Energy Security and Prospects for EU-Israel Co-operation

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Abstract

Energy security has re-emerged as one of the drivers of European energy policy and even of the EU's external policy. For Israel, energy security has always been the main objective of energy policy and it is probably the most affected country by energy geopolitics in recent history. The EU is also being affected by the Arab-Israeli conflict, insofar as it prevents a consistent development of the natural energy corridor that runs from the Persian Gulf to the Mediterranean through Israel. On the other side, the EU and Israel also share concerns on Russian petro-politics. Israel-EU energy security cooperation also has non geopolitical dimensions like energy regulation convergence and the promotion of renewable energy. Israel could be interested in considering its inclusion in a potential PanEuroMediterranean energy region modelled after EU regulations and policies.

Introduction

During the last years, energy security has re-emerged as a leading driver in European energy policy. To be clear, by European energy policy we mean the interaction of Member States' own energy policies and the European Commission body of energy related regulations and policies. In spite of the weak mandate the European Commission has on some energy domains, and the lack of a well-defined European energy model, the Commission discourse has to some extent succeed in setting the European energy policy agenda. The EU energy policy objectives consist of securing energy supplies, assuring economic efficiency and achieving environmental sustainability. The increasing emphasis on the energy security dimension is supported by a move towards setting a European external energy policy (European Commission 2007).

This is hardly surprising to Israel, for whom energy security has always been the main objective of energy policy, and which is probably the most affected country by energy geopolitics in recent history. The Arab-Israeli conflict was the catalyser of the 1973 energy crisis, and Israel has had to conduct impressive and very costly efforts in order to assure its energy supply without relying on some of the

main world hydrocarbon producers that happen to be its neighbours. At the same time, Israel has also made use of the energy weapon against the Palestinian Authority. European countries, however, are also affected by the conflict, insofar as it prevents the full development of the natural energy corridor that runs from the Persian Gulf to the Eastern Mediterranean. This potential corridor links Gulf hydrocarbon reserves with European energy consumption markets and it is, without a doubt, the most relevant energy corridor to the EU in the long run. This is so because the highest oil production/reserves ratios are found in the Persian Gulf, and since natural gas diversification away from Russia and North Africa will increasingly rely on Gulf LNG providers.

The chapter will first briefly present the energy security situation in Israel as compared to EU Member States figures. The second section is devoted to the analysis of EU and Israel energy policies, both from the regulatory and geo-economic perspective. The final section explores the scope of cooperation between the EU and Israel in the field of energy security.

Energy supply security

The economic analysis of energy security, understood as the security of energy supply, is a complex matter. The very economic meaning of supply security for a commodity is debatable. The market reflects the scarcity of a good through rising prices. Supply security depends on the consumer's ability to pay high prices in order to acquire the desired quantity of a particular commodity. Therefore, the concept of energy security includes a price element, meaning supply security is achieved when price increases or its economic impact are minimised. Economic insecurity is therefore a result of rising prices and the impact of price volatility on consumer country economies. Most of the economic literature is devoted to the impact of price volatility and monetary policy responses.

But supply insecurity also includes a physical component unrelated to prices and implicit in any interruption to supply, temporary or permanent, partial or total. From the economic point of view it is easy to fall into the temptation of seeing physical insecurity as a factor behind price fluctuations, but the real impact on energy security is of a different nature. Supply interruptions not only entail economic and social costs, which may pose a direct threat to the viability of a country's economic model, but also to security, both foreign and

domestic. Recent conflicts offer countless examples of the strategic importance of energy supplies (Yergin 2006).

One way of incorporating a strategic element into the economic analysis of energy security is to consider it an externality: its social benefit is greater than the private benefit, justifying state intervention aimed at ensuring maximum energy security. The market may be unable to sufficiently evaluate the unlikely events that might lead to supply interruption (accidents, natural disasters, political motivated interruptions, terrorism...) and this failure should be considered in order to minimise its social cost. Maintaining security reserves or excess capacity at facilities incurs high capital costs that companies would not necessarily face in a competitive environment. Regulation regarding stocks levels, maximum percentages for imports or security standards internalise some of these external costs. Once internalised, companies pass these costs onto consumers by lifting end prices.

Part of these external costs may be internalised with some precision, such as those linked to accidents (increasing security standards and compensation payments, for example). But geopolitical insecurity and its social costs are very difficult to objectify. In the final analysis, external costs of a geopolitical nature depend on the perception of insecurity of the parties involved. Supply security therefore encompasses two different concepts: a certain quantity of hydrocarbons supplied at a price considered compatible with maintaining the wellbeing of the population; and the psychological concept of security, which is a sentiment based on perception, and is therefore subjective by nature.

At the same time, the perception of energy security is influenced by context. What usually defines energy security is, first, the state of political relations between consumer and producing countries and, if applicable, transit countries (and also relations between transit countries themselves); and second, the domestic situation of pivotal countries in the international energy system. For example, Eurobarometer data indicates that 87% of European citizens believe it to be very important or quite important that the EU develop specific relations with its neighbours regarding energy (European Commission 2006a).

From a conceptual point of view, the perception of energy security in consumer countries rests on the country’s dependence, vulnerability

and connectivity.[1] Energy dependence is the most used and discussed concept, although it may be more appropriate to talk of interdependence. Dependence is usually quantified as physical dependence (percentage of net imports out of total primary energy produced or consumed) or economic dependence (value of energy imports). Most forecasts for the EU indicate an increase in both indicators over the forthcoming decades, and this trend is perceived as an energy threat.[2] On the other hand, other authors consider dependence to be less relevant for supply security than vulnerability (Alhaji and Williams 2003).

One response to energy dependence has in the past been diversification, but this does not tackle dependence but rather physical vulnerability. Reducing dependence implies cutting energy imports and reaching self-sufficiency, which is not feasible and probably would not even guarantee energy security. Physical vulnerability is usually estimated based on the geographic concentration of supply and the flexibility of Liquefied Natural Gas (LNG) facilities. Economic vulnerability reflects the energy intensity of an economy, which means that price increases or supply interruptions represent asymmetric economic shocks, insofar it has more severe effects on countries with a more energy-intense economic structure.

The other important factor for energy security is connectivity: The more connected an energy system is, the more supply security it provides, as the value of a network depends on its scope and number of connections. First, this provides flexibility and allows the substitution of an interrupted source for an alternative one, reducing the need for costly facilities such as strategic and commercial stocks. Secondly, connectivity "regionalises" the interruption, and with a greater number of countries affected the ability to put pressure on the source of the interruption also increases.

Table 1 compares some energy indicators for selected EU and Mediterranean Partner Countries (MPC's). It shows that Israel is highly dependent on energy imports, even more than European Mediterranean countries like Greece, Spain or Italy. However, during the last few years Israel has managed to reduce both its energy dependence and economic vulnerability, while most EU countries and

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1 For a wider discussion on the concept and its application to EU's energy security, see Escribano (2006).

2 For a recent summary of the key scenarios, see Costantini et al (2007).

MPC's have seen both figures increasing. Israel's net imports over Total Primary Energy Supply (TPES) decreased from 98% in 2001 to 93.5% in 2005, and energy imports from 20% of GDP to 14% during the same period. In Spain, for instance, both figures increased from 79% to 86% and 14% to 18%, respectively. This is mainly explained by the reduction of crude imports after the discovery of the Ashkelon natural gas off-shore fields.

	TPES (Mtoe)*	*Net Imports*	*Net Imports/ TPES (%) (1)*	*TPES/ GDP (toe/000 2000$) (2)*	*TPES/ Population (toe/capita)*	*Electricity consumption/ Population (kWh/capita)*	*Economic vulnerability (1)x(2)*
Egypt	61.3	-13.35	-21.78	0.51	0.83	1226	-
France	275.97	143.3	51.93	0.19	4.4	7707	9.8
Germany	344.75	214.47	62.21	0.18	4.18	7111	11.2
Greece	30.98	23.13	74.66	0.17	2.79	5242	12.7
Israel	19.5	18.25	93.59	0.15	2.82	6759	14.0
Italy	185.19	159.53	86.14	0.16	3.16	5676	13.8
Jordan	7.09	7.08	99.86	0.62	1.3	1657	61.9
Poland	92.97	16.68	17.94	0.47	2.44	3438	8.4
Spain	145.2	124.68	85.87	0.21	3.35	6147	18.0
Turkey	85.21	61.89	72.63	0.35	1.18	1898	25.4
UK	233.93	32.26	13.79	0.14	3.88	6254	1.9

Table 1: Energy indicators, selected countries 2005. Source: IEA, *Key World Energy Statistics 2007***.**

*TPES: Total Primary Energy Supply

However, Israel's energy intensity (the energy needed to generate a GDP unit) is quite low. Israel's energy intensity went down by 25% between 2001 and 2005, while the opposite trend is observed for most EU countries. As a result, in 2005 Israel's economic vulnerability to energy crisis was higher than for Poland, France, or Germany, close to that of Italy or Greece, and smaller than that of Spain or Turkey. The relative resilience of the Israeli economy to energy price shocks should not conceal the already mentioned high economic cost of securitising energy policy.

Table 1 also shows the energy picture for significant countries for Israel's energy security, such as Egypt as supplier, Turkey as a transit country, and Jordan as a potential, natural transit country, but also a consumer competing country. All of them present very low indicators

for energy consumption per capita, raising the question of whether these producers and transit countries would not press for higher domestic consumption ratios in the future. In the case of Turkey, its consolidation as an energy hub is likely to be increasingly captured by EU markets.

Connectivity varies greatly across the Euro-Mediterranean region, but it is difficult to find a better example of an energy island than Israel. There are no electricity connections with neighbouring countries, and its only link is to the East Mediterranean Gas (EMG) pipeline, terminating in the Israeli port city of Ashkelon. Israel received its first flows of Egyptian gas on May 2008, following a 2005 agreement for the supply of 1.7bn cm/y of Egyptian gas for 20 years (Petroleum Economist, June 2008). This makes Israel (inter)dependant with Egypt; however it is an asymmetric dependency, to the extent that Egypt can export its gas to other markets, and Israel is not a transit, but a final destination country for Egyptian gas. From the EU side, fostering intra-EU interconnections is a top priority of EU's energy policy. Interconnections serve three different objectives: technically, it makes networks more efficient; economically, it allows for increased competition; from an energy security perspective it is the best way to implement solidarity. Intra-European interconnections are limited to core EU countries, while peripheral Member States tend to be more isolated.

For instance, the Iberian Peninsula is linked to France by very low capacity electricity connections, which are usually congested, and by a small gas pipeline. But Spain is linked to the Moroccan electricity network and receives natural gas from Algeria by the Maghreb-Europe pipeline across Morocco, and a second pipeline directly from Algeria is well advanced. Also, being the third LNG world importer after Japan and South Korea (Spain's imports accounts for almost half of EU LNG imports) compensates for the lack of energy infrastructures connecting to the rest of Europe. In the absence of access to energy networks, LNG terminals are a good substitute in providing flexibility and diversifying geographical sources, whose main drawbacks are concerns on security and safety. Israel, like several EU countries, is currently considering the construction of such facilities to increase diversification of natural gas supply.

Energy security policies and strategies

Although energy security may be objectivised through dependence, vulnerability and connectivity, two additional dimensions should be

considered. First, supply interruptions are quite often the result of a deficient regulatory system which does not give incentive to generation and transmission investment, exposing EU countries and Israel to occasional blackouts. Therefore, there is an energy security policy dimension related to the setting of proper regulations, closely related to competition policy. Second, it is the geopolitical context that determines if a particular situation is to be perceived as a threat to energy supply security. This in turns requires the analysis of energy security scenarios and the respective design of alternative strategies and their associated policies.

The achievement of an integrated and liberalised European energy market by means of regulatory convergence to the relevant *acquis communautaire* is the current European Commission mantra for the first dimension. The process is encountering harsh opposition from both EU Member States governments and companies, which want to preserve their control over a strategic sector and the privileges inherited from an essentially closed and oligopolised market, respectively. However, in spite of the difficulties, the integration and liberalization of EU energy markets is progressing and constitutes a powerful scenario in the long run. Both instruments are devoted to the objective of preserving competitiveness. Interestingly, the European Commission seems to have recurred to the energy security argument to promote its liberalization and integration agenda.

In fact, Israel has also advanced towards the liberalization of the energy sector, especially when considering that it is coming from a severe competition restricted situation that sometimes has been defended on the grounds of security concerns. Competition is the second listed objective, after security of supply, of the current Israel Energy Master Plan.[3] However, reforms are limited in several areas and market power tends to prevail. In the electricity sector there are competition problems with commercialization, unbundling, transmission, distribution, and so forth, the Israel Electric Co. (IEC) being the only generator and distributor. Netivei Gas Co. (NGC) is the only company in the natural gas sector, where similar deficiencies may be identified. The upstream gas and petroleum sector is controlled by the Petroleum Commission, in charge of regulation and licensing, but there is no National Oil Company (NOC). The downstream petroleum sector was under the monopoly of Oil

[3] The three remaining ones being energy efficiency, environment and optimal use of land. A new Master Plan is in progress.

Refineries Ltd. (ORL) until 2004, when the two Haifa refineries were established as two separate companies. By 2007 both were privatised and in general there are few competition problems, with the only exception of logistics, where the government is still very much present with infrastructure ownership.[4]

Energy security policy is defined as minimizing the risk of energy crisis by political means (CIEP 2004: 36). Energy security policies respond to different international energy scenarios, but at the same time these policies influence the long run scenarios themselves. For instance, the emphasis on securing supplies in the short term by bilateral agreements or point-to-point transport infrastructures may hamper the development of an open, interconnected and more facilitating international energy system in the long run. Policies have to be efficient in the short run, but also consistent with long term objectives. In this regard, the fragmentation of the international, or regional, energy system is especially costly for energy islands like Israel and some peripheral EU countries, whose options for diversification are relatively scarce.

Diversification has become almost an obsession to energy policy-makers in order to reduce geo-economic vulnerability. Diversification is promoted at both energy source and geographical levels. Diversification away from petroleum towards coal, natural gas, nuclear or renewable energy varies widely across Euro-Mediterranean countries depending on national resources, technologies and public opinions. The EU's objective of renewable energy supplying 20% of TPES by 2020 is highly ambitious, while Israel's objectives are more modest (2% of electricity by 2007 and 5% for 2016).[5] However, Israel is a world leader in renewable energy technology: it has the highest per capita solar heaters in the world, and is well positioned in both the classical photovoltaic and the more promising thermo-solar technologies[6].

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4 For an extensive survey, see Resources and Logistics (2007): Energy Policy and Co-operation Review in the Mediterranean Region. Country Report Israel. The report is available at the DGTREN web page.

5 For instance, according to Eurostat's Euro-Mediterranean Statistics the weight of renewable energy in electricity production in 2005 was 18.4% in Spain, 17.5% in Germany and 12.6% in the Netherlands.

6 For instance, Israel's Solel Solar Systems plans to build a 533 MW facility in the Mojave Desert to be completed by 2011.

Another trend is the shift from fuel and coal to natural gas powered electricity generation plants. The EU as a whole is increasingly dependent on foreign natural gas, due to rising demand and maturing fields in the North Sea. The EU's central scenario indicates that in 2030 close to 90% of the natural gas demand in the EU would be covered by imports (European Commission 2006b). Several events affecting key producer countries during the past few years have reinforced the insecurity perception of EU countries, such as the interruptions of gas supply by Russia to Ukraine that affected several EU countries; the resolution of the Galsi contract between Algerian NOC Sonatrach and Spanish Repsol YPF and Gas Natural; the eventuality of Russia, Algeria and Iran leading a GasPEC; or the longstanding but increasing pressure by Russia to control energy corridors from Central Asia through the Caucasus, that threaten the viability of the Nabucco gas pipeline which would link the EU with the Turkish pipelines coming from the Caspian Sea and Iran avoiding the Russian pipeline network. EU's Member States will increasingly rely on either Russian (Central Europe) or North African (Mediterranean Europe) gas. Accordingly, these two groups of countries have different external energy policy preferences.

Israel is in a more difficult situation. It has natural off-shore gas reserves for some 15 years, and by now its only foreign provider is Egypt. There are serious concerns about the Egyptian capacity to fulfil the ambitious objective of doubling its LNG exports. To date Egypt has not been able to assure enough gas discoveries to justify a further increasing in LNG capacity. Today it has two terminals with three trains, which is a very respectable capacity with the ability to easily absorb the Gaza Marine gas field. This is the second option. Negotiations between Israel and British Gas (BG) to import gas from the offshore Gaza Marine field, in Palestinian Authority waters, ended because the Israeli government argued that it could reinforce Hamas economically. However, it seems that Israel was unwilling to pay the price BG wanted for the gas, even after Olmert's government lobbied the UK government to convince BG to resume negotiations.

The option open to BG is to export Gaza's gas to Egypt, and from there to world markets, profiting from Egyptian LNG terminals. Paradoxically, but quite commonly in energy geopolitics, Israel will probably still receive BG's Gaza gas physically. If it enters Egypt's pipeline network at El Arish, it would in fact be swapped for the piped exports to Israel, in exchange for the gas that BG would take out of the grid for its Idku LNG plant. Israel has announced that this would

contravene its agreement with Egypt, complicating the situation. In 2006, Israel even denied the permit to access Israeli waters to a vessel BG chartered to assess the pipeline route from Gaza Marine to Egypt in order to obstruct Palestinian prospects of exporting gas to Egypt. Most analysts suggest that the economically rational solution will be to export Gaza Marine gas directly to Israel (Petroleum Economist 2006).

Another alternative is to build a pipeline linking the Black and Red seas, overland across Turkey and offshore along the Mediterranean coast, a project that involve transportation of oil, natural gas, electricity, water and fiber optic cables. This will allow Israel to import natural gas from Russia and the Caspian Sea (including Iran). It remains to be seen if such a project remains in the limbo of pipeline diplomacy or if it benefits from would-be complementary initiatives, like the Nabucco pipeline. However, after the Georgia crisis in August 2008, geopolitical uncertainty has risen considerably with regard to direct access to Central Asia natural gas resources, not to speak about Iran. Perhaps the most pragmatic strategy is to move to LNG producers. The Israeli government is considering building a 2.9m t/y LNG receiving terminal to start up by 2014, and has begun talks to import from Qatar (Petroleum Economist 2008).

Oil supply is less prone to be used as a political weapon than natural gas. Oil markets are fungible and more flexible than gas markets. Gas markets are usually based upon long term contracts, and only a small fraction of LNG is traded in spot markets. So, a disruption in production in the Gulf of Mexico affects all Euro-Mediterranean consuming countries in an economically symmetric way, even if only Spain and Israel import significant oil volumes from Mexico (US production remains in the US): oil price rises. Oil security of supply problems arise at the three industry levels. Upstream, at producer's countries' NOC's control reserves. Midstream, with producer, transit countries (and sometimes other countries, like the US) controlling transport corridors and chokepoints to different degrees. Downstream, where refining and distribution depends on industry capacity and regulation. The EU's geographical oil diversification varies greatly across Member States. Some countries are relatively well diversified, like France or Spain, while others have a significant weight of Russian oil in total imports, like Germany or Poland.

Geographical diversification reaches clear limits in the long run. Under any scenario, every projection points that in the future the

Middle East will be called to serve most of the increase in world oil demand, because Russian and Caspian capacities to significantly increase production are limited. So, over the long run, for Europe the Persian Gulf-Eastern Mediterranean energy corridor is the axial one. This corridor was open in the past through Israel by the way of the Trans-Arabian pipeline (Tapline) and the Trans-Israel pipeline (Tipline). The Tapline was intended to export oil from Qaisuimah in Saudi Arabia to Haifa, then under the British Mandate of Palestine, but the establishment of the State of Israel imposed an alternative route ending in the Lebanese Sidon export terminal. In 1976 transport beyond Jordan ended, and the latter line also ceased operation in 1990 following Saudi Arabian concerns on Jordanian support of Iraq in the first Gulf War.

The Tipline, or Eilat-Ashkelon pipeline, was built in 1968 to transport oil from the Shah's Iran to Europe, linking both Red Sea and Mediterranean Israeli ports.[7] In 1979 the pipeline went into disuse, but in 2003 was modified to reverse flows to facilitate Russian and Azerbaijan oil exports to the Far East. So, instead of using the Gulf-Eastern Mediterranean corridor to transport oil from Gulf countries to the EU, it is now being used to export Russian and Central Asia oil to the Far East, via Turkey, serving the Israeli market along the way. This is an unnatural and inefficient result from an economic perspective, but also an inconsistent one when considering that in the long run the Gulf-Eastern Mediterranean corridor will be the most strategic energy corridor for Europe.

With the only exception of oil supplies from Iran (mid-1950s to late 1970s) and Egypt, Israel has had to buy oil from distant producers such as Mexico, Norway and West African countries. However, since the disintegration of the Soviet Union, Israel has obtained most of its oil from Russia and the Caspian countries: Kazakhstan, Turkmenistan, and Azerbaijan.[8] This implies higher oil costs and a considerable drain on Israeli balance of payments. After Saddam Hussein's fall, Israel wanted to revive the Mosul-Haifa pipeline to import oil from Iraq.

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7 For details on the Tipline, see Bialer (2007).

8 This author could not find detailed statistics on the geographical distribution of Israel's oil imports.

Infrastructure Minister Joseph Paritzky estimated that this could reduce Israel's oil bill by 25% (Petroleum Economist 2003: 37).[9]

Nowadays, up to 80% of Israel's oil comes from Russia, and the Tipline revival has a lot to do with guaranteeing Russian oil supply to its markets. But as previously explained for natural gas, excessive dependence on Russia is not welcomed in Israel. The controversial Baku-Tblisi-Ceyhan (BTC) pipeline supported by the US emerged as an alternative: it allows Israel to import Azerbaijan's oil with tankers from the Turkish port of Ceyhan.

Both the EU and Israel share the concerns over the Russian strategy of controlling the East-West energy corridor. The EU has included the Caucasus Republics in its Neighbourhood Policy and proposed the Nabucco gas pipeline. Israel lobbied in the US for the BTC and supports Georgia and Azerbaijan in many ways.[10] Russian increasing assertiveness in its 'near abroad' was clearly seen in the recent Georgia crisis. Russian troops were close to the BTC and the South Caucasus pipelines, widening the front of Eurasian energy geo-economics. Passing over Georgia for Armenia is not an option, because in spite of recent rapprochement gestures, relations between Turkey and Armenia remain difficult. Moreover, the Nagorno-Karabaj conflict precludes Armenia and Azerbaijan to agree on pipeline transit. So, the BTC and the Nabucco pipelines are in the interest of both Israel and the EU as an alternative East-West energy corridor. The same applies to the Persian Gulf-Eastern Mediterranean corridor, whose widening will be a fundamental issue in the coming years. In the final analysis, energy security in the Euro-Mediterranean region is a public good that calls for regional co-operation.

Energy security co-operation

Energy cooperation between Israel and the EU is quite limited, and energy security is almost absent from bilateral relations. The European Neighbourhood Policy (ENP) Israel Action Plan includes promoting energy cooperation among its priorities, "exploring gradual convergence towards the principles of the EU internal electricity and gas markets, development of energy networks and regional cooperation" (p. 3). Energy is considered as a privileged regional

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[9] However, the Petroleum Economist itself recognises that most observers agree that Iraq has no intentions to export oil through Israel.

[10] For a recent analysis of Israel-Azerbaijan energy relations see Murinson (2008).

cooperation tool (p. 8), and several actions for cooperation are listed in the energy section (see box below). Some of these actions are related to energy security, but the concept itself is not mentioned explicitly in the document.

Energy Cooperation in the ENP Israel Action Plan

Cooperation on energy policy

- Enhance the dialogue on energy policy in the context of the preparation of an Israeli Energy Master Plan
- Israel's participation in the Intelligent Energy-Europe programme

Further develop competitive markets through working towards the principles of the EU internal electricity and gas markets

- Explore the possibility of legal and regulatory convergence towards the principles of the EU internal electricity and gas markets
- Promote the exchange of experience in pursuit of electricity market reform in Israel
- Identify the scope for providing advice regarding the legal and regulatory framework in the electricity and gas sectors

Progress regarding energy networks

- Assess the scope for connecting Israel to the Trans-European/Mediterranean electricity, gas and oil networks, including Israel being part of inter-regional studies
- Develop gas transmission and distribution systems
- Exchange of know-how on security and safety of energy networks/infrastructure

Further progress on energy efficiency and the use of renewable energy

- Co-operate in sustaining current efforts to improve energy efficiency and to promote the use of renewable energy sources in pursuit of the target set by Israel, i.e. by 2007 at least 2% and by 2016 at least 5% of electricity to be produced from renewable energy sources
- Identify the scope for further legal harmonization, where appropriate, with EU energy efficiency legislation

(minimum efficiency standards; labeling appliances)

- Take steps towards participation in EU activities relating to Energy Efficiency and the use of Renewable Energy

Regional cooperation

- Develop regional cooperation on, inter alia, electricity and gas; energy and renewable energy sources and networks (including Euro-Mediterranean, and cooperation pursuant to relevant agreements, e.g. Israel-EU-P.A)

Bilateral actions related to cooperation in regulatory convergence, efficiency and renewable energy seem to be more workable in the short run than regional cooperation. The idea is that physical integration vectors, like energy networks and infrastructures, may be functional in generating spillovers in other domains. Some of the cases discussed in the previous sections show the limitations of such reasoning in the Middle East. Economically rational solutions have to pay the geopolitics toll, and the costs are distributed (unevenly) among all actors.

In the meantime, less sensitive actions may be taken. Regulatory convergence to the EU's energy *acquis* could be helpful in the setting of a more resilient Israeli energy sector. Blackouts are more often caused by insufficient capacity investment than by petro-politics. Energy sector reform proceeds slowly, especially in Israel's electricity sector (EIU 2007), and further liberalizing measures that are mostly in line with EU regulations are envisaged by the Israeli government.

Another cooperation domain is renewable energy. In addition to the classical research and development activities, where there seem to exist important complementarities, the Clean Development Mechanism (CDM) offers new cooperation opportunities. Non-Annex 1 ENP countries that have ratified Kyoto are eligible to host CDM projects, but credits from ENP countries, including Israel, are underrepresented.[11] Prospects for Israel, together with Morocco (its

[11] The Kyoto Protocol CDM arrangement allows industrial countries with greenhouse gas reduction commitments (Annex 1 countries) to invest in projects

main users among ENP countries), are good, but the EU is not profiting from the opportunities (Anderson et al. 2005). The Barcelona Process: Union for the Mediterranean initiative includes cooperation in renewable energy as an important novelty along the previous arguments.

From a geo-economic perspective, cooperation might be difficult to implement, but shared interest regarding access to the East-West energy corridor and the widening (for Europe) or opening (for Israel) of the Persian Gulf-Mediterranean corridor are noteworthy. The EU's preferences seem to point to the creation of a European energy geo-economic space (Mañé 2006); a European community of energy security (Van der Linde 2007) or, in the words of the Commission (2006c), a pan-European energy community. In the long run, a more open and multilateral energy system, including rejecting recourse to energy mercantilism as a political weapon, is in the interest of both Israel and the EU. But if in the meanwhile a regional approach is to be followed by the EU (perhaps as an intermediate objective), Israel could be interested in considering its inclusion in a potential PanEuroMediterranean energy region modelled after EU regulations and policies, where energy security is pursued as a regional good.

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that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries. Any approved CDM carbon project has to establish that the planned reductions would not have occurred without the additional incentive provided by emission reductions credits (additionality). For instance, the UK bought credits from Israel in the Hiriya Landfill Project.

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