limited to date and cost recovery remains limited in many countries.

• The region is lagging behind on reform, which is critical to improve the efficiency and meet the investment needs of the water and power sectors. There are strong synergies between power and water policies and economic growth in the region. Countries need to adopt policies and embark on reforms that support growth rather than risk jeopardizing it. This resulting growth could assist in resolving the region's needs in the water and power sectors.

• In many countries, the poor pay the highest price for water and power and often for inadequate service. No simple solutions exist for ensuring quality access to underprivileged populations, but progressive tariff structures with lifeline rates can help alleviate the situation. It is crucial to listen to the poor in order to ensure that subsidies are brought about where they are needed the most.

• Appropriate regulation is a key element of the appropriate investment climate and can foster the participation of local and foreign investors to infrastructure financing. Regulation sets a level playing field for all actors in the water and power markets, and leads to a sustained development of these sectors in the longer term.

• Mitigating political risk is of vital importance for attracting private sector partners. This includes addressing issues ranging from the transparency of transactions and procedures to controlling corruption and proper risk allocation.

• Management issues within the power and water utilities are very problematic throughout the region with a few exceptions. Issues of cost recovery, water and power losses and overstaffing are key challenges that need to be addressed if the utilities are to become more efficient and effective. These challenges need a careful approach, since local social and economic conditions have to be taken into account in order to achieve sustainable development. In addition, the power and water sectors cannot be considered as the vehicle through which the social contract of society is enforced.

• Partnerships are important. Public-private, donors, NGOs, local businesses, academia, and donors should be involved. Participation and empowerment of users, especially the poor requires special attention to understand the most acute water and power problems and to realize sustainable water management to address their needs. All parties must be better listeners.
It was agreed that events of this kind should continue as they enrich discussions and understanding concerning the development of these two key infrastructure sectors in the MENA region. Thought is already being given to follow-up events on key themes raised such as regulation of water and power sectors, investment’s contractual arrangements and subsidies.
# Roundtable on Opportunities and Challenges in the Water, Sanitation and Power Sectors in the MENA Region

## May 26, 2003

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<td>5:00 p.m.</td>
<td>Registration</td>
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<tr>
<td>7:00 p.m.</td>
<td>Cocktail reception</td>
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Hosted by Mr. Omar Razzaz, Country Manager, World Bank Office in Beirut

## May 27, 2003

**Time**

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<td>8:30 a.m.</td>
<td>Registration (continued)</td>
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### SESSION 1: LINKING ENERGY AND WATER SECTOR REFORM IN THE MIDDLE EAST AND NORTH AFRICA TO ECONOMIC GROWTH AND COMPETITIVENESS

**Chairperson:** Mr. Jamal Saghir, Director of Energy and Water, World Bank

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<th>Time</th>
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<tr>
<td>9:30 a.m.</td>
<td>Plenary Session</td>
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<td>Welcome and Keynote Speech on Opportunities and Challenges in Water and Power Sector Reform - Mr. Jamal Saghir, Director of Energy and Water, World Bank</td>
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<tr>
<td>10:15 a.m.</td>
<td>Plenary Session</td>
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<td>Opening Remarks - H.E. Partrick Renauld, Head of Delegation, European Commission in Lebanon</td>
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<tr>
<td>10:30 a.m.</td>
<td>Plenary Session</td>
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<td>Opening Remarks - H.E. Ayoub F. Hmayed, Minister of Water and Energy, Lebanon</td>
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<tr>
<td>10:45 a.m.</td>
<td>Coffee Break</td>
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<tr>
<td>11:15 a.m.</td>
<td>Plenary Session</td>
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<td>A Summary of Questions Identified and a Review of the Program - Ms. Françoise Clottes, Energy and Water Sector Manager, MENA Region, World Bank</td>
</tr>
<tr>
<td>12:00 p.m.</td>
<td>Press Conference</td>
</tr>
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<td>Lunch</td>
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### SESSION 2: HOW CAN SECTOR REFORM HELP IMPROVE SERVICE AND ATTRACT INVESTMENT AND KNOW-HOW?

<table>
<thead>
<tr>
<th>Time</th>
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<tr>
<td>2:00 p.m.</td>
<td>Plenary Session</td>
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<td></td>
<td>A review of reform programs in water and power - introduction to the session - Mr. Jamal Saghir, Director of Energy and Water, World Bank</td>
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</table>

#### Water Supply and Sanitation

**Chairperson:** Mr. Jamal Saghir, Director of Energy and Water, World Bank

<table>
<thead>
<tr>
<th>Time</th>
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<tr>
<td>2:10 p.m.</td>
<td>Parallel Session</td>
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<tr>
<td></td>
<td>Improving access to the poor</td>
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<td></td>
<td>Dr. Khairy Al-Jamal, Director, Palestinian Water Authority, West Bank and Gaza</td>
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<td>Mr. Anwer Sahooly, Chairman, Technical Secretariat for Water Supply and Sanitation Sector Reform, Yemen</td>
</tr>
<tr>
<td>3:15 p.m.</td>
<td>Parallel Session</td>
</tr>
<tr>
<td></td>
<td>Tariffs and cost recovery in water supply and sanitation - Mr. Fotovat, Director, Tehran Sewerage Company, Iran</td>
</tr>
</tbody>
</table>
### Roundtable on Opportunities and Challenges in the Water, Sanitation and Power Sectors in the MENA Region

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Topic</th>
<th>Chairperson</th>
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<tbody>
<tr>
<td>2:10 p.m.</td>
<td>Parallel</td>
<td>Financing fast growing demand through reforms</td>
<td>Mr. Tjaarda Storm Van Leeuwen, Lead Energy Specialist, World Bank</td>
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<td>Session</td>
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<td>- Mr. Ali Yousef Ensour, Chairman, CEGCO, Jordan</td>
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<td>- Mr. Tariq Al-Betairi, Executive Vice President, Saudi Electricity Company, Saudi Arabia</td>
</tr>
<tr>
<td>3:15 p.m.</td>
<td>Parallel</td>
<td>The benefits of regional electricity trade and its implications for the reform agenda – a case study of the Nordic Power Pool</td>
<td>Mr. Jan Moen, Director of Regulation and DSM, Norwegian Water Resources and Energy Directorate, Norway</td>
</tr>
<tr>
<td></td>
<td>Session</td>
<td>Discussion on the potential for regional trade</td>
<td>Mr. Tjaarda Storm van Leeuwen, Lead Energy Specialist, World Bank</td>
</tr>
<tr>
<td>4:15 p.m.</td>
<td></td>
<td>Coffee Break</td>
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<tr>
<td>4:45 p.m.</td>
<td>Plenary</td>
<td>Experiences in desalination as a means to enhance water availability in the region</td>
<td>Mr. Jamal Saghir, Director of Energy and Water, World Bank</td>
</tr>
<tr>
<td>6:00 p.m.</td>
<td>Plenary</td>
<td>Close</td>
<td>Mr. Jamal Saghir, Director of Energy and Water, World Bank</td>
</tr>
<tr>
<td>7:00 p.m.</td>
<td></td>
<td>Cocktail reception, followed by dinner</td>
<td>Hosted by Mr. Jamal Saghir, Director of Energy and Water, World Bank</td>
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**May 28, 2003**

#### SESSION 3: THE ROLE OF THE PRIVATE SECTOR IN IMPROVING SECTOR PERFORMANCE

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Topic</th>
<th>Chairperson</th>
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<tbody>
<tr>
<td>8:30 a.m.</td>
<td>Plenary</td>
<td>Experiences with public-private partnerships in the water and powers sectors - introduction to the session</td>
<td>Mr. Jamal Saghir, Director of Energy and Water, World Bank</td>
</tr>
<tr>
<td>8:40 a.m.</td>
<td>Parallel</td>
<td>The Casablanca multi utility concession – a case study</td>
<td>Mr. Suhail, Jme’an, Senior Financial Analyst, World Bank</td>
</tr>
<tr>
<td></td>
<td>Session</td>
<td></td>
<td>- Mr. Fouad Djerrari, Director, LYDEC, Morocco</td>
</tr>
<tr>
<td>9:40 a.m.</td>
<td>Parallel</td>
<td>Breakout Groups</td>
<td>Mr. Alex Bakalian, Senior Water Supply Specialist, World Bank</td>
</tr>
<tr>
<td></td>
<td>Session</td>
<td></td>
<td>- Ms. Hiba Tahboub, Senior Sanitary Engineer, World Bank</td>
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</table>
### Roundtable on Opportunities and Challenges in the Water, Sanitation and Power Sectors in the MENA Region

#### Power

<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Topic</th>
<th>Chairperson</th>
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<tbody>
<tr>
<td>8:40 a.m.</td>
<td>Parallel</td>
<td>Privatization, linkages to the EU Directive and interconnection</td>
<td>Ms. Elisabetta Capannelli, Manager, Joint European Commission/World Bank Programme on Private Participation in Mediterranean Infrastructure (PPMI), Belgium</td>
</tr>
<tr>
<td></td>
<td>Session</td>
<td></td>
<td>- Mr. Bruno Cova, Manager, Middle East and Gulf Countries, CESI spa, Italy</td>
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<td>- Mr. Assad Saab, Deputy Head of Industrial Strategy, EDF Generation and Trading, France</td>
</tr>
<tr>
<td>9:40 a.m.</td>
<td>Parallel</td>
<td>Breakout Groups</td>
<td>Ms. Elisabetta Capannelli, Program Manager, PPMI</td>
</tr>
<tr>
<td></td>
<td>Session</td>
<td></td>
<td>- Ms. Anna Bjerde, Senior Infrastructure Specialist, World Bank</td>
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<tr>
<td>11:00 a.m.</td>
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<td>Coffee Break</td>
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<tr>
<td>11:30 a.m.</td>
<td>Plenary</td>
<td>Report from break-out groups</td>
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<td></td>
<td>Session</td>
<td></td>
<td>Break-out group spokespersons</td>
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<tr>
<td>12:30 p.m.</td>
<td></td>
<td>Lunch</td>
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#### SESSION 4: MITIGATING RISK, OTHER ENABLING TOOLS: Countries, Private Sector and Donor views

**Chairperson:** Mr. Jamal Saghir, Director of Energy and Water, World Bank

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Topic</th>
<th>Chairperson</th>
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<tbody>
<tr>
<td>2:00 p.m.</td>
<td>Plenary</td>
<td>Risk measures and enabling tools to increase market attractiveness -</td>
<td>Mr. Jamal Saghir, Director of Energy and Water, World Bank</td>
</tr>
<tr>
<td></td>
<td>Session</td>
<td>introduction to the session</td>
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</tr>
<tr>
<td>2:10 p.m.</td>
<td>Plenary</td>
<td>Mitigation Instruments offered by the World Bank Group</td>
<td>Mr. Tjaarda Storm van Leeuwen, Lead Energy Specialist, World Bank</td>
</tr>
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<td>Session</td>
<td></td>
<td>Mr. Christophe Bellinger, Multilateral Investment Guarantee Agency (MIGA), World Bank</td>
</tr>
<tr>
<td>3:00 p.m.</td>
<td>Plenary</td>
<td>Views from Donors and , International Finance Institutions (IFIs), EC and Banks</td>
<td>Representatives from Donor organizations, IFIs, EC and Banks</td>
</tr>
<tr>
<td>4:00 p.m.</td>
<td></td>
<td>Coffee Break</td>
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</tr>
<tr>
<td>4:30 p.m.</td>
<td>Plenary</td>
<td>Feedback from the Private Sector</td>
<td>Representatives from the private sector</td>
</tr>
<tr>
<td>5:30 p.m.</td>
<td>Plenary</td>
<td>Conclusions and Closing Remarks</td>
<td>Mr. Jamal Saghir, Director of Energy and Water, World Bank</td>
</tr>
</tbody>
</table>
Appendix 2: List of Speakers and CV Synopsis

H.E. Mr. Ayoub F. Hemayed
Minister of Water and Energy, Lebanon

Mr. Hemayed is the Minister of Water and Energy in Lebanon. He has also been a Member of Parliament for the B. Jbeil District, a position he has occupied since 1992. He held the post of the Minister of Social Affairs between 1996 and 1998. Previously, he was the General Director of the Ministry of Information (1984-1992). Minister Hemayed has a Doctorate in Arabic Literature and a Bachelor of Arts degree in Political Science and Arabic Literature from the Lebanese University.

Mr. Jamal Saghir
Director Water and Energy, The World Bank

Mr. Jamal Saghir is the Director for Energy and Water in the Private Sector Development and Infrastructure Vice Presidency (PSIVP) at the World Bank. Since joining the Bank in 1990, Mr. Saghir, a citizen of Canada and Lebanon, has held several positions including a Senior Private Sector Development Specialist in the Industry and Energy Operations Division in the Middle East Country Department and Sector Manager in the Infrastructure Development Group in MENA. Prior to joining the World Bank, he served as resident advisor to the Prime Ministry in Tunisia (1988-1990) and was responsible for managing a major USAID-funded program in Tunisia to privatize and restructure state-owned enterprises. From 1985-1988, Mr. Saghir held the positions of Economic Adviser and Chief of Staff to the Associate Minister of Finance and Privatization in the Government of Quebec in Canada. He has spoken at numerous events about privatization, Private Participation in Infrastructure (PPI), energy development and water and wastewater development across the globe and has contributed to several publications.

Ms. Françoise Clottes

Ms. Clottes is currently the Sector Manager in charge of the energy and water sectors in the Middle East and North Africa region. She joined the World Bank in 1994 through the Young Professionals program. Prior to her current position, she was the manager in charge of strategy in the office of the Vice-President for Private Sector Development and Infrastructure, after holding a number of positions in the infrastructure sectors within the organization. She is an alumna from the Ecole Normale Supérieure d’Ulm-Sèvres, holds an M.A. in Public Policy from Harvard University’s Kennedy School of Government, an M.A. in Political Science from the Institut d’Etudes Politiques de Paris and an M.A. (DEA) in International Economics from the University of Paris I – Panthéon-Sorbonne.

H.E. Mr. Patrick Renault
Head of Delegation, European Commission in Lebanon

Mr. Renault is the Head of the Delegation of the European Commission in Lebanon since September 2001. An official of the European Commission since 1980, he participated in the negotiations of the Association Agreements with the Mediterranean partner countries following the
joining of Spain and Portugal as well as in the Uruguay Round negotiations. In 1988, he was the Economic Advisor at the European Commission Delegation in Rabat and later was appointed Political and Economic Advisor in the Algiers' Delegation. Upon his return to Brussels in 1995, he was made responsible for Romania within the External Relations Directorate. In 1996, he was nominated Deputy Special Envoy in Sarajevo, and in 1998 he became the Head of the 'Horizontal Matters and Regional Co-operation' Unit within the Western Balkans Directorate of the External Relations Directorate General. Mr. Renauld holds degrees in Law and Economics, and prior to joining the European Commission, he worked for the French Ministry of Finance.

**Dr. Omar Razzaz**  
Lebanon Country Manager, The World Bank

Dr. Razzaz is the Manager of the World Bank’s Lebanon Country Office. He joined the Bank in 1993 through the Yong Professionals Program and then moved to the Private Sector Development Department, where he worked with the private participation in infrastructure group, focusing on Eastern Europe and the Former Soviet Union. In 2000, Dr. Razzaz joined the Middle East and North Africa Region, where he became the Lead Urban Specialist in the Finance, Private Sector, and Infrastructure Department. He led the preparation of the Yemen Port Cities Development Program; Iran Low Income Housing Program; and the Jordan Municipal Finance Study. His country experience includes Russia, Uzbekistan, Turkmenistan, Estonia, Belarus, Macedonia, South Africa, Cote d'Uvoire, Central African Republic, Saudi Arabia, Yemen, Iran, Lebanon, and Jordan. Prior to joining the Bank, Dr. Razzaz was an Assistant Professor at MIT in the International Development Program and Regional Planning Program at the Department of Urban Studies and Planning. He holds a Ph.D. from Harvard University in Urban Studies, and a post-Doctorate from the Harvard Law School. He has a number of publications in refereed journals.

**Mr. Anwar Sahooly**  
Chairman, Technical Secretariat for Water Supply and Sanitation Sector Reform, Yemen

Mr. Sahooly is the Chairman of the Technical Secretariat for Water Supply and Sanitation Sector Reform in Yemen. Previously held positions include: Deputy Director General for the Public Electricity Corporation, Director of investment and special advisor to the Minister of Electricity and Water, and Acting Vice Minister for the Ministry of Electricity and Water in Yemen. Mr. Sahooly is a member of the Ministerial Steering Committee for the Water Sector Reform. He has a degree in Engineering from the United Kingdom, and makes frequent presentations both in Yemen and internationally on topics such as water sector reform, institutional strengthening, capacity building, decentralization, tariff setting, and private sector participation.

**Mr. Sepeher Fotovat**  
Director, Tehran Sewerage Company, Iran

Mr. Fotovat is the Director of the Tehran Sewerage Company. He is also Deputy of Planning and Management Improvement of Tehran Sewerage Company (TSC) and TSC/PMU Director (World Bank Loan for Tehran Sewerage Project). He has a M.Sc. from Wayne State University, Michigan, and a B.Sc. from Lawrence Institute of Technology, Michigan, both in Mechanical Engineering.
Mr. Tjaarda P. Storm van Leeuwen  
Lead Energy Specialist, The World Bank

Mr. Storm van Leeuwen is a Lead Energy Specialist at the World Bank. He has been at the World Bank since 1986, leading project and economic sector work in the energy, infrastructure and mining sectors, including regulatory, power sector restructuring and market design, IPPs and privatization issues. His country experience includes South Asia (India, Pakistan, Nepal, Afghanistan), Africa (Mali, Niger, Mauritania, Uganda) and Middle East and North Africa (Algeria, Tunisia, Jordan, Lebanon, Yemen, Bahrain, Saudi Arabia). Prior to joining the World Bank, he was with the European Investment Bank in Manila, the Economic Commission for Africa in Addis Ababa and worked as a management consultant in the Netherlands. He holds a masters degree from the Netherlands School of Economics/Erasmus University in Rotterdam, Netherlands.

Mr. Ali Yousef Ensour  
Chairman, CEGCO, Jordan

Mr. Ensour is the chairman of the Central Electricity Generating Company (CEGCO). Prior to that, he was the Chairman of the Arab Potash Company. Previously held posts include: Managing Director of Jordan Phosphate Mining Company, Minister of Industry and Trade, and General Director of Jordan Electricity Authority. He holds a B.Sc. in Electrical Engineering from the University of London.

Mr. Koussai Quteishat  
Director, Middle East Desalination Research Center, Oman

Mr. Quteishat is the Director of the Middle East Desalination Research Center in Oman. Before joining the public sector, he worked for several years in the engineering field in consultancy, contracting and construction management in the United States, Saudi Arabia, and Jordan with international firms and with companies that he himself established. Other posts held by Mr. Quteishat include: Secretary General of the Water Authority of Jordan, Secretary General of the Ministry of Water & Irrigation, and Chairman and Managing Director of the newly established Electricity Distribution Company. He serves on many international committees and has given presentations worldwide on the topics of water, water management, desalination, as well as water issues related to the Peace Process. Mr. Quteishat holds a BS and MS degrees in Civil Engineering from the University of Massachusetts and a BA degree in Engineering Sciences from Dartmouth College.

Mr. Fouad Djerrari  
Director, LYDEC, Morocco

Mr. Djerrari is the Director of Lyonnaise des Eaux in Casablanca. Prior to that, he was the director of the Water Utility Partnership Program (Africa) a capacity building program mainly founded by The World Bank, DFID and SIDA, headquartered in Abidjan and working in urban water and sanitation. Mr. Djerrari held several positions throughout the years, including: the Chief Executive Officer of the Rabat Water, Sanitation & Electricity Board (RED), the President of Union of African Water Suppliers (UAWS), Consultant for multiple international organizations and private
sector companies such as: The World Bank, the World Bank Institute, and the Global Environmental Facility in Washington D.C., Ernst and Young, La Défense, Paris.

**Ms. Elisabetta Capannelli**  
Manager of the Programme on Private Participation in Mediterranean Infrastructure (PPMI) – World Bank and European Commission

Ms. Capannelli is a World Bank staff assigned to manage the Brussels-based Programme on Private Participation in Mediterranean Infrastructure (PPMI). She has been with the World Bank since 1998 and moved to the Brussels office in 2001. Prior to joining the World Bank, she was in Manila for about seven years with the Asian Development Bank. Ms. Capannelli also worked as an economist in Italy, her country of origin. She has extensive regional knowledge of the MENA countries and has worked in over fifteen countries in Asia and the Pacific, including among others China, Mongolia and South East Asia. Her expertise covers microeconomics, private sector participation and regulation. She has project experience in infrastructure sectors (water, sanitation, solid waste, and transport). She holds a Master Degree (MA) in Development Economics from Sussex University in the UK and a MA in Political Science/Economics from Bologna University, in Italy.

**Dr. Alex Bakalian**  
Senior Water Supply Specialist, The World Bank

Dr. Bakalian is a Senior Water Supply Engineer in the Water and Energy Unit of the MENA Region in the World Bank. He has extensive experience on institutional and financial aspects of the water supply and sanitation sector, utilities reform and rural water supply and sanitation in Latin America and the Middle East. Dr. Bakalian holds a PhD in Environment Health Engineering from Johns Hopkins University, a BS in civil engineering from the American University of Beirut, and a MBA from George Washington University.

**Dr. Bruno Cova**  
Manager, Middle East and Gulf countries, CESI spa, Italy

Dr. Cova is Scientific Manager within B.U. T&D Networks at the Italian Electrical Experimental Centre (CESI), which he joined in 1985 and has been deeply involved in power system modeling, studies and simulations. Presently, he is acting as Project Manager of the Mediterranean Electrical Ring (MEDRING) project, aimed at investigating the expected behavior in static and dynamic conditions of the synchronously interconnected Mediterranean system. The main issues of this project, now in its final stage, are: definition of the economically optimum energy exchanges between the countries, proposal of solutions for improving the reliability of the system, training of experts and operating personnel in operation of interconnected systems and on the mechanism of energy markets. Dr. Cova graduated in Electrical Engineering in 1985 at the University of Pavia (Italy).

**Dr. Assaad Saab**  
Deputy Head of Industrial Strategy, EDF Generation and Trading, France

Dr. Saab has worked in the Executive Office of Electricité de France since 1988 and has held his role as Head of Corporate Planning, Strategy Division. He joined EDF – Energy Branch in 2003 as
deputy head of “Industrial Strategy” and he is a member of EDF Environment and Sustainable Development Agency. He is also a member of several international expert networks in Business Environment. He has postgraduate and doctorate degrees in physics from the Paris University. Dr Saab is the co-author of “La prospective stratégique d’entreprise” – Dunod and the author of numerous reports, monographs and papers on environmental research and policy issues, long range and strategic planning issues related to electric utilities and energy systems.

Ms. Anna Bjerde
Senior Infrastructure Specialist, The World Bank

Ms. Bjerde is a Senior Infrastructure Specialist in the Water and Energy Unit of the Middle East and North Africa Region (MENA) in the World Bank. She joined the World Bank through the Young Professionals Program in 1997. She has extensive experience in the preparation and implementation of energy, water and telecommunications projects throughout the World Bank’s client countries, notably in the Europe and Central Asia Region and more recently MENA. Prior to joining the World Bank, Ms. Bjerde was a Senior Consultant with Gemini Consulting, a leading management-consulting firm, working on various infrastructure sectors. She holds an MBA degree from Stockholm University, Sweden.

Mr. Christophe Bellinger
Director, Multilateral Investment Guarantee Agency (MIGA)

Mr. Bellinger joined the Multilateral Investment Guarantee Agency (MIGA), a member of the World Bank Group, in 1988, soon after the Agency was created. He spent most of his career at MIGA as its Chief Underwriter and head of operations. On January 2, 2001, he was assigned to Paris, France to establish MIGA’s first permanent office outside of Washington, D.C.

Prior to joining MIGA, Mr. Bellinger was Vice President of Political Risk at AIG (the American International Group), one of the largest providers of private political risk insurance. Mr. Bellinger began his career in political risk insurance at the Overseas Private Investment Corporation (OPIC), a U.S. Government agency where he was the Regional Manager for Asia. Before entering the field of political risk insurance, Mr. Bellinger worked for American Hospital Supply Corporation in France.

Mr. Bellinger holds graduate degrees in political science and business from the University of Kansas and the American Graduate School of International Management. He has studied international law at the Fletcher School of Law and Diplomacy and the Woods Hole Oceanographic Institute and recently completed an executive development program at Harvard Business School. During Mr. Bellinger’s career in political risk insurance, he has been involved in over 500 start-up projects around the world. He represents MIGA at the Berne Union, the Association of Export Credit and Investment Insurers.

Dr. Khairy Al-Jamal
Manager, Palestinian Water Authority, West Bank and Gaza

Mr. Al-Jamal is currently a Manager in the Gaza Office of the Palestinian Water Authority, managing a multi-disciplinary team involved in the field of Water Resources and the World Bank-financed Water and Wastewater Service Improvement Project. He also lectures on Water Distribution
Appendix 2: List of Speakers and CV Synopsis

Mr. Al-Jamal has extensive experience in the field of water supply and management. He also worked as a consultant to the Palestinian Energy Center and the UNDP-funded projects to supervise the design and construction of Solar Crop Dryer and Solar PV Pumping in Gaza. He holds a B. Eng. in Mechanical Engineering from Birzeit University (Distinction), a MSc. on Renewable Energy Resources (Distinction) and a Ph.D. on Solar Process Heat Generation from the Reading University in the UK. He has also completed post Doctoral studies on Water Distribution Systems Optimization at the University of Cambridge (UK). He has carried out post doctoral research in Hydraulic Network Analysis and Simplification for Thames Water to conduct the analysis to minimize the pumping cost through a proper pump scheduling at the Cambridge University and on compound parabolic solar concentrators at Reading University. Mr. Al-Jamal has published more than 14 papers and reports in various journals and for various conferences.

Mr. Tariq Al-Betari
Executive Vice President, Saudi Electricity Company, Saudi Arabia

Mr. Al-Betari has a bachelor in Engineering and an MBA. He has 26 years of experience working for the Saudi Electricity Company, including 15 years in executive capacities. Assignments included customer services (retail and corporate), systems operations, and planning and project management. In 2001, he was Director of the GCC Interconnection Authority Board, and in 2003 he is Vice-Chairman of the Water and Electricity Company Board.

Mr. Jan Moen
Director of Regulation and DSM, Norwegian Water Resources and Energy Directorate, Norway

Mr. Moen has a Masters degree in economy from the University of Oslo. In 1990 he was appointed the first Electricity Regulator of Norway. Before becoming a Regulator Jan Moen had been in electric power industry during most of his professional career. He spent nearly 17 years at Oslo City Light and Power (the Utility of the city of Oslo), and in his last 5 years with the company, he was the manger of the most comprehensive DSM program in Norway. His experience covers: energy planning, forecasts, tariffs, statistics and international cooperation.

He was one of the founders of ECEEE (European Council of an Energy Efficient Economy) and served as president until recently. He now serves as a member of the advisory group. Jan Moen was also one of the founders of the IEA Executive Committee of DSM and New Technology and served as the chairman until last year.

The World Bank has used Mr. Jan Moen as a short-term consultant on several projects, mostly related to poverty and restructuring of the power industry. Jan Moen is also a TAG member of the Energy Founded Trust Funds at the World Bank. He is one of the founders of CEER (Council of European Energy Regulators) and has been a board member since its establishment. Jan Moen spent much of his time focusing on the development of a common electricity market in the European
Union and he is the chairman of a committee on Security of Supply at CEER and works close to the European Commission.

**Mr. Richard Morris**  
Desalination Expert

Mr. Morris studied Chemical Engineering at the University of Strathclyde, Glasgow, where he graduated in 1964. Since then, he has held numerous important posts in the chemical process and desalination industry. He has been involved in the design and commissioning of major desalination plants in many countries in the Middle East.

In 1993, he formed Richard Morris & Associates (RMA) an international consultancy firm specializing in business development in energy, environment and desalination. RMA is retained as an advisor to the EC at the Middle East Peace Process. RMA has carried out numerous assignments for Scottish companies, the EC, the World Bank, DFID and for other governmental organizations in the Maghreb, the Middle East and in South Africa.

Mr. Morris is the author of numerous papers dealing with water, energy, the environment and business development.

**Mr. Abdulaziz Albahely**  
Corporate Legal Advisor, Saline Conversion Corporation, Saudi Arabia
Energy in the Middle East and North Africa

As a result of high population growth, the region's total investment needs in the energy sector are high

The regional population growth rate of 2% per year is among the highest in the world, surpassed only by sub-Saharan Africa at 2.4%. In 2010, the population in the region is estimated to be 20% larger than in 2000 (World Bank, 2002). In addition, annual economic growth in the Middle East and North Africa is expected to be in the order of 1.4% through 2010, somewhat higher than when compared to the pre-2002 period, when it was 1% (World Bank, 2002); although large interregional differences exist: In 2000, economic activity in West Bank and Gaza declined by 6%, while it increased by 6% in Iran, for example. Thus, investment needs to the energy sector are estimated at about US$300 billion (in 1990 prices) between 2000 and 2010. Of this amount, US$160 billion are estimated to be required for the oil and gas sector (World Bank, 2000).

Overall access to electricity in the region is good

The average electrification rate in the region is around 90%, with many countries performing close to the 100% mark. However, 28 million people in the region still lack access to electricity and 8 million people rely on biomass for all of their energy needs (IEA, 2002).

The region has a large potential to render the use of energy more efficient

Energy intensity, as is high in the region and ranges from 10,626 Btu/US$ in Yemen to 372,894 Btu/US$ in Bahrain. Most countries are in the range of 20,000 - 30,000 Btu/US$. This is relatively high compared with an oil producing country such as Norway (10,615 Btu/US$), but relatively low compared with oil producing countries such as Venezuela (34,113 Btu/US$) and Russia (80,316 Btu/US$). It is high compared with non-oil producing countries. Spain's energy intensity is 7,684 Btu/US$, and Germany's energy intensity is 5,217 Btu/US$ (IEA, 2003). Demand management programs – including increased tariffs - can help increase energy efficiency, and thus reduce energy intensity.

The composition of energy consumption in the region varies significantly, reflecting the diversity of economies. For example, in Yemen 69.5% of energy is consumed in the transport sector, while in most other countries the share of the transport sector in energy consumption is between 10-30%. The industrial sector is most important in Bahrain (67.6%), Egypt (53.3%), Lebanon (58.4%), Qatar (81.8%), and in the United Arab Emirates (58.4%). Lowest sector shares of industry are found in Djibouti (5.3%) and Yemen (11.2%) (EIA, 2002). Energy consumption for residential and commercial purposes is lower at about 2% to 30% of energy consumption.

The level of carbon emissions vary throughout the region...

In 2000, per capita carbon emissions in Yemen were 0.2 tons, in Egypt and Morocco 0.5 tons, and in Algeria 0.7 tons. Other countries have high per capita emissions with Qatar at 14.1 tons, Lebanon and the United Arab Emirates at 9.7 tons, and Bahrain at 8.4 tons. This compares with 2.1 tons of carbon in Spain and 1.5 tons of carbon in Venezuela (EIA, 2003).
...but carbon intensity is on the whole relatively high

Carbon intensity\(^1\) of GDP in the region in the year 2000 is somewhat higher than compared to OECD countries. It ranges from 0.2 tons of carbon/US$1,000 for Tunisia and Morocco to 5.72 tons of carbon/US$1,000U for Bahrain. For comparison, the carbon intensity of Spain is at 0.12 tons of carbon/US$1,000, and of Venezuela is at 0.44 tons of carbon /US$1,000. The high figures suggest a potential for carbon financing in the region.

**Tariffs are still too low to ensure cost recovery**

Selected electricity prices in the table below show that gradually prices have moved to levels comparable to European countries, but for a number of countries prices are still too low to ensure cost recovery. Relative prices in the Middle East and North Africa remain skewed in favor of households, which continue to pay less than industry (World Bank, 2003).

![Electricity Investment Chart](image)

<table>
<thead>
<tr>
<th>Countries</th>
<th>Large Industry</th>
<th>Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>3.84</td>
<td>1.72</td>
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<tr>
<td>Egypt</td>
<td>2.80</td>
<td>2.50</td>
</tr>
<tr>
<td>Iran</td>
<td>1.80</td>
<td>0.7</td>
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<td>Jordan</td>
<td>6.0</td>
<td>3.9</td>
</tr>
<tr>
<td>Lebanon</td>
<td>12.0</td>
<td>7.2</td>
</tr>
<tr>
<td>Morocco</td>
<td>6.92</td>
<td>9.53</td>
</tr>
<tr>
<td>Oman</td>
<td>4.9</td>
<td>5.2</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>3.1</td>
<td>1.3(^{*})</td>
</tr>
<tr>
<td>Syria</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Tunisia</td>
<td>4.61</td>
<td>6.47</td>
</tr>
<tr>
<td>Yemen</td>
<td>8.9</td>
<td>6.0</td>
</tr>
<tr>
<td>Spain</td>
<td>5.13</td>
<td>13.1(^{+})</td>
</tr>
</tbody>
</table>


By early 2003, most countries in the region had initiated reform in electricity, but the region is still lagging in the international context.

Policy needs vary in the energy sector’s sub-sectors: electricity, upstream oil and gas, and downstream oil- and gas. In the electricity sector, comprehensive analysis of restructuring possibilities are at various stages of completion or are beginning to be implemented in countries such as Morocco, Lebanon, Yemen, and Tunisia. Many countries have adopted new electricity laws, which includes corporatization and the setting up of a regulatory body. Egypt has created a holding company with corporate subsidiaries and has established a regulatory agency. The UAE is another example of a country which has undergone full restructuring, including the establishment of an independent regulator. Five countries have private independent power producers (IPPs) in operation (Egypt, Morocco, Oman, West Bank and Gaza and Tunisia). Jordan, which has had a locally privately owned distribution company for many years, has fully unbundled and is preparing to privatize the other entities as well. In Morocco, about 50% of distribution is operated through private concessions. However, in the international context, regulatory reform as measured by the World Bank’s regulatory reform indicator has been slower in the Middle East and North Africa than in other regions (see graph above).

**Private sector participation in the region’s power sector has been low**

While global private investment flows in electricity had sharply fallen to 1992 levels in 2001, private investment flows in the Middle East and North Africa have remained at 2000 levels. However, in the electricity sector, only 4% of the world’s FDI was invested in the region (World Bank/PPI Database, 2003). In the area of natural gas, a fair share of FDI has been attracted to the region, 11% of funds spent world-wide. With the current global recession, domestic and regional private sources of financing are becoming increasingly more important as international finances are even more difficult to obtain (see graphs below; source of graphs: PPI database, 2003).

Looking ahead...

- Both population and economic growth are putting pressure on existing infrastructure and investments to meet future demand
- Reform has lagged when compared to other regions, making the region less attractive for private investors
- Cost recovery of both O&M and investment costs remain weak which will impede development in the sectors
- Given the substantial need for capital, local private financing and international public-private partnerships are likely to have a prominent role in the years to come

\(^1\) Carbon intensity is the amount of carbon emitted per unit of GDP produced.

\(^{*}\) Up to 2000 kWh.

For more information contact Anna Bjørde abjorde@worldbank.org
Website: www.worldbank.org
Urban Water in the Middle East and North Africa

A fact sheet compiled by the World Bank

Water is very scarce in the region...

The Middle East and North Africa region is host to 5% of the world’s population. Yet, the people in the region dispose of only 1% of the world’s accessible fresh water. Current available water resources per capita in the Middle East and North Africa Region are one sixth of the world average. 45 million people in the region lack access to safe drinking water and more than 80 million lack access to safe sanitation (WHO, 2002). Aquifers all over the region suffer from over-exploitation. Even where piped access exists, supply is likely to be intermittent. For example, in Algeria, Jordan, Lebanon, Syria, West Bank and Gaza and Yemen, most urban areas experience intermittent supply (World Bank, 2003). This situation is particularly problematic as cities, host to 60% of the population in the region, are growing at more than 4% per year (World Bank, 2003). The situation is also acute in rural areas, where access to clean drinking water and sanitation is a considerable problem.

…and the situation is worsening due to high population growth

At the same time water availability is falling due to population growth. Annual per-capita availability, which was about 3,300 cubic meters in 1960, has fallen by 60% to about 1,200 cubic meters in 2003. For example, in Yemen, per capita availability today is less than 150 cubic meters, already far below the projected regional average 30 years from 2003 (World Bank, 2003).

Regional per capita availability of water (‘900 m³)

(World Bank, 2003; annual availability of water)

Water allocation should be better geared to uses with higher economic returns

On average, 7% of the water used in the region goes to domestic consumption while 4% goes to industry. Meanwhile agriculture consumes 89% of the region’s water, even though agriculture’s contribution to GDP only ranges between 2 - 20%, depending on the country (World Bank, 2003).

The potential to increase water use efficiency by reducing losses and improving wastewater management is high

Water use efficiency: urban water systems lose on average 50% of available water as “unaccounted-for-water”. The latter breaks down in physical and commercial losses. In surface irrigation, only about 40% of the water reaches the crops in the region (World Bank, 2000 and World Bank, 2003).

Water pollution: in general, wastewater in the region is not being treated. The cost of environmental degradation due to water pollution has been estimated at 1% of GDP in Egypt, and between 0.7% and 1% for Algeria, Lebanon and Tunisia. Morocco’s most important river, the Sebou, has become a waste dump for the cities along its banks.

Algeria’s Mitidja and Saida aquifers are threatened by pollution from cities, industrial effluents and agricultural runoffs. Institutional support to address these types of issues in a consistent manner still needs to be developed in most countries.

Desalination can provide additional drinking water, but is still very costly

Although desalination, at an average US$20-40/cubic meter for brackish water and US$50-90/cubic meter for seawater (for large plant), is still very expensive, a number of countries in the region have begun using desalination to generate drinking water. The amount of desalinized water ranges from 0.02 BCM/year for Yemen to 0.71 BCM/year for Saudi Arabia.

Countries with higher electricity prices find it harder to make desalination economically viable, as the desalination process is very energy intensive. However, as tariffs generally don’t cover cost, reducing both commercial and technical losses of water should be the first avenue to enhancing water supply.

Tariffs generally do not allow for cost recovery, although efforts are being made to increase tariffs

Most countries in the world have adopted the September 2000 Millennium Development Goals, which set out joint development goal. One of the goals, environmental sustainability, requires to halve the proportion of people without sustainable access to safe drinking water by 2010, and by 2020, to increase access to improved sanitation to enhance the livelihoods of at least 100 million slum dwellers world-wide.

In Yemen, water tariffs were increased from 1995 to 2002 resulting in an average increase in the monthly household bill by over 350%, while industrial tariffs increased by over 150% per m3. (World Bank, 2003)
operation and maintenance (O&M) costs of water supply, but not necessarily for sanitation. Capital cost recovery is yet another challenge. Although, in many cases the O&M costs are under-estimated due to subsidies on energy and insufficient spending on maintenance.

The current average level of water tariffs for a typical household in the region varies between US$0.04 per cubic meter in Cairo, and US$1.11 per cubic meter in Ramallah. Wasteful use of water in the industrial and agricultural sectors could potentially be reduced by increasing tariffs.

**Water sector reform is at an early stage but underway in most of the region**

Responding to a new understanding of the importance of water resources for the national economy, a number of countries have established separate ministries to deal with water issues. In Algeria, a Ministry of Water Resources was established in 2000, in Oman the Ministry of Water Resources was established in 1989, and in Jordan, the Ministry of Water and Irrigation was established in 1992.

New water laws have been adopted by Algeria (1996), Iran (1991), Jordan (1988), Lebanon (2000 and 2001), Morocco (1995), Tunisia (1975), West Bank and Gaza (2002), and Yemen (2002). New strategies - such as the 1998 Yemen water strategy - are identifying the need for a change in the role of the government when it comes to management of water. The need for water use sector strategies are also emerging in many countries in the region.

Egypt, Iran, Morocco, Saudi Arabia and West Bank and Gaza have decentralized service provision in urban areas from the national/state level to municipal levels (World Bank, 2002). Thus far, no independent water regulator has been established in the region\(^1\). When benchmarking progress of water reform, the region falls into the mid-range of performance in the developing world (see figure above).

**Private sector participation is low when compared to other regions, but growing**

Compared with other regions in the world, the overall level of private sector investment is low, at less than 1% of all private sector investments world-wide which corresponds to a mere US$60 million. But countries are increasingly engaging the private sector, especially for the management of water supply.

Modes of private participation range from service contracts (Algeria, Tunisia), management contracts (West Bank and Gaza, Lebanon, Jordan), BOTs (Kuwait, Oman), to concessions (Morocco).

In Morocco, an ambitious private sector participation program has led to the conclusion of 3 multi-service concessions by 2002 in the major cities of the country, and others are planned. In Tunisia, water and sewerage public sector utilities are delegating some operation and management responsibilities to the private sector through sub-contracting and service contracts. Pilot BOTs are also under preparation.

**Looking ahead...**

- Per capita water availability will remain a major priority in the region as it continues to decrease
- Sector reforms are at an early stage; meanwhile operational and cost recovery challenges continue to pose a significant threat to the viability and sustainability of water supply in the region
- The sanitation agenda is critical as the environment in the region is showing clear degradation from waste disposal and given the opportunity of wastewater reuse
- Private investors are primarily interested in management contracts. As a result, financing gaps remain huge
- Meeting the Millennium Development Goals will require further investment and sector reforms

\(^1\) Due to lacking data this does not include Iraq, Libya or the GCCs (except Saudi Arabia).
Appendix 4: List of Registered Participants

Roundtable on Opportunities and Challenges in the Water, Sanitation and Power Sectors in the Middle East and North Africa Region

Attendees are listed by country of residence or by International Organizations

AFRICAN DEVELOPMENT BANK

Mr. Mahib CISSE
Ingénieur d'Infrastructures
Département du Secteur Privé
Banque Africaine de Développement
Tunis, Tunisie
Tel : (216-7) 183-0909
b.cisse@afdb.org

FRENCH DEVELOPMENT AGENCY

Ms. Emilie BARRAU
Chargée d’Études
Agence Française de Développement
Ambassade de France au Liban
Bâtiment K
Espace des Lettres, Rue de Damas
Beyrouth, Lebanon
Tel: 961-1-420 150
Fax: 961-1-611 099
Afd.beyrouth@cyberia.net.lb

Mr. Claude RAYMOND
Directeur
Agence Française de Développement
Batiment K
Espace des Lettres
Rue de Damas
Beyrouth, Lebanon
Tel: 961-1-420 150
Fax: 961-1-611 099
Afd.beyrouth@cyberia.net.lb

Mr. Yousfi HELA
Agence Française de Développement
Beyrouth, Lebanon

ALGERIA

Mr. Hamid DAHMANI
Conseiller
Ministère de l’Energie
80 avenue Ghermoul
Alger, Algérie
Tel: 213-21-66 44 69
Fax: 213-21 65 24 08
h.dhahmani@mem.gov.dz
dahmanihamid@yahoo.fr

Mr. Zoubir HAKMI
Directeur
Ministère de l’Energie et des Mines
Alger, Algérie
Tel: 213-21-652 408
Fax: 213-21-652 408
Zoubirhakmi2000@yahoo.fr

BELGIUM

Mr. Mahendra VERMAUT
Business Developer
Middle-East, Eastern Europe and Africa
Tractebel Electricity and Gas International
Place du Trone 1
B-1000 Brussels, Belgium
Tel: (32)-2-510.79.37
Fax: (32)-2-510.70.24
mahendra.vermaut@tractebel.com

DJIBOUTI

Mr. Abdi Farah CHIDEH
Secrétaire Général
Ministry of Energy and Natural Resources
P.O. Box 10010
Djibouti
Tel: 253-35 01 37
Fax: 253-35 43 96
energie@intnet.dj

EUROPEAN COMMISSION

Mr. Patrick RENAUDL
Chef de la Délégation de la Commission Européenne
Imm. 490 Harbor Drive
Avenue Charles Helou
Saifi, Beyrouth
Tel: 961-1-569 409
Fax: 961-1-569 415
Patrick.renauld@cec.eu.int

Mrs. Axelle NICAISE
Desk-E.U. Official
European Commission
200 Rue de la Loi,
Brussels, Belgium 1049
Tel : 32-2-299 9381
Fax: 32-2-296 6611
Axelle.nicaise@cec.eu.int
Mr. Patrick TROLLIET  
Chargé de Programme  
Développement Rural, Environnement et Eau  
Délégation de la Commission Européenne  
IMM. 490 Harbor Drive  
Avenue Charles Helou  
Saifi, Beyrouth  
Tel: 961-1-569 409 ext. 248  
Fax: 961-1-569 415  
Patrick.trolliet@cec.eu.int

FRANCE

Mr. Franck BOUSQUET  
Director of International Project Finance  
VEOLIA WATER  
L'Aquareme®, 1 place Montgolfier  
94417 Saint Maurice CEDEX France  
Tel: 33-1-45 11 58 14  
Fax: 33-1-45 11 58 71  
Frank.bousquet@vivendiwater.com

Mr. Hervé BRETON  
Project Manager  
Agence Française de Développement  
5 rue Roland Barthes  
Paris 75012, France  
Tel: 33-1-53 44 33 41  
Fax: 33-1-53 44 38 65  
bretonh@afd.fr

Mr. Assaad SAAB  
Deputy Head, Industrial Strategy  
EDF  
1 Place Pleyel  
Saint Denis, 93282 France  
Tel: 33-1-43 69 43 87  
Fax: 33-1-43 69 48 71  
Assaade.saab@edf.fr

Ms. Mathilde TENNESON  
Project Manager  
Agence Française de Développement  
5 rue Roland Barthes  
Paris 75012, France  
Tel: 33-1-53 44 37 61  
Fax: 33-1-53 44 38 65  
tennesonm@afd.fr

Mr. Gérard VELTER  
Vice President, International Development Middle East  
VEOLIA WATER  
52 rue d’Anjou  
Paris 75008 France  
Tel: 33-1-49 24 32 11  
Fax: 33-1-49 24 33 48  
gerard.velter@generale-des-eaux.net

GERMANY

Mr. Dieter GOMER  
Program Coordinator  
German Technical Cooperation - GTZ  
Eschborn, Germany  
Tel: 49-173 9050 1930  
Fax: 49-721 945 3022  
dieter.gomer@gtz.de

Mr. Wolfgang MUTH  
Senior Vice President  
International Operations Middle East  
SIEMENS AG  
Corporate Development Strategy  
Simens AG CD S61  
D-80312 Munich, Germany  
Tel: 49-89-636 35832  
Fax: 49-89-636 34625  
wolfgang.muth@mchw.siemens.de

IRAN

Mr. Sepehr FOTOVAT-AHMADI  
Deputy for Planning and PMU Director  
Tehran Sewerage Company  
No. 14 Andisheh St Beheghti Avenue  
Tehran, Iran  
Tel: 98-21-84 24 404  
Fax: 98-21-840 1986  
Ir_Tsc@yahoo.com  
Pmu_tsc@tsc.ir

Mr. Esfandiar POUR NARENJI  
Chief of Operation and Maintenance  
Water and Sanitation Projects  
National Water and Wastewater Eng. Company  
Ministry of Energy  
No. 8 Shahid Abdolahzadeh Str.  
Keshavarz Blvd. NWWE  
Tehran 14155, Iran  
Tel: 98-21-8953319  
Fax: 98-21-895 5795  
Mshakiba2001@yahoo.com
ITALY

Mr. Bruno COVA
Power System Analysis Manager
Business Unit T&D Networks CESI SpA
Via Rubattino, 54
20134 MILANO – Italy
Tel: +39 (02) 21255137
Fax: +39 (02) 21255481
Cell: + 39 (335) 5985687
Cova@Cesi.It

Mr. Alberto MARZORATI
CESI SpA - Sales Department
Area Manager Middle East, Gulf Countries and AFEDS
Via Rubattino, 54
20134 MILANO – Italy
Tel: +39 (02) 21255137
Fax: +39 (02) 21255481
Cell: + 39 (335) 5985687
marzorati@cesi.it

JAPAN

Ms. Asako UOZUMI
Country Officer
Development Assistance Department III
Japan Bank for International Cooperation
4-1 Otemachi, 1-chome
Chiyoda-ku,
100-8144 Tokyo, Japan
Tel: 81-3-5218 3664
Fax: 81-3-5218 3972
a-uozumi@jbic.go.jp

EGYPT

Mr. Masatomo OGANE
Chief Representative in Cairo
Japan Bank for International Cooperation
3 Abu El Feda Building, 16th floor
3 Abu Feda Street, Zamalek
Cairo, Egypt
Tel: 20-2-738 3608 or 3609
Fax: 20-2-738 3607
m-ogane@jbic.go.jp

JORDAN

Mr. Mahmoud A. KHOSHMAN
Business Development and Project Finance Manager
ABB Group
Gulf and Near East Area
P.O. Box 2348
Amman 11953, Jordan
Tel: 962-6-562 0181
Fax: 962-6-562 0198
mahmoud.khoshman@jo.abb.com

Mr. Ali Yousef ENSOUR
Chairman
Central Electricity Generating Co.
P.O. Box 3148
Amman 11811
Tel: 962-6-535 6989
Fax: 962-6-335 7210
chairman@cegco.com.jo

Dr. Ahmad HIYASAT
Managing Director
National Electric Power Company
P.O. Box 2310
Amman, Jordan
Tel: 962-6 585 8615 ext. 6101
Fax: 962-6-581 8336
fkhbarati@nepco.com.jo
ahiyasat@nepco.com.jo
etamimi@nepco.com.jo

Ms. Marina MEUSS
GTZ Expert
German Technical Cooperation
Operations Management Support Project (Water Authority of Jordan - WAJ)
P.O. Box 926 238
Amman, 11190 Jordan
Tel: 962-6-5686-960
Fax: 962-6-5686 960
Fax: 962-6-5683 402
Marina_Meuss@mwi.gov.jo

Mr. Ihab SAADI
Executive Manager, Corporate Finance
Housing Bank for Trade and Finance (HBTF)
P.O. Box 7693
Amman, Jordan 11118
Tel: 962-6-565 4580
Fax: 962-6-565 2319
isaadi@hbtf.com.jo

Mr. Mohammed YAGAN
Advisor, Planning and Studies
Ministry of Energy and Mineral Resources
P.O. Box 140027
11814 Amman, Jordan
Tel: 6-586 3326
Fax: 6-586 5714
memr@memr.gov.jo
### Appendix 4: List of Registered Participants

<table>
<thead>
<tr>
<th>Country</th>
<th>Name</th>
<th>Title/Position</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KfW – German Financial Corporation</strong></td>
<td><strong>Mr. Reinhard SCHMIDT</strong></td>
<td>Director, KfW office Amman, German Development Cooperation</td>
<td>Tel: 962-6-567 4083, Fax: 962-6-567 4087, <a href="mailto:kfw@go.com.jo">kfw@go.com.jo</a></td>
</tr>
<tr>
<td><strong>KUWAIT</strong></td>
<td><strong>Mr. Ayman NEHME</strong></td>
<td>Responsible for Investment Guarantee, Inter-Arab Investment Guarantee Corporation</td>
<td>Tel: 965-484-4500, Fax: 965-484-1240, <a href="mailto:ayman@iai.org.kw">ayman@iai.org.kw</a></td>
</tr>
<tr>
<td><strong>LEBANON</strong></td>
<td><strong>Mr. Mahmoud RATEB</strong></td>
<td>Head, Corporate Finance Division, Gulf Investment Corporation</td>
<td>Tel: 965-2225250 or 2225000, Fax: 965-244 88 96, <a href="mailto:mrateb@gic.com.kw">mrateb@gic.com.kw</a></td>
</tr>
<tr>
<td><strong>LEBANON</strong></td>
<td><strong>Mrs. Imane ABD EL AL ARAB</strong></td>
<td>Association of the friends of Ibrahim Abd El Al</td>
<td>Tel: 961-1-655898, Fax: 961-1-644 800, <a href="mailto:abdelal@cyberia.net.lb">abdelal@cyberia.net.lb</a></td>
</tr>
<tr>
<td><strong>LEBANON</strong></td>
<td><strong>Mr. Mazen ABOUD</strong></td>
<td>President, Union of Northern Associations for Sustainable Development</td>
<td>Tel: 961-3-283642, Fax: 961-1-565097, <a href="mailto:unasd@cyberia.net.lb">unasd@cyberia.net.lb</a></td>
</tr>
<tr>
<td><strong>LEBANON</strong></td>
<td><strong>Mr. Nasti ABDELNOUR</strong></td>
<td>Consultant in Engineering and Finance, Office of the Prime Minister</td>
<td>Tel: 961-3-637 940, Fax: 961-1-384 922</td>
</tr>
<tr>
<td><strong>LEBANON</strong></td>
<td><strong>Ms. Dima AL-KHATIB</strong></td>
<td>Environment Program Manager, UNDP Lebanon, UN House</td>
<td>Tel: 961-1-981 301 ext. 1721, Fax: 961-1-981 521, <a href="mailto:Dima.al-khatib@undp.org.lb">Dima.al-khatib@undp.org.lb</a></td>
</tr>
<tr>
<td><strong>LEBANON</strong></td>
<td><strong>Mr. Roudi E. BAROUDI</strong></td>
<td>Senior Energy Economist, Ministry of Energy and Water</td>
<td>Tel: 961-1-569 999, Fax: 961 1 449 639, <a href="mailto:midland@inco.com.lb">midland@inco.com.lb</a></td>
</tr>
<tr>
<td><strong>LEBANON</strong></td>
<td><strong>Dr. Sélim CATAFAGO</strong></td>
<td>Honorary Dean-Professor, Water Expert, E.S.I.B. and Bureau ARCS</td>
<td>Tel: 961-3-291 014, Fax: 961-1-613 160, <a href="mailto:epscat@bodetel.net.lb">epscat@bodetel.net.lb</a></td>
</tr>
<tr>
<td><strong>LEBANON</strong></td>
<td><strong>Mrs. Wafa CHARAFEDDINE</strong></td>
<td>Senior Planner, Advisor to the President of CDR</td>
<td>Tel: 961-1-981 380, Fax: 961-1-981 252, <a href="mailto:wafac@cdr.gov.lb">wafac@cdr.gov.lb</a></td>
</tr>
<tr>
<td><strong>LEBANON</strong></td>
<td><strong>Mr. Hassan CHARIF</strong></td>
<td>Chief, Sustainable Development and Productivity Division</td>
<td>Tel: 961-1-981 301, Fax: 961-1-981 510, <a href="mailto:H-CHARIF@cyberia.net.lb">H-CHARIF@cyberia.net.lb</a></td>
</tr>
<tr>
<td><strong>LEBANON</strong></td>
<td><strong>Mr. Jean Georges CHATILA</strong></td>
<td>Director of IWRET, Assistant Professor of Engineering</td>
<td>Tel: 961-9-547254, Fax: 961-9-944851, <a href="mailto:jchatila@byblos.lau.edu.lb">jchatila@byblos.lau.edu.lb</a></td>
</tr>
<tr>
<td>Name</td>
<td>Position/Title</td>
<td>Address/Location</td>
<td>Contact Information</td>
</tr>
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<td>--------------------------------------------</td>
</tr>
<tr>
<td>Mr. Majed CONSTANTINE</td>
<td>Special Advisor to the Ministry of Energy and Water</td>
<td>Ministry of Energy and Water Corniche du Fleuve Beirut, Lebanon</td>
<td>Tel: 961-1-569999  Fax: 961-1-449639 <a href="mailto:midland@inco.com.lb">midland@inco.com.lb</a></td>
</tr>
<tr>
<td>Ing. Fares DAGHER</td>
<td>Directeur, Inspecteur Général</td>
<td>Electricité du Liban Beyrouth, Liban</td>
<td>Tel: 961-1-444 219 Tel: 961-1-787 988 Fax: 961-1-583 084</td>
</tr>
<tr>
<td>Ms. Catherine DUMARCHE</td>
<td>Commercial Attaché for Multilateral Affairs</td>
<td>Commercial Mission Espace des Lettres Rue de Damas, Bat. K Beirut, Lebanon</td>
<td>Tel: 961-1-420 164 Fax: 961-1-420 157 <a href="mailto:Catherine.dumarche@drec.org">Catherine.dumarche@drec.org</a></td>
</tr>
<tr>
<td>Mr. Zuhier ELHASSAN</td>
<td>Program Manager, Water and Urban Council for Development and Reconstruction</td>
<td>P.O. Box 116/5351 Tallet al-Serail Beirut, Lebanon</td>
<td>Tel: 961-1-981 373 Fax: 961-1-981 252 <a href="mailto:zouheirh@cdr.gov.lb">zouheirh@cdr.gov.lb</a></td>
</tr>
<tr>
<td>Dr. Haykal RAHI</td>
<td>P.D.G.</td>
<td>Eaux de la Bekaa B.P. 192 Zahle, Liban</td>
<td>Tel: 961-8-804 422 <a href="mailto:haykrahi@hotmail.com">haykrahi@hotmail.com</a></td>
</tr>
<tr>
<td>Mr. Ziad EL-ZEIN</td>
<td>Marketing Services Coordinator</td>
<td>Lebanese Center for Energy Conservation and Planning Beirut, Lebanon</td>
<td>Tel: 961-3-384 420 Fax: 961-1-565 108 <a href="mailto:ajleeep@terra.net.lb">ajleeep@terra.net.lb</a></td>
</tr>
<tr>
<td>Mr. Benoit FILLE</td>
<td>Conseiller Commercial</td>
<td>Ambassade de France Espace des Lettres Rue de Damas, Bat. K Beyrouth, Liban</td>
<td>Tel: 961-1-420 163 Fax: 961-1-420 157 <a href="mailto:benoit.fille@drec.org">benoit.fille@drec.org</a></td>
</tr>
<tr>
<td>Mr. Boghos GHOUGASSIAN</td>
<td>Coordinator</td>
<td>Middle East Center for Transfer of Appropriate Technology P.O. Box 113 5474 Hamra Beirut, Lebanon</td>
<td>Tel: 961-1-341 323 Fax: 961-1-346 465 <a href="mailto:boghos@mectat.com.lb">boghos@mectat.com.lb</a></td>
</tr>
<tr>
<td>Mr. Hassan HACHEM</td>
<td>General Director of Exploitation</td>
<td>Ministry of Energy and Water Beirut, Lebanon</td>
<td>Tel: 961-1-565 001 Fax: 961-1-565 555 <a href="mailto:ministry@hydro-electric.gov.lb">ministry@hydro-electric.gov.lb</a></td>
</tr>
<tr>
<td>Ms. Nohal AL-HOMSI</td>
<td>Coordinator</td>
<td>Environmental Health Projects World Health Organisation Nathaf Glass Building 4th Floor Beirut, Lebanon</td>
<td>Tel: 961-1-612 970 Fax: 961-1-612 973 <a href="mailto:homsin@leb.emro.who.int">homsin@leb.emro.who.int</a></td>
</tr>
<tr>
<td>H. E. Ayoub F. HEMAYED</td>
<td>Minister of Energy and Water</td>
<td>Ministry of Energy and Water Corniche du Fleuve Beirut, Lebanon</td>
<td>Tel: 961-1-565 110</td>
</tr>
<tr>
<td>Mr. Bassam JABER</td>
<td>Program Manager</td>
<td>Lebanon Water Policy Program Development Alternatives Inc. Ministry of Energy and Water Corniche El-Naher Beirut, Lebanon</td>
<td>Tel: 961-1-565 110 Fax: 961-1-565 666 <a href="mailto:Bassan_jabber@dai.com">Bassan_jabber@dai.com</a></td>
</tr>
<tr>
<td>Name</td>
<td>Position and Organization</td>
<td>Contact Information</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
<td>---------------------------</td>
<td></td>
</tr>
<tr>
<td>Mr. Nizar JIZZINI</td>
<td>Engineering Services Coordinator, Lebanese Center for Energy Conservation and Planning, Ministry of Energy and Water, Corniche El Nahr, Beirut, Lebanon</td>
<td>Tel/fax: 961-1-565108 <a href="mailto:ajlcecp@terra.net.lb">ajlcecp@terra.net.lb</a></td>
<td></td>
</tr>
<tr>
<td>Dr. Adnan JOUNI</td>
<td>Project Manager, Lebanese Center for Energy Conservation and Planning, Beirut, Lebanon</td>
<td>Tel: 961-3-887248 Fax: 961-1-565108 <a href="mailto:ajlcecp@terra.net.lb">ajlcecp@terra.net.lb</a></td>
<td></td>
</tr>
<tr>
<td>Mr. Ahmad KABBARA</td>
<td>President of Export Center, Lebanese Industrial Association, Sanaych, Chambre d'Industrie et du Commerce, Beirut, Lebanon</td>
<td>Tel: 961-3-600123 Fax: 961-5-800775</td>
<td></td>
</tr>
<tr>
<td>Mr. Walid KACHOUAA</td>
<td>Mining Engineer, Petroleum Directorate, Ministère de l'Energie, Beirut, Lebanon</td>
<td>Tel: 961-3-727487 Fax: 961-1-425469</td>
<td></td>
</tr>
<tr>
<td>Mr. Georges KAMAR</td>
<td>Senior Adviser, Ministry of Energy and Water, P.O. Box 166274, Beirut, Lebanon</td>
<td>Tel: 961-3-261214 Fax: 961-1-380040 <a href="mailto:cogic-gk@cyberia.net.lb">cogic-gk@cyberia.net.lb</a></td>
<td></td>
</tr>
<tr>
<td>Mr. Ramez KAYAL</td>
<td>General Manager, Applied Earth &amp; Environmental Sciences, Hojelly Center, lst floor, Pere Yacoub Street, El Saide, Sin El Fil, Lebanon</td>
<td>Tel: 961-1-512121 Fax: 961-1-512122 <a href="mailto:rkayal@ard-group.com">rkayal@ard-group.com</a></td>
<td></td>
</tr>
<tr>
<td>Dr. Najib KHATIB</td>
<td>Director/Partner, Khatib &amp; Alami, P.O. Box 14-6203, Beirut, Lebanon</td>
<td>Tel: 961-1-843843 Fax: 961-1-844400 <a href="mailto:nkhatib@kacec.com">nkhatib@kacec.com</a></td>
<td></td>
</tr>
<tr>
<td>Mr. Khalil KLINK</td>
<td>Civil Engineer at the Projects Division in C.D.R., Council for Development and Reconstruction, Tallet el-Serail, Beirut, Lebanon</td>
<td>Tel: 961-3-758471 Fax: 961-1-981252/3 <a href="mailto:General@cdr.gov.lb">General@cdr.gov.lb</a></td>
<td></td>
</tr>
<tr>
<td>Dr. Mohammad KORDAB</td>
<td>Energy Issues Section, Sustainable Development and Productivity Division, United Nations Economic and Social Commission for Western Asia – ESCWA, P.O. Box 11-8575, Beirut, Lebanon</td>
<td>Tel: 961-1-981301 Fax: 961-1-981510 <a href="mailto:mkordab@escwa-org.lb">mkordab@escwa-org.lb</a></td>
<td></td>
</tr>
<tr>
<td>Mr. Hassan Kamel KOREITEM</td>
<td>Président Directeur Général, Port de Beyrouth, Liban</td>
<td>Tel: 961-1-580918 Fax: 961-1-569511 <a href="mailto:Pb-dir@dm.net.lb">Pb-dir@dm.net.lb</a></td>
<td></td>
</tr>
<tr>
<td>Mr. Ghazi KRAYTEM</td>
<td>Managing Director, Consultancy and Business Venture Group, Mme. Curie Street, Beirut, Lebanon</td>
<td>Tel: 961-3-610559 Fax: 961-3-297049 <a href="mailto:ghazikraytem@hotmail.com">ghazikraytem@hotmail.com</a></td>
<td></td>
</tr>
<tr>
<td>Mr. Claude KNESEVTITCH BASBOUS</td>
<td>Economic Specialist, U.S. Embassy in Beirut, P.O. Box 70-840, Antelias, Lebanon</td>
<td>Tel: 961-4-542600 ext. 240 Fax: 961-4-544794 <a href="mailto:knesevitch@state.gov">knesevitch@state.gov</a></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 4: List of Registered Participants

Mr. Baroud MAHMOUD
Directeur de la Tutelle
Ministry of Energy and Water
Beirut, Lebanon
Tel: 961-1-565 005
Fax: 961-1-565 025

Mr. Michel MAJDALANI
General Manager, Water Resources Expert
B.T.D.
P.O. Box 70492 Antelias
Beirut, Lebanon
Tel: 961-4-712 157/8
Fax: 961-4-712 159
btbd@dm.net.lb

Ms. Roula MAJDALANI
Water Management Team
Sustainable Development and Productivity Division
United Nations Economic and Social Commission for Western Asia – ESCWA
P.O. Box 11-8575
Beirut, Lebanon
Tel: 961-1-981 301
Fax: 961-1-981 510

Mr. Mazen MAKKE
Irrigation Engineer
Irrigation Rehabilitation & Modernization Project
Ministry of Energy and Water
Beirut, Lebanon
Tel: 961-1-565 096
Fax: 961-1-565 097
educate@cyberia.net.lb

Mr. Milad MALLAH
Engineer
Ministry of Energy and Water
Beirut, Lebanon
educate@cyberia.net.lb

Mr. Asmar MAROUN
Chairman
Berytech
Beirut, Lebanon
Tel: 961-3-841 444
msasmar@mco.com.lb

Mr. Wajdi NAJEM
Doyen de la Faculté d’Ingénierie
Université Saint-Joseph
B.P. 11-0514
Riad El Solh
Beyrouth, Liban
Tel: 961-4-532650
Fax: 961-4-532651
Adm-fi@usj.edu.lb

Mr. Samer A. NAJM
Manager, Power Division
Midland Management Corporation s.a.l.
P.O. Box 40-198
Beirut, Lebanon
Tel: 961-5-951536
Fax: 961-5-951650
midland@inco.com.lb

Mr. Hisham NASSER
Vice President
Council for Development and Reconstruction
Tallet Al-Saray
P.O. Box 116/5351
Beirut, Lebanon
Tel: 961-1-981 383
Fax: 961-1-981 384
hnasser@cdr.gov.lb

Mr. Nasser NASRALLAH
General Director
Al Litani River Authority
Lebanon
Tel: 961-1-666 662/3
Fax: 961-1-660 478

Mr. Joseph NSEIR
PDG
Office des Eaux de Beyrouth
Immeuble OEB
Rue Sami El Solh
Beyrouth, Liban
Tel: 961-1-386 760
Fax: 961-1-386 551
Josephhr@inco.com.lb

Mr. Johnny OBEID
General Manager
OTV Liban
Victoria Tower – 8th Floor
Corniche Al Nahr
P.O. Box 55653
Beirut, Lebanon
Tel: 961-1-429 303
Fax: 961-1-325 247
Johnny.obeid@vivendiwater.com

Mr. Joubrane OWAYSHEK
Ondeo Liban S.A.L.
P.O. Box 165 135
Beirut, Lebanon
Tel: 961-1-325 108
Fax: 961-3-327 788
lyonnaise@terra.net.lb
joubrane.owayshek@ondeo-liban.com

Ms. Zeina RIZKALLAH
Ingénieur Civil
Beyrouth, Liban
Tel: 961-1-320 877
Cell: 961-3-289 077
zeinar@dm.net.lb
Mr. Camille SAADÉ  
Legal Adviser  
C.S. Sagesse  
Archrafieh  
Beirut, Lebanon  
Tel: 961-1-564 112  
Fax: 961-1-425 881  
Email: csaade@sagesseclub.com  
Email: camisade@inco.com.lb

Mrs. Sana SALIBA  
Program Management Specialist  
USAID  
Beirut Awkar, American Embassy  
Beirut, Lebanon  
Tel: 961-4-543 600  
Fax: 961-4-544 254  
Email: salibasg@inco.com.lb  
Email: salibasg@state.gov

Mr. Jacques Jean SARRAF  
President  
Malia Holding sal  
Amaret Chalhoob, Sarraf Building  
P.O. Box 90201  
Jdeideh-el-Metn, Lebanon  
Tel: 961-1-888306 ext. 337  
Fax: 961-1-900100  
Email: jacquessarraf@maliaholding.com

Mr. Salim SARRAF  
Irrigation and Water Resources Expert  
Beirut, Lebanon  
Tel: 961-217 193  
Email: Salim@sarraf.org

Ms. Sherine SHALLAH  
Consultant  
Connexus Consulting  
Nassif Building  
Sourati Street, Hamra  
P.C. 2034-6413  
Beirut, Lebanon  
Tel: 961-3-755 075  
Fax: 961-1-746 353  
Email: sshallah@connexusco.com

Mr. Kamal SHEHADI  
Managing Director  
Connexus Consulting  
Nassif Building  
Sourati Street, Hamra  
P.C. 2034-6413  
Beirut, Lebanon  
Tel: 961-1-755 075  
Fax: 961-1-746 353  
Email: kshehadi@connexusco.com

Mr. Jean-Claude SEROPIAN  
General Manager  
ONDEO Liban SAL  
Avenue Charles Malek, Imm. Ellipse  
B.P. 165 135 Beirut, Lebanon  
Tel: 961-1-325 108  
Fax: 961-1-325 247  
Email: jean-claude.seropian@ondeo-liban.com

Mr. Wael SUKKARIEH  
President  
SUBAL Engineering  
P.O. Box 113 5807  
Beirut, Lebanon  
Tel: 961-1-366 860/1  
Email: subal@dm.net.lb

Mr. Roupen Hagop SULAHIAN  
Head of the Electrical Department  
Khatib & Alami  
Beirut, Lebanon  
Tel: 961-1-843843  
Fax: 961-1-844400  
Email: rsulahian@kaecc.com

**MOROCCO**

Mr. Rachid BALAFREJ  
Conseiller du Ministre  
Ministère de l'Eau et de l'Aménagement du Territoire  
Rabat, Maroc  
Tel: r.balafrej@matee.gov.ma

Mr. Abdellatif BENNANI  
Directeur du Budget  
Ministère des Finances et de la Privatisation  
Avenue Mohamed V Chellah  
10000 Rabat, Maroc  
Tel: 212-37 76 34 34  
Fax: 212-37 76 10 72  
Email: bennani@db.mfie.gov.ma

Mr. Fouad DJERRARI  
Directeur Général Adjoint  
Lyonnaise des Eaux de Casablanca  
LYDEC  
48 rue Mohamed Diouri  
B.P. 16048  
2000 Casablanca, Maroc  
Tel: 212-22 54 90 26  
Fax: 212 22 54 93 07  
Email: fouad.djerrari@lydec.co.ma

Mr. Ali FASSI FIHRI  
Directeur Général  
Office National de l'Eau Potable (ONEP)  
Avenue Oued Akrah  
Rabat, 10000 Maroc  
Tel: 212-37-65 06 95  
Email: onepdg@mtds.com
## Appendix 4: List of Registered Participants

### NORWAY

<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
<th>Organization/Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Jan MOEN</td>
<td>Director of Regulation</td>
<td>Norwegian Water Resources and Energy Directorate, Oslo, Norway</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel: 47-22-95 91 42, Fax: 47-22-95 90 99</td>
</tr>
<tr>
<td>Mr. Semund HAUKLAND</td>
<td>Adviser, Water Energy and Environment</td>
<td>Norwegian Agency for Development Cooperation, P.O. Box 8034 Dep., 0030 Oslo, Norway</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel: 47-22-22 4020, Fax: 47-22-22 4031</td>
</tr>
</tbody>
</table>

### OMAN

<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
<th>Organization/Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Mohammad AL-MAHROUQI</td>
<td>Director General for Private Sector Affairs</td>
<td>Ministry of National Economy, P.O. Box 881, 113 Muscat, Oman</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel: 968 740 202, Fax: 968 740 737</td>
</tr>
<tr>
<td>Mr. Koussai QUTEISHAT</td>
<td>Director</td>
<td>Middle East Desalination Research Center, P.O. Box 21 Al-Khuwair, Oman PC133</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel: 968-695 351, Fax: 968 697 107</td>
</tr>
</tbody>
</table>

### PALESTINE

<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
<th>Organization/Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Khairy AL-JAMAL</td>
<td>Director</td>
<td>Palestinian Water Authority, Izz Eddin El-Qassam Street, Gaza, Palestine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel: 972-8-282 2696, Fax: 972-8-282 2697</td>
</tr>
<tr>
<td>Mr. Nabil SHARIF</td>
<td>Chairman</td>
<td>Palestinian Water Authority, Izz Eddin El-Qassam Street, Gaza, Palestine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel: 972-8-282 3407, Fax: 972-8-282 3407</td>
</tr>
<tr>
<td>Mrs. Edle HAMRE</td>
<td>Senior Executive</td>
<td>The Norwegian Representative Office to West Bank and Gaza, Edle Hamre Dahiat al-Bareed, P.O. Box 25161, Shufat 97300, Jerusalem, Palestine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel: 972-2-234 5050, Fax: 972-2-234 5079</td>
</tr>
<tr>
<td>Mr. Monther SHOBLAK</td>
<td>Deputy Director</td>
<td>Palestinian Water Authority, Izz El-Deen El-Qassam Sr., El-Rimal, Gaza</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel: 972-8-282 282 7520, Fax: 972-8-282 2697</td>
</tr>
</tbody>
</table>

### SAUDI ARABIA

<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
<th>Organization/Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Saud A. AL ABDUL HADI</td>
<td>Specialist Economic Studies</td>
<td>The Saudi Fund for Development, P.O. Box 50483, Riyadh 11523, Saudi Arabia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel: 966-1-464 0292 ext. 2219, Fax: 966-1-464 7450</td>
</tr>
<tr>
<td>Mr. Abdulaziz ALBAHELY</td>
<td>Legal Advisor</td>
<td>Saline Water Conversion Corporation, P.O. Box 9964, Riyadh 11432, Saudi Arabia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel: 966-1-463 1111, Fax: 966-1-463 1111</td>
</tr>
<tr>
<td>Mr. Tariq AL-BETAIRI</td>
<td>Executive Vice President</td>
<td>Saudi Electricity Company, 22955 Riyadh 11416, Saudi Arabia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel: 966-1-218 0340, Fax: 966-1-218 0357</td>
</tr>
<tr>
<td>Eng. Ziad AL HUSSAIN</td>
<td>Member, Privatisation Committee</td>
<td>Saline Water Conversion Corporation, Riyadh 11432, Saudi Arabia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel: 966-1-463 1111 ext. 2236, Fax: 966-1-463 1111</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Name</th>
<th>Position/Role</th>
<th>Organization/Address</th>
<th>Contact Details</th>
</tr>
</thead>
</table>
| Mr. Abdulrahman AL KHAMIS    | Deputy Gov. Administration and Finance                            | Saline Water Conversion Corporation  
Riyadh-Olaya-King Fahad Road  
P.O. Box 1897  
Riyadh 11441, Saudi Arabia | Tel: 966-1-463 2310  
Fax: 966-1-463 2310  
khamissa2000@yahoo.com |
| Mr. Ahmed AL-SALLOUM         | Director General                                                   | The Arab Urban Development Institute (AUDI)  
P.O. Box 6892  
Riyadh, 11542 Saudi Arabia | Tel: 966-1-480 2555  
Fax: 966-1-480 2666  
Alsalloum@araburban.org |
| Eng. Abdullah M. AL SHOAIBI  | The Saudi Fund for Development                                     | P.O. Box 56283  
Riyadh 11554, Saudi Arabia | Tel: 464 0292  
Fax: 464 7450  
aboshoaib@yahoo.com |
| Dr. Gamal HAMID              | Urban Planning Specialist                                          | The Arab Urban Development Institute (AUDI)  
P.O. Box 6892  
Riyadh, 11542 Saudi Arabia | Tel: 966-14802 697  
Fax: 966-14802 666  
ghamid@araburban.org |
| SYRIA                         |                                                                   |                                                       |                                  |
| Mr. Hafez AL-SADEQ           | Ph.D. Sector Advisor                                               | Japan International Co-Operation Agency (JICA)  
Abu Rummaneh, Al-Mahdi Bin Baraka Str. Building No. 28  
P.O. Box 10012  
Damascus, Syria | Tel: +963 11 3336858  
Fax: +963 11 3339359  
sadeq@jica.go.jp |
| Mr. Yasunori NAKAYAMA        | JICA - Assistant Resident Representative                          | Baklounis Building  
Abu Rummaneh, Al-Mahdi Bin Baraka Str. Building No. 28  
P.O. Box 10012  
Damascus, Syria | Tel: +963 11 3336858  
Fax: +963 11 3339359  
Nakayama.yasunori@jica.go.jp |
| Mr. Takehiko SOMEYA          | JICA Hydrologist/Expert                                            | Ministry of Irrigation, WRIC  
3rd Floor, Building no. 2  
Jazera no. 1  
Dahyiet Dummar  
Damascus, Syria | Tel: +963 1 3127830 / 3127832  
Fax: +963 11 3127831  
nomeya@scs-net.org |
| Mr. Nobuo SUGIURA            | Project Coordinator                                                | Ministry of Irrigation, WRIC  
3rd Floor, Building no. 2  
Jazera no. 1  
Dahyiet Dummar  
Damascus, Syria | Tel: +963 1 3127830 / 3127832  
Fax: +963 11 3127831  
sugi@scs-net.org |
| Mr. Ammar WAQQAF             | Programme Officer                                                  | Japan International Co-Operation Agency (JICA)  
Abu Rummaneh, Al-Mahdi Bin Baraka Str. Building No. 28  
P.O. Box 10012  
Damascus, Syria | Tel: +963 11 3336858 EXT.112  
Fax: +963 11 3339359 EXT.112  
ammar@jicasr.org |
| TUNISIA                       |                                                                   |                                                       |                                  |
| Mr. Rabah JERAD              | Directeur Général Adjoint                                          | Société Tunisienne de l’Electricité et du Gaz  
38 Rue Kamel Ataturk  
Tunis 1080 | Tel: 216-71-334 366  
Fax: 216-71-335 031  
Dga@Steg.Com.Tn |
| UNITED KINGDOM               |                                                                   |                                                       |                                  |
| Mr. Richard MORRIS           | Desalination Expert                                                | 9 Letham Drive  
Newlands  
Glasgow G43 3SL  
Scotland, United Kingdom | Tel: 44-141 637 3146  
Fax: 44-141-637 3146  
Richard.morris14@ntlworld.com |
Appendix 4: List of Registered Participants

Mr. Stephen YOUNG
Infrastructure Adviser
Western Asia, Middle East and North Africa Department for International Development
1 Palace Street (6W1)
London SW1E 5HE, United Kingdom
Tel: 44-207 023 0228
Fax: 44-207 023 0744
S-Young@dfid.gov.uk

WORLD BANK GROUP

Mr. Amir AL-KHAFAJI
Lead Operations Specialist
World Bank
Middle East and North Africa Region
Washington, DC
Tel: 1-202-473 28 17
Fax: 1-202-477 1993
aalkhafaji@worldbank.org

Mr. Alex BAKALIAN
Senior Water Supply Specialist
World Bank
Middle East and North Africa Region
Washington, DC
Tel: 1-202-473-5319
Abakalian@worldbank.org

Mr. Christophe BELLINGER
Director, Europe
Multilateral Investment Guarantee Agency
World Bank Office in France
Tel: 33-1-40 69 32 75
Fax: 33-1-40 69 3276
cbellinger@worldbank.org

Mr. Mohammed BENOUAHI
Lead Financial Analyst
World Bank
Lebanon Country Office
Middle East and North Africa Region
Washington, DC
Tel: 961-1-987 800 ext. 229
Mbenouahi@worldbank.org

Ms. Anna BJERDE
Senior Infrastructure Specialist
World Bank
Washington, DC
Tel: 1-202-473-3541
Fax: 1-202-477-1993
abjerde@worldbank.org

Ms. Sylvie BREBION
Consultant to the World Bank
La Roche
63300 Thiers, France
Tel/Fax: 33-4-70 96 01 51
brebions@yahoo.com

Ms. Elisabetta CAPANNELLI
Programme Manager
World Bank/European Commission
Program on Private Participation in Mediterranean Infrastructure, Brussels
Tel: + 32 (0)2 552 0024
Fax: + 32 (0)2 552 0025
ecapannelli@worldbank.org

Ms. Manuela CHIAPPARINO
Research Analyst
World Bank/European Commission
Program on Private Participation in Mediterranean Infrastructure, Brussels
Tel: 32-2-552 0031
Fax: 32-2-552 0025
mchiapparino@worldbank.org

Ms. Francoise CLOTTES
Sector Manager
Finance, Private Sector & Infrastructure Group
Middle East and North Africa Region
World Bank
Tel: 1-202-458-2898
Fclottes@worldbank.org

Mr. Majed EL-BAYYA
Senior Operations Officer
World Bank
West Bank and Gaza Office
55/436 United Nations Avenue, Remal, Gaza
Tel: 972-8-282 4746
Fax: 972-8-282 4296
Mbayya@worldbank.org

Mr. Suhail JME’AN
Senior Financial Analyst
World Bank
Middle East and North Africa Region
Washington, DC
Tel: 1-202-473-2991
Fax: 1-202-477 1998
sjmean@worldbank.org

Ms. Lizmara KIRCHNER
Program Assistant
World Bank
Middle East and North Africa Region
Washington, DC
Tel: 1-202-473 1325
Fax: 1-202-477 1998
Lkirchner@worldbank.org

Mr. Bourhan KREITEM
Coordinator
Professional Support Unit
World Bank Vocational and Technical Education Project
Directorate General for Vocational and Technical Education
Ministry of Education and Higher Education, Lebanon
Cell: 961-3-870 088
bkreitem@hotmail.com
Appendix 4: List of Registered Participants

Ms. Fanny Kathinka MISSFELDT-RINGIUS
Young Professional
World Bank
Middle East and North Africa Region
Washington, DC
Tel: 1-202-458-9645
fmissfeldt@worldbank.org

Ms. Randa NEMER
Water and Environment Consultant
World Bank
Lebanon Country Office
Tel: 961-1-240 553
Fax: 961-1-325 320
rnemer@cvberia.net.lb

Mr. Samuel O’BRIEN-KUMI
Senior Energy Economist
World Bank
Middle East and North Africa Region
Washington, DC
Tel: 1-202-473-2690
Sobrienkumi@worldbank.org

Mr. Omar M. RAZZAZ
Country Manager
World Bank
Lebanon Country Office
Orazzaz@worldbank.org

Ms. Lara SAADE
External Affairs and Outreach
World Bank
Middle East and North Africa Region
Washington, DC
Tel: 1-202-473 3245
Fax: 1-202-522 0006
lsaade@worldbank.org

Mr. Jamal SAGHIR
Director
Energy and Water Department
World Bank
Washington, DC
Tel: 1-202-473-2789
Fax: 1-202-522 3228
Jsaghir@worldbank.org

Mr. Tjaarda STORM VAN LEEUWEN
Lead Energy Specialist
World Bank
Middle East and North Africa Region
Washington, DC
Tel: 1-202-458 1464
Fax: 1-202-477 1998
tstormvanleeuwen@worldbank.org

Ms. Hiba TAHBOUB
Sr. Procurement Specialist
World Bank
Middle East and North Africa Region
Washington, DC
Tel: 1-202 473 0609
Fax: 1-202 477 1998
Htahboub@worldbank.org

Ms. Maha YAHYA
Consultant
World Bank
Lebanon Country Office
mmyahya@mit.edu

YEMEN

Dr. Ali Mohammed AL-ASHWAL
Director of Power Sector Reform Program
Ministry of Electricity and Water
P.O. Box 12153
Sana’a, Yemen
Tel: 967-1-222 494
Fax: 967-1-241 758
al-ashwal@y.net.ye

Dr. Mohamed AL-HAMDI
Vice Executive Chairman
National Water and Sanitation Authority
Ministry of Electricity and Water
P.O. Box 104
Sana’a, Yemen
Tel: 967-1-250 158
Fax: 967-1-251 536
nwsahq@yemen.net.ye

Mr. Anwer SAHOOLY
Chairman,
Technical Secretariat for Water Supply and Sanitation Sector Reform
Ministry of Water and the Environment
P.O. Box 692
Sana’a, Yemen
Tel: 967-1-214502
Tel: 967-1-326209
Fax: 967-1-328644-43
techsec@y.net.ye