

OECD REVIEWS OF REGULATORY REFORM

REGULATORY REFORM IN TURKEY

**REGULATORY REFORM IN ELECTRICITY, GAS AND
ROAD FREIGHT TRANSPORT**



ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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FOREWORD

Regulatory reform has emerged as an important policy area in OECD and non-OECD countries. For regulatory reforms to be beneficial, the regulatory regimes need to be transparent, coherent, and comprehensive, spanning from establishing the appropriate institutional framework to liberalising network industries, advocating and enforcing competition policy and law and opening external and internal markets to trade and investment.

This report on *Regulatory Reform in Electricity, Domestic Ferries and Trucking* analyses the institutional set-up and use of policy instruments in Turkey. It also includes the country-specific policy recommendations developed by the OECD during the review process.

The report was prepared for *The OECD Review of Regulatory Reform in Turkey* published in November 2002. The Review is one of a series of country reports carried out under the OECD's Regulatory Reform Programme, in response to the 1997 mandate by OECD Ministers.

Since then, the OECD has assessed regulatory policies in 16 member countries as part of its Regulatory Reform programme. The Programme aims at assisting governments to improve regulatory quality — that is, to reform regulations to foster competition, innovation, economic growth and important social objectives. It assesses country's progresses relative to the principles endorsed by member countries in the 1997 *OECD Report on Regulatory Reform*.

The country reviews follow a multi-disciplinary approach and focus on the government's capacity to manage regulatory reform, on competition policy and enforcement, on market openness, specific sectors such as electricity and telecommunications, and on the domestic macroeconomic context.

This report was principally prepared by David Parker of the OECD's Division for Competition Law and Policy. It benefited from extensive comments provided by colleagues throughout the OECD Secretariat, as well as close consultations with a wide range of government officials, parliamentarians, business and trade union representatives, consumer groups, and academic experts in Turkey. The report was peer-reviewed by the 30 member countries of the OECD. It is published under the authority of the OECD Secretary-General.

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Executive Summary

Background Report on Electricity, Gas and Road Freight Transport

Turkey is slowly emerging from a serious macroeconomic and financial crisis as described in Chapter 1. The causes of the crisis and the policy response were complex. As 2001 progressed, the Government put more policy emphasis on addressing problems in the “real sector” of the economy. This recognises that the tendency of the Turkish economy to a succession of crises has deep structural roots and that structural reforms can contribute to the objective of improving economic performance over time and making the economy more robust to shocks. The reforms addressed in this chapter – relating to elements of the energy and transport sectors – have the potential to contribute positively to the structural soundness of the economy. The crisis has been a significant influence on the shaping of these policies – especially in the case of the electricity sector – and the shift in emphasis to address “real sector” problems augurs well for successful delivery of the reforms.

Both the electricity and gas sectors in Turkey have been key elements in the “state led development” of the economy. For the time being both sectors remain dominated by state owned entities. Earlier reform efforts in the electricity sector sought to introduce private sector participation but, at the same time, entrenched the main state owned generation and transmission enterprise at the centre of the sector. In 2001 decisive steps were taken to change the policy course – competition among private agents in the market is to become a central mechanism to order both the gas and electricity sector and the state is to withdraw to a regulatory role (in the form of a new independent Energy Market Regulatory Authority) and a holder of key network infrastructure. Consequently, real privatisation is on the agenda for the first time after earlier efforts to introduce private participation in the electricity sector under BOT and TOOR arrangements resulted in insufficient outcomes. These reforms also parallel the longer term objectives of accession to the EU and consequent need to approximate laws to EU acquis, which requires progressive liberalisation of gas and electricity markets. Performance of these reforms has been underlined by the international financial institutions that have supported Turkey through the present crisis under a continuation of the 1999 Stand-by Arrangement and a new 2002 Stand-by Arrangement.

The starting point for electricity reform is best described as difficult. The current state enterprises in this sector are in an extremely weak financial condition and the present economic crisis has necessitated the winding back of direct budgetary support. Without reform, the sector is headed for financial collapse. There are several dimensions to this problem. At the distribution level of the sector a basic failure of the business model has resulted in widespread theft and non-payment for electricity. At the generation and transmission level, investment has been barely sufficient to meet strong demand growth and, to the extent that the private sector has participated in generation investment, it has generally resulted in expensive electricity being purchased by the state enterprises. Finally, and necessarily, fundamental reform has been launched – but the exit from the old system has been very difficult, with substantial preparatory private investments initiated under the previous legal regime lost. The difficulty here is that the supply-demand balance in Turkey until recently has been quite tight and the experience in other countries underlines the risks of electricity reform in tight markets. Breathing space of some 4-5 years has resulted from the downturn in demand due to the economic crisis and by commissioning of new power plants under construction, but substantial blocks of new generation capacity are likely to be needed beyond 2006 if Turkey returns to previous strong growth in the near future. This will be a challenge but, nevertheless, Turkey has no choice. This starting point heightens the need for a rapid and successful implementation of planned reforms which, in the end, offer the only prospect for moving the industry onto a financially sustainable basis. Turkey has made a good start in the reform – the framework in the new Electricity Market Law is sound, the new regulator has been established and work is proceeding to fill in the policy and legal detail necessary for a start of the new market in September 2002. For the emergence of a more competitive market, the policy authorities are looking at a transition period of perhaps five years to unwind all of the problems entrenched in the present system. That seems a reasonable estimate – it will be a challenge and the authorities have no time to lose in implementing the reform if the private sector is to take up its full role in the sector within this period.

Reform in the gas sector is less complicated and, in Turkey, less advanced than in the electricity sector. Nevertheless, Turkey has moved down the path of reform with the implementation of the new Gas Market Law. The Law envisages restructuring of the state enterprise into separate functional companies (transmission, distribution, trading and storage) along now familiar lines. Where Turkey proposes to go further than many other countries is in requiring the present dominant state enterprise to substantially divest itself of its gas supply contracts over the period to 2009. This is a relatively long transition period but it is a highly pro-competitive step compared with reform efforts in many other countries. The general approach to gas reform in many other countries has been to merely allow competition to emerge but not to positively foster it by deconstructing existing de-facto supply monopolies. Turkey is to be congratulated for taking this step, though there do remain formidable challenges to actually implementing it. Turkey also has the relative luxury of location which, in so far as gas is concerned, should allow it to access competitive sources of upstream gas supply – this has strongly positive implications for competition in the domestic sector.

The road freight sector in Turkey is more than usually important in the country because other freight modes, such as railways, are relatively undeveloped. This has some advantages given the poor performance of rail freight in almost all countries. On the other hand it does mean that road infrastructure is put under more pressure and congestion than otherwise and there are significant investment needs to augment the highway network – this is difficult in the present fiscal environment. To a substantial degree the road freight sector is unlike other network industries, in that its natural structure involves many competing firms. Turkey is no exception. What is different about the industry in Turkey is the fact that the prevailing conditions in the international segment of the market are very different from the domestic freight segment. The international segment is essentially already subject to EU consistent regulation, it has a modern fleet and is competitive in international transport. On the other hand the domestic freight segment has not had EU consistent regulation of access to market and social conditions applied to it. To meet EU requirements there would need to be essentially no difference in regulation of international and domestic freight. This is what the new Highway Transport Law is intended to achieve. This implies a very significant structural adjustment of the atomistic domestic sector. The government has in mind a structural reform that would allow small firms to change their operational status to fit within the new legal requirements. This appears a reasonable adjustment path, but care will need to be exercised to avoid entrenching competition problems through inappropriate government intervention. The international segment of the market faces significant barriers to access in international transport – this is a generic problem in international transport in Europe and near Asia, outside of the member countries of the EU. Ultimate access to the EU would solve the access problem of the Turkish industry. In the interim, it will be a matter for the Turkish authorities to continue with bilateral liberalisation efforts.

ELECTRICITY

1. Overview of reform

The electricity market in Turkey was the most rapidly growing market in the OECD over the last two decades, at least until the present economic crisis which began in late 2000. Growth averaged over 8% per annum in each of the last two decades. The forces underlying this growth include strong economic growth, rapid urbanisation, extension of electrification to the whole country and an initially low but rising per capita electricity consumption (presently around 1/3 of the level in the most developed countries). Meeting this demand growth has been a challenge, particularly as it becomes large in absolute terms. A supply shortfall became increasingly serious through 2000, and caused some supply restrictions and energy saving measures. Part of the supply shortfall was due to lack of precipitation and consequentially lower hydro generation. Other broader elements of the problem were deficiencies in the regulatory environment that complicated private investment, commercial problems within the state bodies that still dominate the sector and growing fiscal constraints on the state budget. The onset of the crisis has resulted in demand falling by 1% in 2001 and has alleviated the supply problem. Power plants under construction will add significant capacity from mid 2002 to meet resumed demand growth over the next several years.

The Ministry of Energy and Natural Resources (MENR) is the central policy body in this sector. Prior to recent reforms, the MENR encompassed policy and planning, regulation and governance of the dominant state enterprises in the sector. Unbundling of Turkish electricity sector began in 1993 when the vertically integrated Turkish Electricity Authority (TEK)¹ was restructured into two separate state-owned companies, namely Turkish Electricity Generation and Transmission Company (TEAS) and the Turkish Electricity Distribution Company (TEDAS). For some time the Government has had the objective of increasing private participation in the sector so as to reduce the fiscal load on the Government – indeed the first law setting up a framework for private participation came into effect in 1984. However, the Constitution was interpreted to require that the provision of electricity was an inherently state-based public service.² Consequently, private participation has been pursued through concession arrangements, called BOT and TOOR,³ which involved the state retaining or ultimately attaining ownership of the relevant physical assets. Also, the state entities were the sole purchaser of such privately generated electricity under long-term power purchase contracts with exclusivity clauses. As a result, the state remained central and dominant in this sector. Competition was limited to elements of “competition for the market”.

Policy “work-arounds” of this type often involve complexity and regulatory problems and Turkey’s experience was no exception. A core design deficiency in these arrangements is that while they shifted the up-front capital burden of new or improved generation or distribution investment to the private sector, they did not fundamentally shift risk away from the state. The state entities involved (TEAS and TEDAS) are financially weak, so risk was borne by the Budget, including under explicit Treasury guarantees for State liabilities under already-implemented long-term exclusive power purchase contracts that have a cost plus tariff structure. The fiscal crisis associated with the economic crisis brought to the fore that these risks could no longer be born by the budget and part of IMF and World Bank conditionality for financial support was the phasing out of these guarantees. In difficult circumstances, the government announced in October 2001, that previously decided transfer of operating rights of generation and distribution electricity infrastructure could only proceed without Treasury guarantees and with new

conditions in order to implement the new market model. Similarly a limited number of BOT generation projects were to benefit from Treasury guarantees of State liabilities under power purchase contracts only if the projects are commissioned by the end of 2002. However, the Constitutional Court in April 2002 annulled the provisional articles of the Electricity Market Law that set deadlines for the execution of the BOT and TOOR projects. Consequently, the Government is now seeking an appropriate solution for these projects and the final outcome remains to be settled.

Overlaying recent events is the prospect of more fundamental competition orientated reform. In line with the trend in many other OECD countries, Turkey embarked in 2001 upon the first stages of a comprehensive structural reform of the sector. A new Electricity Market Law was passed together with a policy intention for direct privatisation. When fully implemented this will finally see the private sector take up the major role in potentially competitive segments (generation and trading of electricity) while the state withdraws to a regulatory role (undertaken by an independent regulator). The state will retain an active role in the natural monopoly activity of transmission and system operation/balancing. This is in accord with the program to approximate Turkish law to the European *acquis* as part of the accession process, though considerable detail remains to be settled in secondary legislation. This policy framework has much better underlying prospect of success to achieve a substantively private electricity sector and supply security over the medium term, nevertheless some transitional problems from the old regime are a complicating factor in the present time.

Substantive operational elements of the prospective competitive electricity market are still undergoing development in the preparatory period before the market is scheduled to commence in September 2002. Achieving the market design, enacting secondary legislation, preparing and approving relevant network and system codes, establishing institutions and implementation is a daunting task within that timeframe. There are a several challenges to address, including dealing with stranded costs and setting a reform sequence that will promote competition from a starting point of financially weak but dominant government enterprises. Another challenge is the issue of supply security beyond the next several years.

All other countries have liberalised their electricity sectors in circumstances of excess supply. Electricity reform is inherently difficult but excess supply makes it easier. One element is political – excess supply leads to falling prices and political support for the reform. Another element is technical – excess supply allows time for markets to establish without the emergence of very high prices that can occur in electricity markets with short supply. Consequently, the present crisis and pause in demand growth does have a positive dimension for prospective electricity liberalisation – it gives Turkey some “breathing space” to implement the reform – but not much. If the reforms as designed are well implemented through secondary legislation and subsequent actions, over time price discovery will generate investment signals that stimulate new capacity and there will be financially strong actual or potential market participants that can or will respond to investment signals before the emergence of supply shortages.

It is difficult to predict the future course of demand in Turkey in present circumstances and there are some uncertainties relating to the capacity that will be put in place from projects launched under the previous regulatory regime. Notwithstanding the uncertainties, reasonable estimates foresee the need for additional new large-scale generation capacity to be in place in 4-5 years, in addition to that presently under construction. New generation takes time to build (1½ to 2 years construction for new CCGT plant) and time for new investment decisions to be taken and implemented. Consequently, new investment decisions will need to be made in around 2 to 3 years. This is around the time that the proposed new competitive market will be emerging as transitional arrangements unwind. The new market will have to operate successfully and establish credibility within a short time period. It will also be key that the distribution/retail sector quickly attains the financial strength necessary to be seen as reliable purchaser of electricity from new generators. This timeframe will be a challenge and, notwithstanding the breathing space for electricity reform provided by the present crisis, in reality Turkey does not have a moment to

lose. The new law provides a residual power for new generation investment to be undertaken by the state owned generation company, but it is a policy objective that the state withdraws from this sector through privatisation and it is obviously desirable, given the fiscal position, that new investment be undertaken by the private sector.

2. Structure of the sector

The electricity sector in Turkey was dominated by two state-owned companies – the Turkish Electricity Generation and Transmission Company (TEAS) and the Turkish Electricity Distribution Company (TEDAS). The creation of these companies in 1993 separated generation/transmission from distribution assets that were previously combined in a state enterprise – the Turkish Electricity Authority (TEK). Further structural separation of TEAS into three separate companies covering generation, trading and transmission activities was implemented on October 1, 2001 by a Decree, one of the early steps in the present liberalisation plan. The companies, Türkiye Elektrik İletim A.S. (TEİİAS – transmission), Elektrik Üretim A.S. (EÜİAS – generation) and Türkiye Elektrik Ticaret ve Taahhüt A.S. (TETİAS – trading) are now legally in operation.

Two companies (CEİAS and KEPEZ) operate concessions that involve generation and distribution in regional areas – these account for around 2% of installed capacity. Private participation in the sector has been relatively limited with a number of episodes of difficulty. Private generators, which either own plant or have operation rights of plant owned by TEİİAS, account for 7% of capacity and auto producers (industrial companies which self generate and sell surplus electricity) account for around 11% of capacity. TEİİAS and its affiliates had 80% of installed capacity and generated 76% of output in 2000. “Electrification” of Turkey is now effectively complete with 99.9% of the population with access to the grid/distribution system in 2000.

2.1. Generation

Installed capacity has grown quickly over the past two decades with trend growth of around 8% to reach 27.3 GW in 2000. This reflects ongoing economic growth and increases in electricity intensity, which still remains at a level substantially below the OECD average. Continuing this rate of growth has required substantial blocks of new capacity and there were concerns that limits on hydro capacity due to low rainfall and delayed new thermal investments would result in supply shortfall in 2001. In the event, the severe economic crisis from late 2000 led to a significant contraction in electricity demand and, if present investment expectations are realised, has delayed by several years the time at which supply shortfalls could be problematic.

Hydro power accounts for a large share of installed capacity in Turkey (41% in 2000), but a smaller share of output (24.7% in 2000).⁴ There were 128 plants in operation in 2000. Considerable hydro potential remains to be developed and long term planning foresees hydro capacity increasing by a factor of three in the next two decades. These plans are closely linked with regional development and irrigation aspirations of the government. The Southeast Anatolia Project (GAP) is a huge hydro and irrigation project under construction on the Tigris and Euphrates rivers – it will include 21 dams and 19 hydro power projects with 7.5 GW of generating capacity.⁵ Notwithstanding these developments the relative importance of hydro is expected to decline gradually over time, because demand is expected to grow even more rapidly than hydro output. There are a number of relatively small private hydro plants, but most plants and all large plants are designed and constructed by the Directorate-General of State Hydraulic Works (DSİ) before being transferred to TEİİAS for operation. TEİİAS operates 89% of hydro capacity (2000). Renewables capacity, other than hydro, is small. Drought has been a problem in Turkey over the last three years and

has limited hydro output. Rainfall in 1999, 2000 and the first half of 2001 was respectively 15, 7 and 17% below average. Generation from hydro in the first half of 2001 was down by 43% on a year earlier and thermal generation was correspondingly higher. The energy shortage had required conservation measures to reduce demand, such as changes to office hours of the public sector to reduce lighting and heating demands.

Fossil fuels account for most of the remainder of capacity (58% in 2000) and are used more intensively than hydro plants (thermal plants generated 75% of total output). As for many other countries, gas has played an increasing role and coal and oil have declined over time (gas 37%, coal 31% and oil 7.5% of output in 2000). Within the coal category, the relative importance of domestically sourced lignite (which has a low calorific value and high sulphur content) remains the major fuel source but has declined in favour of imported hard coal. Broadly, these trends in fuel mix are expected to continue: gas intensity and imported hard coal may increase and the share of hydro and lignite may fall and, as a result, import dependence may rise. However, with strong overall growth in demand, the total usage of lignite and hydro generation still increases significantly even though their shares may fall. Turkey has no nuclear capacity and, following the abandonment of earlier attempts, no current construction projects. TEAS and its affiliates operate 70% of thermal capacity (2000).

Private participation in the generation sector has been relatively limited with a number of episodes of difficulty (as explained below). Private generators, which either own their own plant or have operation rights of plant legally owned by TEAS, account for 11% of capacity, and auto-producers (industrial companies which self generate and sell surplus electricity) account for 11% of capacity. (2000)

Demand forecasts prepared by the Ministry of Energy and Natural Resources (MENR), prepared prior to the present economic crisis, project a need for around 60GW of capacity by 2010 and 105GW by 2020. This represents compound growth of 8% per annum for the first decade and 7% per annum for the second, which would essentially continue the growth rates seen over the last two decades. After the crisis, it is reasonable to expect strong electricity demand growth on the back of resumed economic growth and further increases in per capita electricity usage. However, there is a range of views about just how strong such growth is likely to be in future and consequential differences of view about the extent of infrastructure investment that is necessary. On this point, the IEA concluded that, “The experience of other countries offers reason to doubt whether the anticipated high growth rates would be sustained over such a long period” (see IEA, 2001). This view has been shared by other Turkish authorities that have had a role in planning and implementing Turkey’s electricity sector and consequently all of the MENR’s investment plans have not been realised – this is discussed in detail below.

The net result has been what might be called a “stop/go” microeconomic policy outcome in this sector. Whatever the respective merits of different demand projections, it is clear that Turkey will need substantial new investment in the sector over the medium term. On average, Turkey will need to build the equivalent of several new large thermal power plants each year involving investment of several billion USD per year.

2.2. *Transmission*

The transmission grid in Turkey was owned⁶ and operated by TEAS prior to the separation into the new transmission company (TEIAS). Load is concentrated with the major population centres in the west of the country while until recently generation capacity was relatively concentrated in the east, reflecting the emphasis on hydro generation that is concentrated in mountainous regions, particularly the south east. As a result there were some transmission constraints due to the large cross-country power flows, and transmission losses are slightly above international norms. New thermal generation in the west of the country and electricity imported from Bulgaria have shifted these constraints.

Turkey is a small net importer of electricity, mainly through an international connection to Bulgaria – this accounts for around 3% of domestic consumption. Interconnects and power purchase agreements also exist with Georgia (partly including transit of Russian electricity), Iran and Turkmenistan, but their capacity is limited due to technical factors. Total imports in 2000 were 3 791 GWh, with the potential for 6 600GWh under present agreements. Further large-scale interconnectors to Bulgaria, Greece and other neighbouring countries are under construction or are planned in accordance with longer term plans to run the Turkish transmission system synchronously with international grids, particularly UTCE, which would permit larger scale imports.

Irrespective of planned enhancements of interconnections there will be a need for major enhancement of the domestic transmission system in parallel with generation investment to accommodate increased demand over time. Transmission loss percentages have risen slightly in recent years, indicating that the system is already under some strain.

2.3. *Distribution/Retail*

TEDAS is the major distribution entity, with its operations split into 33 separate areas – this is too many to constitute financially viable distribution companies. Other smaller distribution companies operate concessions in the Kayseri region and the CEAS and KEPEZ companies, which have their roots in the pre-TEK era. A major problem in the distribution sector is losses of electricity. These cause significant financial weakness in TEDAS – it must pay for this electricity from TEAS but receives no corresponding payment from its customers. In turn, TEDAS's financial weakness and consequential late payments to TEAS contributed to weakness in TEAS – see discussion on sectoral performance. Total electricity losses (generation – final customer paid consumption) totalled 19.4% of generation in 2000 which is a substantial increase from system losses of around 15% in the mid-1990s. This is extraordinarily high by OECD norms – transmission and distribution systems dissipate some energy through electrical resistance and self-use and typically this averages around 10% in the OECD. There are several contributory causes to this problem:

- Street lighting is not paid for by municipalities – this accounts for around 4% of consumption. This is clearly a distortion, which could not continue in a liberalised market, at least not without specific government subsidies. The solution to this issue involving metering and charging for municipal street lighting is conceptually straightforward.

- Losses within the distribution system are the major part of the problem and at 16% on average are around double OECD norms – in some regions the problem is much worse than the average. Part of the problem is technical, requiring new investment to augment lines and transformer systems.⁷ By far the greater part is a business and metering problem with substantial theft of electricity amounting to around 10% of electricity generation. The government estimates that around USD 1 billion of investment is needed over the medium term to augment the distribution system.

It is vital that the financial performance of the distribution sector (as described below) be improved. The problems in this sector are a major contributor to the economic problems in the electricity and gas sectors as a whole. Reform, including consolidation to a smaller number of financially viable distribution companies and privatisation, is an essential part of the solution to this problem – it is not feasible to expect that deep seated management problems at the local level could be addressed without the strong influence a profit motive. Also relevant, is the fact that liberalisation will expose distribution activities to a further layer of complexity and risk in their operations – not only will they have to better manage their retail business but they will also have the challenge of having to contract and manage their source of electricity in a competitive wholesale market.

3. Private sector participation in generation and distribution

3.1. Generation

Prior to an amendment in 1999, the Turkish Constitution required that the electricity industry was essentially a public service and so private participation in the industry could not occur directly – in particular, outright privatisation of the state enterprises which dominate the sector, or their assets, was prevented. However, the fiscal realities meant that the government could not finance envisaged development on its own budget. Consequently, various mechanisms were designed to facilitate *indirect* private participation. In many cases these efforts have run into severe difficulty either because of problems in the legal framework or, more recently, due to fiscal constraints in the context to the 2000/01 economic crisis. Many proposed projects have not come to fruition and, in some cases, those that have been completed have incorporated high cost electricity purchase agreements that have exposed TEAS to significant losses and contingent liabilities. This story is detailed further below. It is to be strongly hoped that the recent constitutional amendment that provides for direct private ownership of electricity infrastructure and the new liberalised framework under the Electricity Market Law will make for an improved outcome. The “exit” from the old framework is itself not without difficulty, with prospective investors that have incurred substantial costs in virtually complete “privatisations”, the outcome of which still remains to be settled.

Private sector participation in the construction of infrastructure, including new power plants was first made possible through the Law 3096 in 1984 that allowed for the Build Operate Transfer (BOT) model for generation (where a private party would build and operate the plant for 15-20 years and then transfer it to state ownership at no cost to the state), and the Transfer of Operating Rights (TOOR) in respect of generation and distribution (where a private party operates plant formally owned by the state). By 1996 only six small plants (five hydro and 1 gas) had been constructed under this law. In 1994 a further law (3996) was intended to enhance the attractiveness of BOT projects by means of tax concessions and, following further amendment in 1999, this law now exclusively covers BOT investments in the electricity sector. Law 3996 also provided the possibility for a Treasury guarantee to be granted to underpin a power purchase contract between the private generator and TEAS/TEDAS.⁸ By the end of 2000, 18 BOT power projects (12 hydro, 4 gas and 2 wind plants) were commissioned with an installed capacity of 1.99GW.

The BOT process conceptually sets up a framework which allows competition *for* the market, with lowest cost BOTs being accepted.⁹ Similarly, such schemes reduce the investment cost for the public sector, but the cost of power purchased from BOTs has been rather high, especially in the early years of the projects where a large part of the capital cost of the investment is recouped.

Over this time period there were a substantial number of BOT projects or proposals that were not brought to fruition. As noted above, the root cause of many of the problems in this area was the constitutional position that was confirmed by the Constitutional Court in 1995. Notwithstanding Law 3996, which purported to make BOTs subject to the private law, the Court insisted upon the public character of electricity, and thus required that the public law would apply to any concession contracts for BOT. As a result the following spread of administrative responsibilities applied to BOT arrangements:

- Responsibility for initiating or responding to unsolicited private proposals for BOT projects rested with the MENR. For proposals initiated by the MENR a sealed bid tender process was used to determine the successful private company and results in a memorandum of understanding between the MENR and the BOT company. Concurrently, TEAS and TEDAS are the correspondents to any proposals, as the BOT laws required that private generators sell power only to TEAS/TEDAS under a power purchase agreement that specifies term, quantity and a price formula. These were “must-take”, exclusive contracts. At this initial stage, initiating or accepting a private proposal was essentially an administrative process which took place in the context of longer term planning of the electricity sector and was thus assessed against demand projections formulated by MENR/TEAS.
- The State Planning Organisation (under the Prime Minister’s portfolio) has broader responsibility for approving overall infrastructure development and thus also had an approval role in BOTs. Over the past the SPO has viewed the total capacity of BOT proposals to MENR as being in excess of that necessary to meet demand, and has thus been reluctant to approve all BOT proposals coming up from MENR. SPO approval was necessary for the next stage.
- The Treasury Department is independently responsible for deciding whether or not to provide Treasury guarantees for payments by TEAS/TEDAS under power purchase agreements. Given the poor financial state of TEAS and TEDAS, and broader macroeconomic and exchange rate risk, foreign investors have been reluctant to commit to investments without such Treasury guarantees. Treasury has been reluctant to grant such guarantees as it also regarded the MENR demand projections as being too high and more recently the economic crisis brought to the fore the fiscal imperative of limiting the risk exposure of the budget to such guarantees. Phase out of such guarantees was part of IMF/World Bank conditionality for financial support in response to the crisis.
- The *public* character of these arrangements required that the legal framework for the agreements between MENR/TEAS/TEDAS and the private investor was the public administrative law. This limited the investors’ rights to international arbitration in the event of dispute and also required approval of the Danistay (Administrative High Court). The court approval process was time consuming and the Court could and did reject or revise contracts negotiated between the parties.¹⁰

The Turkish constitution was amended in 1999 legislation to provide for private law to apply to infrastructure development in the electricity sector, to allow international arbitration of investment disputes and to limit the role of the Danistay to a review and advice role within a limited 2 month period. Consequently, a new law was enacted (Law 4501) to provide for the application of private law and national or international arbitration. This application of private law can also apply retrospectively for public law contracts if the relevant BOT companies sought conversion of their contracts to a private law basis. Corresponding to these changes the role of the Danistay has been reduced or is required to accelerate approval of BOT (and also BOO and TOOR projects – see below) and resolution of disputes.¹¹ These changes help significantly to clarify the legal arrangements applying to BOT projects and were intended to speed up the process and aid access to international capital markets. Nevertheless, notwithstanding the clarification of the legal position, the complicating factor in so far as existing projects are concerned was constraints on the ability and willingness of the Treasury to grant a guarantee.

A large number of BOT projects have proceeded to different degrees through the various stages of approval. However, the over-riding fiscal imperative due to the crisis has made Treasury guarantees problematic. In addition, there were some questions concerning the underlying desirability of moving forward with some projects. And, with the crisis demand has fallen and pushed out the date at which new generation is needed to meet supply needs. For these reasons, the attractiveness to the government of the remaining relatively high-cost non-finalised BOT contracts has fallen – equally, not all of the BOT projects in prospect could be regarded as least cost options. It was decided following SPO approval in May 2000 that 29 of these projects would be allowed to proceed further toward finalisation and be submitted for possible Treasury guarantees but no further projects would be approved. This involved a decision not to finalise 112 BOT projects.¹² The remaining 29 projects have a relatively small total capacity of 1.4GW and include 4 gas fired plants, with the others being 7 small hydro, 17 wind and 1 geo-thermal plant.

It was a requirement under the Electricity Market Law that to benefit from a Treasury guarantee, these projects would have to be commissioned prior to the end of 2002. The final outcome for non-finalised BOT projects remains to be settled, following the decision of the Constitutional Court and its reasoning in April 2002, which annulled the provisional articles of the Electricity Market Law that set deadlines for the execution of the BOT and TOOR projects.

The law relating to Build-Own-Operate (BOO) projects was initiated by Decree 96/8269 that came into effect in 1996 and was subsequently clarified by 1997 Law 4823. This requires the MENR (subsequently TEAS under the 1997 law) to publish a notice in the Official Gazette inviting applications for pre-qualification for a BOO project setting out the specification of required facilities. Private companies may also directly apply to TEAS for BOO approval, which are subject to publication and collection of bids in the normal way. Power from BOO projects must be sold to TEAS, up to a maximum period of 20 years from the date of approval – the term of each contract is determined separately depending on supply-demand expectations and the macro policy of the state. The Treasury can guarantee such power purchase contracts entered into by TEAS for the purchase of electricity. The Law provides for settlement in Turkish courts, international courts or international arbitration committees recognised by Turkey. BOO applies only to thermal plants. As at the end of 2000 5 BOO agreements (4 gas and 1 imported coal) were approved for 5.9GW of capacity, which will be commissioned from mid 2002 onwards – these projects were competitively bid.

The main difference from the BOT model is that the resulting plant under BOO remains in the ownership of the investor at the end of its contracted life. BOO has become the main mechanism for private participation, taking over from BOT. The relative success of the BOO process is itself indicative of some of the problems inherent in the BOT or TOOR models. Under BOT or TOOR models the fact that final ownership (or actual in the case of TOOR) resides in the state monopsonist, inherently exposes investors to a relatively high degree of regulatory or political risk as exit opportunities for investors are

inherently tied to government fiat. Under BOO, the investor owns the asset and can dispose of it as they wish. Relevant in this context is the fact that recent governments in Turkey have not been long lived by OECD comparisons. However, the success of the BOO arrangements should not be over emphasised – the BOO arrangements do not fundamentally alter the entrenched position of the state enterprises nor substantially shift commercial risk from them (or ultimately the budget). Moreover, the prices under the BOO electricity sales arrangements are front-loaded for early recoupment of the investors' capital¹³ at a time when the state institutions are financially weak.

Auto-production is also related to Law 3096 by the Decree 85/9799 which provides for the MENR to grant permission for industrial plants, residential complexes of more than 5000 dwellings, 5 star hotels, industrial zones, universities and municipal institutions to generate their own electricity and sell excess generation to TEAS and TEDAS¹⁴ – the price to TEAS and TEDAS is set under an energy sales agreement but is capped at 70% (later this ratio has raised to 85%) of the average sales price of TEAS to TEDAS, prior to the enactment of the Electricity Market Law. Excess generation may also be transmitted through the distribution/transmission system so long as the receiving entity is a subsidiary of the auto-producer. The charges for such transmission are based on a simple distance based formula.¹⁵ Many auto-producer plants have been commissioned with a combined capacity of 3GW at the end 2000. A further 300 MW of capacity is under construction. Assessing the system wide efficiency of widespread auto-production is not necessarily straight-forward. On the one hand, such auto-production can take advantage of locational efficiencies and avoid losses from long distance transmission and also exploit potential for technical efficiency from combined heat and power operation. On the other hand, small-scale auto-production will not exploit economies of scale in generation. Self-provision through auto-production also has insurance characteristics as it guards against the risk of unreliability or insufficiency in the grid based system. Perceptions that such risks are high will thus tend to promote auto-producer investment and it may be that this is part of the explanation for the relatively large scale of such generation in Turkey.

In addition to the construction of new power plants under BOT and BOO, a program was launched to indirectly privatise existing plants of TEAS through a so-called Transfer of Operating Rights (TOOR) to private sector investors under Law 3096. The investor bids for the transfer of rights and subsequently operates and sells generated electricity to TEAS. The objective is to increase the efficiency and rehabilitate the transferred plants without TEAS bearing the capital cost. Transfer of a 620MW thermal power station (Cayirhan) and 30.1 MW of hydro capacity (Hazar I & II) have been completed. A further 9 non-finalised contracts (6 signed, 3 initialled) exist for TOOR of TEAS power plants with a capacity of 4.9 GW. As for the BOT arrangements, the contracts involve long term exclusive “take-or-pay” obligations and the transfers have been complicated by the problems relating to Treasury guarantees.¹⁶ Following the decision of the Constitutional Court the final outcome of the non-finalised TOOR projects also remains to be settled.

Distribution

There are presently 33 distribution areas.¹⁷ In 1996 a tender was held for the transfer of the operating rights of the areas operated by TEDAS to the private sector – two of the regions, including the Anatolia side of Istanbul had already been privatised by concession. These arrangements would provide the transferee-company with the exclusive right to operate distribution and sale of electricity in the designated regions for 30 years. Restrictions were placed on the outcome of the tender process to ensure that ownership of the TOORs was not over-concentrated. The Competition Law potentially applies to TOORs and the approval of the Competition Authority was sought and given for TOORs relating to the distribution companies. Conditional approval was given, subject to changes requiring non-discrimination for customers, requiring Competition Authority approval for any subsequent transfer. Further conditions proposing to provide for some flexibility of tariffs and to over-ride exclusivity of supply could not be realised under the then existing legal framework for TOORs. The basis of the tender was for companies to

pay a fixed transfer fee to the state (USD 2.625 billion in total) and to bid a cost-based electricity distribution tariff (with the lowest bidder winning). Certain elements of the tariff were fixed or the same for all bidders such as the energy purchase price – but companies were free to vary their bids according to their estimated operating costs and desired profit. (One clear shortcoming of this non-finalised arrangement from a regulatory perspective is that it effectively locks in performance margins for 30 years – there would not appear to be a mechanism for any general efficiency gains of the company to be passed onto consumers as is the case under CPI-X regulation with periodic reviews.) Other important features of the arrangements are that companies would be required to reduce technical electricity losses to pre-committed level which is comparable to international norms over time – companies would be fully exposed to the costs (or benefits) of any under (or over) performance compared with these commitment levels.

The outcome of this tender occurred in several stages. For five areas no adequate proposal was made and the Ministry cancelled the process. For four regions the process was cancelled by the Danistay. Of the remaining 22 regions, 11 regions were allocated to winning tenderers in January 1998 and resulting concession agreements were entered into by January 1999. Negotiations of the details of the transfer agreements and energy supply then took place through 1999. Feasibility and assessment processes continued for the remaining 11 regions, some of which had been allocated to winning tenders. Approval process by the Danistay were commenced but the process was further complicated when the law was changed to permit a private rather than public law foundations to the TOOR in January 2000. Some but not all companies opted to translate to a private law basis, while others remained on a public basis. However, the completion of these transactions became seriously complicated by the Turkish economic crisis and the consequential limitations on the Treasury granting further government guarantees in respect of certain contractual obligations of TEAS to the private companies. A number of Decrees by the Council of Ministers enabling the granting of guarantees were signed, but no guarantees have been granted and final implementation of the transfers was delayed. In fact no transfers were completed.

Planning for the TOOR process commenced prior to thinking about electricity market liberalisation and there is a clear contradiction between liberalisation under the new law and the exclusive distribution and consequentially retail right implicit in the TOOR. The new Electricity Market Law envisaged that this exclusivity would be amended from contracts but the precise basis for such amendment, especially in the case of private law contracts, was not fully settled. The new Electricity Market Law stated that existing contracts for the TOOR of generation and distribution facilities shall be ineffective if the transfer process is not completed by 31 October 2001 – this follows extensions from June 2001. However, the Constitutional Court abolished the relevant provisional articles of the Electricity Market Law addressing both TOOR generation and distribution projects, and the final outcome remains to be settled.

The general reaction by businesses involved in the TOOR program has been highly adverse. Participating in the TOOR program was costly for investors, with the bid winners making contracts with the government and expending substantial preparatory investments to the point where the businesses were “ready to go”, contingent on the formal transfer of operating rights. The value of these business plans is now uncertain pending the final outcome.

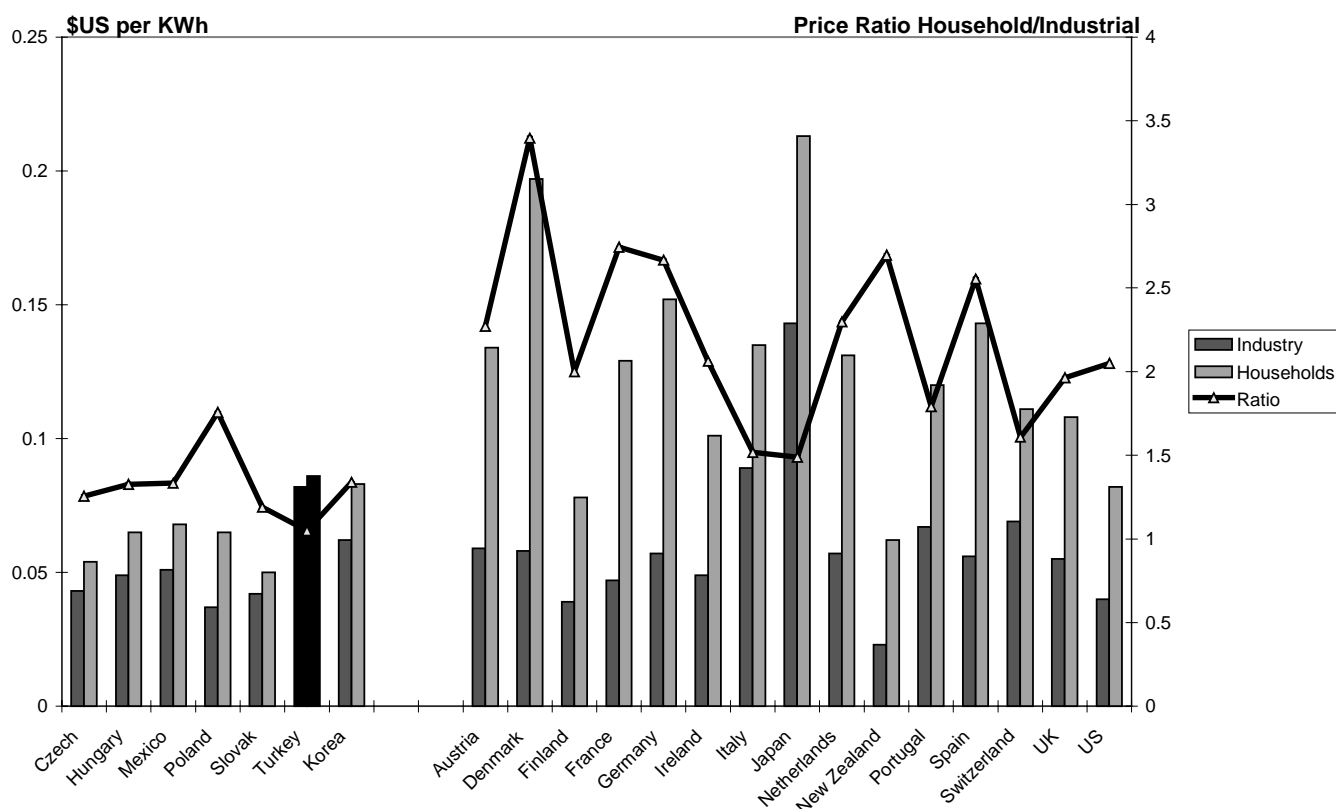
This very difficult transition from the old regime unfortunately may have an adverse effect on the willingness of new investors to commit to new investment under the reformed market. As a general observation, Turkey has not been well served by institutional instability in this sector, nor in other sectors, and this has real consequences for perceptions of risk and, ultimately, costs of economic activity. That said the episode needs to be assessed within the broader context of the economic crisis and the constraints this applied to the freedom of government action. Clearly, this underlines the need for the new reformed arrangements to be completed through secondary legislation and subsequent actions in order to achieve a state of regulatory certainty and predictability. On the positive side it can be said that with the legal blockages to direct privatisation now removed, it will be possible for the government to pursue a program

that is not bound by the same constraints and complexities inherent in the earlier policy “work arounds” used to achieve indirect private participation. Important in this context will be the ability for the government to make a “clean break” and desirably avoid the need to resort to Treasury guarantees to provide adequate certainty to the transactions in question.

4. Prices and performance

Prior to the implementation of the new Electricity market law, TEDAS proposed final distribution/retail tariffs and these were approved by the MENR. Tariffs were maintained at uniform levels throughout the country – apart from “official” east-west differences, which provided embedded preferences for developing areas. Prior to the new Electricity Market Law there was no formal policy on the extent of this east-west PSO nor its evolution over time. Under the new law it is proposed to shift this to an explicit cash subsidy under a mechanism that is under the control of the council of Ministers. TEDAS tariffs have approximately doubled over the course of 2001 in Turkish lira terms. This compares with inflation of 88.6% and thus represents a significant increase in real prices that is needed to restore financial balance to TEDAS operations. Non TEDAS distribution companies charge the same prices as TEDAS.

Figure 1. Electricity prices in Turkey and selected OECD countries



Source: IEA, Energy Prices and Taxes – Quarterly Statistics, third quarter 2001 – Part II Tables D19 and D20. Data is latest available annual figure.

Industrial prices in Turkey are comparable to household prices, unlike the position in more liberalised markets where industrial prices are often around half that for households. Lower industrial prices reflect the lower unit cost of delivery of large amounts of electricity to industrial customers. Consequently, the present tariff structure involves a significant cross subsidy from industry to the

household sector. Estimating the extent of this subsidy is complicated by the fact that the financial positions of TEDAS and TETAS are not stable, but it appears that the degree of cross subsidy is large compared with most other countries – see Figure 1. This degree of cross subsidy will not survive a more competitive environment – large eligible customers will face a large incentive to opt into the competitive market so as to avoid paying a cross subsidy to captive customers. The emergence of competition, tariff re-balancing and the mechanism used to unwind stranded (as discussed below) costs are all interrelated. Re-balancing of tariffs will be essential to avoid distortions in the competitive environment.

Table 1. **TEAS profit and loss position**

Year	Gross Profit/Loss (USD million)	Profit/Loss (cUS/kWh)
1994	-352.69	-0.54
1995	103.21	0.14
1996	103.16	0.13
1997	9.69	0.01
1998	-94.62	-0.10
1999	-146.82	-0.16
2000	-656.82	

Table 2. **TEAS net generation cost and sales price 2000**

Fuel Type	Cost (cUS per kWh)
Thermal	4.19
of which: Hard Coal	4.55
Lignite	3.46
Natural Gas	4.22
Hydro	0.20
Average	2.60
Customer Type	
High Voltage	6.55
Intermediate / Low Voltage	6.82
Non—TEDAS Distributors	3.52-4.09
TEDAS	3.79
Average	3.87
Note: TEDAS Selling Price (Average)	6.47

Source: TEAS Electricity Generation-Transmission Statistics of Turkey, 2000.

The financial position of the TEAS/TEDAS (and as a consequence to some degree BOTAS – see discussion of the gas sector) is poor. The accounts of TEAS reveal a deteriorating situation with losses reaching USD 656 million in 2000. In 2000 accounts, see Table 2, the overall costs of generation and sales price of TEAS to its main customer TEDAS were in broad balance. However, underlying these figures are two important points. Firstly, the average generation cost is held down by low cost hydro – the average cost of thermal generation is comparable to the sales price charged by TEAS to TEDAS. And, the average cost of electricity purchased by TEAS was calculated at 6.13 c/kWh in 2000.¹⁸ This amount does not solely represent BOT costs, but the total of BOTs, TEAS affiliates, imports etc. Part of the reason for the high cost of some of these contracts is that they were not subject initially to competitive selection. Another reason is that, over the lifetime of the contract, the prices must be sufficient to allow recovery of the initial capital investment and in these contracts the timing of the recovery of that investment is “front end loaded” compared with the rate of economic depreciation. Consequently, the prices are high initially but then decline to be less than would be the case if the price path factored in true economic depreciation. This sort of outcome is what might be expected in a situation of high regulatory risk – in effect the high initial prices can be regarded, in part, as an insurance premium paid to private investors.

The BOO/BOT/TOOR contracts have “must-take” characteristics and given power shortages are called under standard generator dispatch conditions. So, viewed alone, TEAS makes significant marginal losses on its BOT/BOO/TOOR positions since the price at which it on-sells this electricity is less than the cost to TEAS. TEAS (now TETAS) is squeezed between its increasing exposure to private sector participation in the sector (a “privatisation” which has not in fact shifted the commercial risk away from TEAS) and the various constraints on its charges to TEDAS and, in turn, TEDAS’s final tariffs. More generation capacity will be required in a number of years and given the fiscal position a substantial part of that will have to be private investment. The prospects are therefore, for the financial performance of TEAS to deteriorate further without significant change. One illustration of the potential size of the problem is the World Bank estimate in the County Economic Memorandum – without reform more guaranteed private generation capacity would be added to the system and losses from these contracts would rise from around USD 500 million to USD 1 500 million by 2010, with cumulative losses in excess of USD 8 000 million.

Secondly, while in 1999 TEDAS had a gross margin of over 3 US cents per kWh between its average electricity purchase and sales price, it has been able to pay TEAS for electricity only with significant delays. Part of the reason for the weakness of TEDAS is the non-payment due to theft or late payment by its own customers. As a consequence TEAS had a serious debt and cash flow problem with delayed payments to BOTAS for natural gas and to BOT/BOO contractors for generated electricity. This situation is part of the explanation of the reluctance of foreign investors to be involved in the sector without the benefit of Treasury guarantees. Ultimately, the losses of the system are substantially born by the budget – this contrasts with the desired situation where the very substantial capital invested in the sector should yield a reasonable return to the budget.

5. Selected regulatory issues

The regulatory framework for and the structure of the electricity sector are in the process of significant change, aimed at liberalisation and progressive withdrawal of the state from potentially competitive segments, specifically generation and distribution/retail. This vision broadly accords with trends in OECD countries and is intended to harmonise the Turkish framework with the EU Electricity and Gas Directives as part of the accession process

The success of this vision will depend upon two broad groups of factors. Firstly, the quality of the new regulatory regime and the competitive environment that emerges. Secondly, success at the start will be influenced by the success of the exit from the present system as previously discussed. Clearly there is a need for a “fresh start” for policy in this sector as opposed to incremental change and the prospective reforms are clearly directed to achieve that result.

Electricity prices for many consumers may have to rise in the medium term if the industry is to reach a stage of financial stability that can support the needed investment to ensure supply security. A range of factors will bear on the degree of necessary price changes including: the need to rebalance tariffs between industrial and domestic users; the size of and mechanisms used to recover stranded costs; the rate of resolution of excess losses in the distribution sector; the need to return the chain of activities from TEDAS to TETAS, TETAS to EÜAS and BOTs, and from EÜAS and BOTs to BOTAS to financial health; and the success of the reform program. A well-designed reform in the electricity sector improves economic performance for the benefit of industrial and commercial consumers and households. Over the longer-term, this means lower costs (through increased efficiency), lower prices to industrial and commercial consumers, lower taxes on households as unnecessary subsidies are phased-out, higher reliability, better service, more customer choice, and more innovation *than would exist absent the reforms*. If prices are unsustainably low under the pre-reform structure, prices will rise under liberalisation. But, the efficiency enhancing effects of liberalisation mean that the increase of prices in these circumstances will be less than that which would have been necessary to achieve sustainability under the pre-reform system.

Liberalising the electricity industry brings the full potential benefits of competition only if competition actually emerges in those sectors where it is possible. Fostering competition also requires close prior attention to the regulatory and institutional framework for the operation of specialised electricity markets, for the regulation of natural monopoly elements and the tools to limit the exercise of market power. In the case of Turkey the dominant role of existing government firms will initially continue while the market is liberalised and there will not be large amounts of excess capacity. Avoiding misuse of market power will be a central requirement to avoid substantial price increases – initially this will require significant regulation of the dominant firms, including where they are participating in liberalised sections of the markets, such as generation and trading. Also, a number of complex trade-offs need to be addressed where opting for less competitive arrangements might make for easier recovery of stranded costs or higher privatisation revenues for the government. The loss of the benefits of competition in these cases should not be accepted lightly.

Creating competitive electricity markets is difficult. The regulatory framework for such markets needs to be built – they do not evolve naturally. Decisions regarding a number of elements of reform – the structure of the sector, transmission pricing, market design, institutional design, addressing stranded costs and provision for universal service – must be made coherently because the design of each element affects the feasible and desirable designs of the others. The decisions should duly respect the existing physical structure of the electricity and related sectors, and the physical, legal and economic environment in which they are placed. Reforms elsewhere in the economy, such as the development of effective markets for fuels, should accompany reform in the electricity sector.

It is critical to decide early on the structural reforms and market design. Changing the structure of the industry once reforms have been implemented is difficult, since property rights—respect for which is a pre-condition for further private investment—become costly to transfer or alter. Many design decisions that seem to be “details” can have far-reaching consequences for the success of reform. Mistakes can be costly and enduring since they can affect decisions for investments that may have 40-year economic lifetimes.

Competition requires enhancement of physical infrastructure as well. Metering and payment are both essential for a liberalised market. Real time metering in the transmission (and distribution) sector for generators and wholesale customers is a precondition for system balancing when there is wholesale competition involving generators and eligible customers. And the absence of real time metering for large customers of the distribution companies is a technical matter that will have to be addressed before retail competition is physically possible. The efficiency gains from competition in a liberalised market and from improved economic regulation require that market participants be subject to adequate economic incentives. Non-payment or not metering dampens the economic consequences of behaviour. Absence of individual meters means that consumers cannot monitor their usage, receive no benefit from energy conservation, and are vulnerable to cut-off caused by non-payment by the entity that is responsible to the power company.

The new Electricity Market Law came into effect in March 2001, with the objective of developing a transparent and competitive electricity market, achieving stability of supply, and ensuring good quality, cheap and environmentally friendly electricity. Compared with the previous regime, the new arrangements carry over the objective of privatisation and introduction of private capital and improving efficiency of generation and distribution. It can be reasonably expected that the new regime will be more effective in these areas than the previous one. What is most important under the proposed arrangements is the central role of competition in ordering the market. The law provides for a framework for the establishment of institutions and address structural regulation issues as follows:

- a new independent Energy Market Regulatory Authority (EMRA) is established, governed by the Energy Market Regulatory Board,¹⁹ which takes over regulatory functions from the MENR.
- participants in defined market segments (generation, transmission, distribution, wholesale (trading) and retail) are required to be licenced. Specific rights and obligations of market participants will flow from licence conditions.
- requires bilateral contracting between market participants and thus implies a residual balancing mechanism to operate the transmission system – a compulsory pool type wholesale market is excluded.
- identifies eligible consumers as those directly connected to the transmission system or with annual consumption of more than 9GWh (~20% of the market in 1999) who will be free from March 2003 to select their own electricity supplier. The EMRA has a power to broaden the class of eligible consumers over time, with the apparent intention that eventually 100% of customers would be free. No timeframe is specified.
- envisages TEAS being separated in three different companies responsible for the functional components of generation, transmission and trading.
- provides for non-discriminatory regulated third party access to the transmission grid and distribution systems.
- provides for the preparation and approval of specific regulatory codes for transmission, distribution, retail and the short term balancing market.
- provides for eventual direct privatisation of the sector, with the exception of the transmission ownership and operation functions. The MENR will make proposals to the Privatisation Administration for the privatisation of generation and distribution assets according to Privatisation Law 4046. Foreign investors cannot take a controlling interest in generation, transmission and distribution sectors of the market.
- deals with some transition issues, including deadlines for completion of BOT and TOOR arrangements under the previous regulatory regime (as previously discussed these deadlines have subsequently been cancelled).

The Electricity Market Law can be described as framework legislation. The details of licensing procedures, market operation and rules, tariff mechanisms, vesting arrangements, privatisation plans and mechanisms to deal with stranded costs are left to subsequent secondary legislation or later decisions. The two-year (extended) preparatory period from March 2001 to 2003 is the timeframe over which these issues are to be addressed. Prior to the actual appointment of the EMRA in November 2001, the MENR was engaged in preparatory design work. The following points are explained in further detail.

5.1. The Energy Market Regulatory Authority and Board

The EMRA and its formal decision making body the Energy Market Regulatory Board are responsible for: issuing licences which set out the rights and obligations of industry participants; approving, amending and enforcing performance standards and the grid, distribution and customer service codes and the balancing and settlement code; settling disputes;²⁰ setting pricing principles and regulation for wholesale prices and transmission tariffs, distribution tariffs and retail tariffs; market monitoring; ensuring conformity of market behavior with the Law and licence conditions.

The new Energy Market Regulatory Authority was established in November with the appointment of seven board members by the Council of Ministers. Board members are required to have a university education in specified fields, at least 10 years experience in the public or private sectors and to have distinguished themselves in their professions. Board members have terms of six years and may be re-elected. In the case of the EMRA, Board appointees are not selected by a process where industry bodies or political bodies propose candidates. Four of the appointments, including the chair, were drawn from senior levels of the bureaucracy. In addition, there are two academics and the senior manager from a large state owned business enterprise.

There are quite significant governance restrictions on activities and interests of Board members. Members cannot hold any other post and, within two years after their appointment ceases, may not be employed by or hold shares in any entity engaged in the electricity or natural gas market, nor have any other direct or indirect relationship with such an entity that yields any income, nor trade in gas or electricity. Members must transfer any share interest in these entities to persons other than specified relatives. There are also limits on the relatives of Members being employed by entities engaged in the gas and electricity markets. Board members can only be removed by a decision of the Council of Ministers in specified instances of misbehavior or incapacity. The EMRA is accountable to the Ministry in the form of an annual report – it is not clear on the face of the law whether this annual report will be publicly available. Another annual report on the development of the market must be prepared by the EMRA and provided to the Ministry. There is no requirement on MENR to make this annual report publicly available, but the EMRA is willing to issue a report on its web site (excluding any confidential information).

The detailed requirements for the operation of the EMRA will be set out in secondary legislation, which is still to be issued but is expected to be available for public consultation by end-May 2002. The EMRA will have a lot to achieve at the initial stages of the establishment of the market. Foremost among these goals, and in addition to the simple fulfillment of its prescribed functions, is to establish its credibility as an effective regulatory institution. A very broad range of factors will bear on the credibility of the EMRA – it must not only fulfill its functions but be seen to do this in a clear, objective and unbiased, stable and predictable way according to the law. Important in this respect is the way the EMRA communicates with the market.

The EMRA is required to consult under the law the licensed entities operating in the market prior to issuing regulations. The law does not specify details of the manner of consultation, notice, length or outcome. Background report to Chapter 2 on government capacities for making quality regulation highlights a number of significant areas for improvement in government consultation processes. These views apply equally to the energy sector – as is evidenced by the fact that private sector consultation on the new Electricity Market Law prior to enactment was limited to 10 days. It is to be strongly welcomed that the new law requires the EMRA to consult and additional consultation is occurring in the present development market design and secondary legislation. The EMRA is preparing a “Market Implementation Manual”, which includes market design issues and identifies needed secondary regulation, in consultation with public organisations. This will be opened for discussion on the EMRA web site (www.emra.org.tr) and comments from any potential market participant will be considered in the finalisation of the Manual.

The EMRA is to be financed by licence fees, a surcharge in transmission tariffs and 25% of administrative fines for electricity licence breaches (which are capped at 10% of annual turnover of a licensee). The State can provide top up finance until the EMRA's revenues are sufficient to meet its expenses. The EMRA has the power to gather any information or document from industry participants it deems necessary to fulfil its functions. Lawsuits against decisions of the board, relating to fines and other regulatory decisions are appealable to the Danistay through either merits appeal or appeal on a question of law. Courts often are not well suited to regulate or to review regulatory decisions, because of the technical nature of the issues in contention and the need for speedy resolution of outstanding issues. In many countries, courts are too slow to be decision-makers in cases where, for example, delay in gaining transmission access can be fatal for a new generating company. Many countries establish a specialist regulatory appeal body that includes expertise in regulatory issues for this reason. The challenge in setting up such arrangements is to avoid shifting the standard point of decision making from the regulatory to the appeal body and to avoid the use of the appeal body in strategic games that can increase delay in final decisions.

Staff of the EMRA are civil servants, but are not subject to the same restrictions on salary. One relevant control is that the salary of the board members cannot be more than the rate for the highest level of civil servants of the highest rank. A salary flexibility mechanism is important for the EMRA. Regulation of electricity markets is a complex matter and regulators in OECD countries often struggle with the challenge of attracting and retaining adequately skilled staff. These skills are valued in the market, particularly within the regulated sector, and it is important for the quality of regulation of the sector and consequently economic performance that the regulator has adequate internal staff. This necessarily brings with it a departure from civil service selection and promotion methods and it is important for the ongoing credibility within government that the staff of the regulator are seen to be "worth" their pay – this requires strict merit selection and performance management of staff.

EMRA approval is required for transfers of more than 10% of the capital of a firm engaged in electricity (or gas storage) markets (5% in the case of a publicly traded firm), or a merger of such firms or any consolidation or change in the control status of such an entity. However, this does not mean that the EMRA will displace the authority of the Competition Board in authorising a merger falling under article 7 of the Law on Protection of Competition. The Competition Authority retains its functions of preventing abuse of market power and approving mergers and acquisitions in electricity and gas markets.

With the establishment of the EMRA, the role of the MENR will be focused on the establishment and enforcement of general energy policies, privatisation proposals, determining import and export policies and the promotion of supply security through any subsidies and incentives.

5.2. *Market and Network Codes – Regulatory Governance*

Rules for the standards, procedures and principles for the connection to and use of transmission and distribution networks and customer service rules are prepared respectively by TEIAS and TEDAS in consultation with parties connected to the respective transmission and distribution systems as specified in their licence conditions – such codes are then approved by EMRA. This is a standard arrangement. Similarly the Balancing and Settlement Regulation which establishes the detailed procedures and principles related to real time balancing and financial reconciliation of the system are to be made by TEIAS and approved by the EMRA. This could give rise to a problem where the EMRA can't initiate change – it can only approve change proposals coming up from industry. An example of this can be found in the UK where governance problems in the Pool market stalled proposed changes that were contrary to powerful entrenched interests and ultimately resulted in the need for complete reform of the market arrangements.

All electricity market reforms have experienced some problems and unanticipated consequences. It is essential that the reform program build in mechanisms to implement a transition to the liberalised market to address the emergence of problems in a timely manner, to make changes to market rules and codes and where necessary adopt mitigation measures to address market failures until underlying causes can be corrected. Electricity markets are volatile by nature – demand and supply are highly inelastic in the short term, electricity is not storable, and capacity is highly capital intensive and slow to adjust. Given these properties, regulatory failure resulting in excessively high and volatile prices can occur if reforms are partial, incomplete or internally inconsistent. Nevertheless, such regulatory failure can be in the interests of some industry participants and, if these participants are in a position to block change due to their position in the governance structures of the industry, problems can persist.

5.3. *Vertical and Horizontal Separation*

The electricity industry includes a combination of activities, some of which are natural monopolies (transmission and distribution within a defined area) and some which are at least potentially competitive (generation and final supply). Ownership linkages between these activities can distort competition in the potentially competitive activities. For example, the owner of a transmission system which also operates generation has an incentive to prevent other generators from attaining access to the transmission system as this may allow the transmission system operator to earn excess profits in its generation activity. Discrimination in access to transmission which may arise due to vertical integration with generation increases the total cost of the system, because the lowest-cost generation is not used and distortions to upstream or downstream competition may result. Such discrimination can arise from a number of different vertical relationships between sectors of the industry. One solution to this problem is “ownership separation” which requires separate ownership of the different industry sectors – this removes the incentive to discriminate. Other less robust solutions include some combination of regulation and less strict separation (from accounting to corporate) – this leaves the incentive to discriminate intact but reduces the ability to discriminate.

Separate licences are required for generation, transmission, distribution and wholesale and retail activities and separate accounts must be maintained for each licensed activity and location. Licences must be applied for at the end of the preparatory period. In addition to these requirements, a number of structural requirements in the Law mandate stricter separation. For example, a generator may not be involved in other activities – this apparently mandates corporate separation. A transmission company may not engage in any other market activity. TEAS is split into a separate transmission, trading and generation companies. Furthermore, the generation and distribution assets will be privatized through the Privatisation Law, as envisaged by the Electricity Market Law. There are several requirements which underpin this separation and prevent concentration of the market. For example, a *private* generation company is limited to a maximum of 20% of total installed capacity in the previous year. Auto-producers cannot ordinarily sell more than 20% of their output, or 30% with EMRA permission – above that level of sales auto-producers will have to assume the responsibilities of being a licensed generator. Distribution companies can self generate a maximum of 20% of consumption in their region as measured in the previous year. Consequently, Turkey has opted for a significant degree of vertical separation between the different segments of this industry and this will reduce the regulatory load compared with what might have occurred under continued vertical integration. Nevertheless, there are two caveats to that assessment:

- Prior to the privatisation of the generation assets there will continue to be ownership integration at the state level with transmission. Moreover, the trading company will remain as the dominant player in the wholesale market for the time being (as explained below). Consequently, there is the possibility of an inadvertent conflict of interest at the state level against the interests of new entrants into the generation market who will be in competition with both the government generation and trading company with respect to the supply to eligible customers.
- There would be continued integration between distribution and retail activities of the distribution companies. New wholesale and retail entrants and out of area supply by distribution companies will be the channels by which competition will reach down to final eligible consumers. This will require access to distribution wires by the new entrants. In this respect Turkey is relying on accounting separation of the wires and retail businesses of distributors. This is a minimum requirement – further separation might be contemplated at a later point. The UK has recently adopted a requirement of corporate separation between customer services (retail) and infrastructure (distribution) and has found that some firms are specialising in one or other of these segments, *i.e.* beyond some point the industry may naturally tend to ownership separation.

Turkish Electricity Transmission Corp (Turkiye Elektrik Iletim – TEIAS) takes over the transmission assets (and associated debts) and runs the system in real time including load dispatch and real time balancing as System Operator. TEIAS will also be the Market Operator running the settlements system.²¹ TEIAS is also responsible for new investment in system under a planning framework that is built upon production capacity projections and demand projections of distribution companies that are to be approved by EMRA. Private transmission (bypass) through a direct line is possible, but would require standard connection agreement and transmission control agreement with TEIAS.

Under the new law, Electricity Generation Corp (EÜAS) takes over all of the generation capacity of TEAS (hydro and thermal) and DSI plants that are not transferred to the private sector under any completed TOORs (and associated debts). EÜAS can build new power stations in accordance with EMRA approved projections and taking into account private investments – this could operate as a fail safe mechanism to ensure supply security if the needed private investment fails to materialise for one reason or another. EÜAS will be the dominant generator until its constituent generation assets are privatised.

The new Turkish Electricity Trading and Contracting Corp (Turkiye Elektrik Ticaret ve Taahhut AS – TETAS) takes over all energy sale and purchase agreement of TEDAS and TEAS. This includes all energy purchase and sales agreements entered into under BOT, BOO and TOOR contracts and also export and import contracts. For a period of up to 5 years after the preparatory period (*i.e.* up to September 2007) as determined by EMRA, EÜAS shall sell all the electricity it has generated to TETAS. Consequently, TETAS will be the dominant wholesaler in the market. Private wholesalers are recognized but cannot hold market share of more than 10% of prior year consumption. The joint dominance and tying of EÜAS and TETAS is intended to allow the recovery of stranded costs from BOT, BOO and TOOR contracts – this important structural element of the reform program is discussed further below. The dominance of EÜAS and TETAS will require regulation of their conduct by the EMRA, including in the wholesale and balancing markets. The Competition Authority will also have to be closely attentive to prevent predatory conduct in the emerging competitive segments of the market that could forestall new entry by generators and traders. For example, because EÜAS/TETAS have control of substantially all hydro capacity they may be in a position to undercut new thermal entrants if price regulation were to set only maximum prices.

Distribution companies shall have zones designated in their licence, which include supplier of last resort obligations. Retail activity is a separately licensed activity including for distribution companies. Distribution company responsible for all connections within their zones and must not discriminate against customers utilizing another retailer. State owned distribution companies must have new investment approved by EMRA according to approved plans. (The law also provides an incentive for TOOR Distribution to opt into the new competitive environment by liberalizing their access to self generation rights. TOOR companies cannot self generate, unless they amend the TOOR contract to allow for free competition, and cannot enter into contracts with generation companies without an EMRA evaluation of their control status.) Retail licences are subject to the relevant distribution company's technical opinion, but retail licences are not limited by region. There are a range of technical issues that will need to be addressed in this sector, including the provision of real time metering for large eligible customer that opt for alternative suppliers.

Import/Export is possible by TETTAS, private wholesalers, retailers and distribution companies with retail licences with approval of EMRA, which will take account of a technical opinion from MENR.

5.4. *Structural Competition in Generation and Stranded Costs*

The prospects for competition in generation emerging under the above approach in the near future are slight. Specifically, there would be a single government generator and all major existing and planned private generators are currently under exclusive take or pay arrangements with TETAS. The only supply not committed to TETAS would come from additional imports, de novo private generation investment and auto-producers (which face limits to the proportion of their production they can sell without assuming all of the obligations of a generator). Competition would only emerge as generation assets are privatised and as the dominance of TETAS was eroded by new entry, among other possible options.

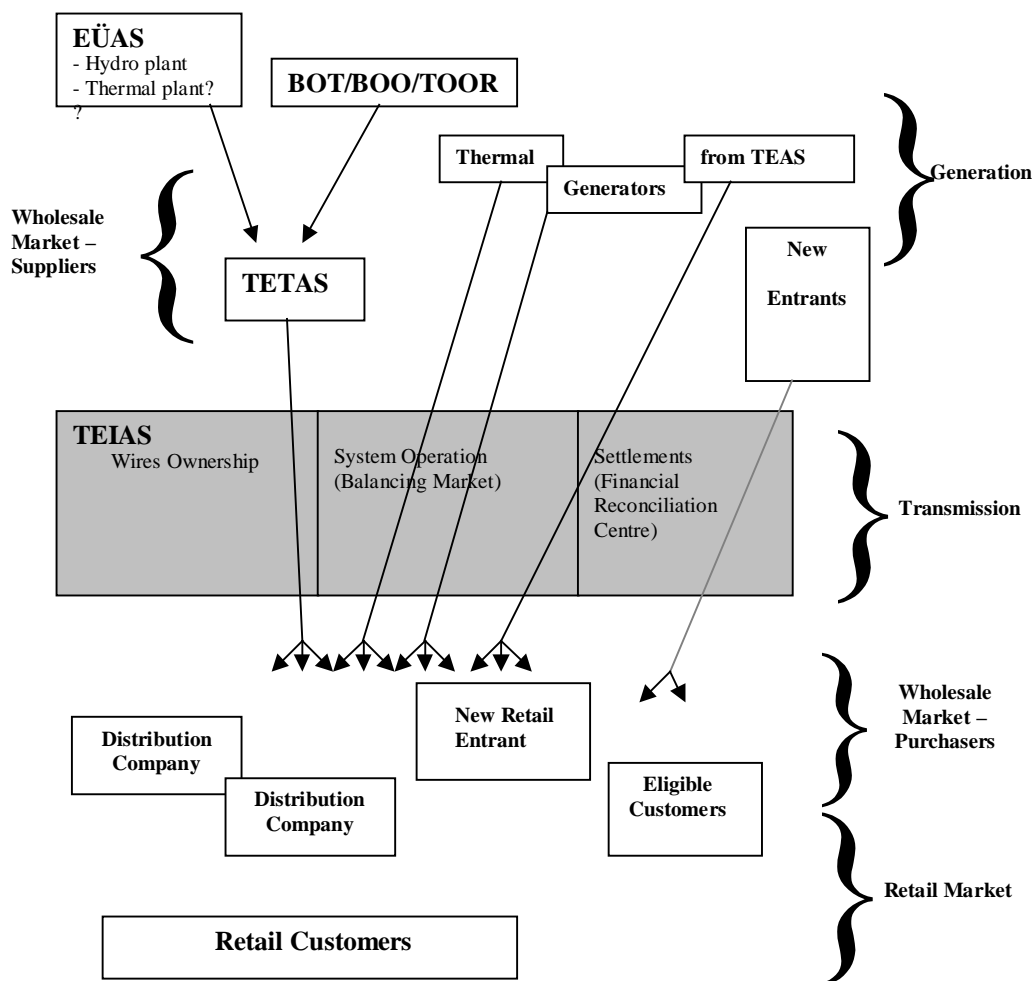
The structure envisaged in the new law has been designed to provide for the recovery of stranded costs through TETAS and this involves a number of complex trade-offs. Stranded costs arise from assets that were incurred or entered into validly under the previous regulatory regime that will not be recovered in a competitive environment. Such costs can arise under contracts that set prices that are inconsistent with competitively determined market prices. In the case of Turkey, stranded costs arise under the previous BOT, BOO and TOOR contracts. A key reform challenge is to mitigate and accurately measure stranded costs and to provide for their recovery in a way that is "fair" and does not impede efficient entry or the emergence of competition. It is important that such costs cannot be by-passed by some customers, otherwise the fairness of the distribution of such charges is reduced and entry signals can be distorted. Desirably the method of recovery should not distort economic dispatch of generation. Conceptually, stranded costs can be dealt with in a variety of ways: a government subsidy; a charge on consumers or bundling with "stranded benefits". The latter approach is that adopted by Turkey – it has some advantages and also disadvantages.

- The burden of the stranded costs are borne by the government in forgoing market-based prices on its low cost hydro-generation capacity. A substantial part of the burden of these costs is presently born by the government as shareholder and guarantor for TEAS, so the proposed reform does not shift the burden to the final customer. Specifically, the proposed scheme has the effect of not increasing final prices to the extent that would be required if consumers were to bear the burden of these costs.

- The estimation of stranded costs is inherently difficult, often involving estimations of capital values that ultimately depend on future, and therefore unknown, market prices. The traditional method of recovering stranded costs is to nevertheless make some starting estimate and then to levy some transition charge on final consumers that varies (either in level or time) according to the out turn of market prices until the stranded cost is recovered. This is complex and it makes reform look like a cost to consumers who may not recognise that they are probably paying a lower total price than would otherwise eventually be the case. Under the proposed approach of bundling stranded benefits to offset the stranded costs, the need to carefully estimate the size of the stranded costs is reduced – *i.e.* the bundling can continue *until* the stranded costs that actually emerge are recovered.
- In Turkey prices may have to rise to restore the industry to financial health and especially if a supply shortfall emerges. This will reduce the size of the stranded cost relative to regulated prices. However, if there were an additional stranded costs charge in consumer bills it is likely to be perceived as having to “pay twice” for the reform. Consequently, the proposed bundling arrangement may make for increased political sustainability.
- The costs from BOT and BOO contracts are apparently heavily biased into the coming five year period as a result of the effective bring-forward of capital recovery under the contracts compared with true economic depreciation of the generation plant. Consequently, annual stranded costs decline over time and there is a possibility of hydro capacity being progressively released to privatisation and thus participation in the competitive market. The time profile of the stranded costs means that the policy challenge is somewhat different than that in other countries that have liberalised. In Turkey it is not simply a matter of recovering the stranded costs and then allowing the BOO/BOT/TOOR generation to be competitively bid into the market. To the contrary, these already-implemented contracts have to be enforced to the end including through the period after five years from now when prices will be less than a price which recover economic depreciation – otherwise there would be an arbitrary transfer of wealth to the private generators. Or voluntarily renegotiated to make the price time profile reflect economic depreciation and then allow them to be competitively bid into the new liberalised market.
- The disadvantage of the proposed scheme is that it locks existing generation capacity into the continuing government enterprises, *i.e.* there will be free eligible consumers but no free suppliers. Competition is forestalled until recovery of stranded costs or through entry of new generation or through the limited capacity for additional imports by wholesale traders. There are other possible cost recovery schemes – such as a non-bypassable transmission surcharge – that could allow earlier development of competition, but this would then take over the disadvantages noted above.

Following further policy development the Turkish government is now contemplating a less restrictive structural approach which has the potential to foster the emergence of competition within a five year timeframe. This would involve transferring to EÜAS only so much of the low cost hydro capacity as would be necessary when electricity is on-sold to TETAS to offset the stranded costs of the BOT, BOO and TOOR contracts. The remainder of the hydro generation (if any) and the thermal generation assets of EÜAS would be transferred to a number of separate generation companies which could be a source of earlier competition. This would permit generation competition from these companies on an earlier time scale as initial vesting contracts unwind.²² This new perspective is much to be preferred to that formally embodied in the law and could be considered a reasonable balance between the competing aims of recovering the stranded costs in a simple way and the desire to increase competition. It would result in a structure for the industry that is illustrated in Figure 2.

Figure 2. Contemplated market structure



The amount of low cost generation that needs to be bundled with the BOT, BOO and TOOR contracts to offset the stranded costs is affected by a range of factors. This includes the extent of TOORs for generation and distribution, the difference between the electricity cost under BOT, BOO and TOORs compared with the future market price. On the other hand, the value at which the hydro generation is taken onto the books of EÜAS and the associated debt will affect the price of hydro sales to TETAS. It is beyond the scope of this paper to assess these points in detail, nevertheless, the following points can be made:

- Because thermal generation is relatively high cost it would make little contribution to offsetting the stranded costs if it were to be bundled with the hydro generation. It would not be at all unprecedented for the government to establish a number of competing generation companies (this approach occurred in some Australian states in the liberalisation in that country). It is clear that there would remain some governance issues associated with having multiple government owned generation companies but this can be addressed simply by privatisation. There should be no barrier to privatisation with these assets not tied to the recovery of stranded costs.

- The non-completion of the TOORs for generation and distribution provide additional scope for competition in generation. With fewer TOORs there will be fewer stranded costs and, in so far as the generation TOORs are concerned, it is these assets that can now form the basis of the competitive generation companies.
- It would be highly desirable if possible *not* to include all hydro assets within EÜAS if this is not necessary to offset the stranded costs in TETAS. Otherwise hydro capacity is likely to be locked up for a significant period and this will add to competition problems in the wholesale electricity market – as discussed below – and limit the ability of private generators to supply all segments of the market, especially peaking plant. Conceptually it would be possible to release extra hydro capacity by taking it onto the books of EÜAS at an artificially low value – thus reducing the price at which hydro electricity could be sold to TETAS. However, this would involve a loss to the budget and is clearly ruled out by the fiscal constraints due to the economic crisis.
- A delicate balancing act is required here. While early release of hydro capacity to the market will be pro-competitive, equally it could allow by-pass of the remaining stranded costs if the pricing of such hydro capacity which emerges from the privatisation process is “incorrect”. Careful attention will need to be given to this matter.
- If the degree of low cost generation that needs to be bound to fund the stranded costs is “high” such that it will limit the potential for competition to emerge in generation, then other less distorting means of funding the stranded costs should be explored. For example, if this limits the creation of a sufficient number of competing generators with generation at the margin over most demand conditions, competition could be damaged. Alternative means of funding the stranded costs would include the more traditional transmission surcharge mechanisms.

5.5. *Market power in electricity markets*

Electricity cannot be practically stored in large quantities and it is subject to a wide variety of supply and demand conditions. Therefore, supply must closely match demand at each point in time, *i.e.* each point in time represents a distinct product market. Each product market will have a distinct geographic market associated with it, which is determined (in large part) by transmission constraints and demand conditions in other areas. One lesson from recent experience of regulatory failures in some countries is that big problems can occur in just a short period in temporal electric power markets.

For each time period, only some generation sources will be at or near the margin, *i.e.*, generating power to meet residual or marginal demand. Generators who can exercise market power are those whose plant are needed to meet residual or marginal demand. Thus, one appropriate focus for assessing the ability to exercise market power is the number and concentration of supply sources at the margin, under varying demand and supply conditions.²³ However, the incentives to exercise market power – such as by strategic withdrawal of generation capacity – will depend largely on ownership of infra-marginal supply sources.²⁴

Market power problems are most likely to arise during peak demand periods. Transmission constraints are more likely to occur during these periods, and these constraints effectively reduce the number of suppliers and increase concentration among suppliers that can serve a given area. In addition, during these periods the cost of additional supply tends to increase rapidly, so withholding even a small amount of supply (one way to exercise market power) can create large price increases. Thus, more transmission capacity is needed in a liberalised market than in a regulated electricity sector.

Important determinants of effectiveness of competition in electricity markets include the structure of the sector, demand elasticity, transmission constraints, the rules for transmission access, the shape of the supply curve (in particular the adequacy of supply), market rules (*e.g.* dispatch protocols, bidding rules, arrangements for ancillary services) and entry conditions (for both new or expanded generation and transmission). Thus, restructuring cannot be isolated from other conditions affecting competition in electricity markets. The strong interactions imply that the number of generators sufficient for competition depends on these other characteristics of the market.

In Turkey the structure of the market will initially allow little competition in wholesale and the balancing market and these elements will need close oversight by the EMRA and the Competition Authority. Beyond this, and particularly as the reform proceeds and competition begins to emerge, using a full portfolio of market power remedies will be needed to address market power under the vast range and speed of change in market conditions. Using only one or a limited range of remedies risks failure during some sets of market conditions. Six key approaches to constraining market power are based on antitrust experience and economic theory:

- (1) increase the scope of the product market,
- (2) increase the scope of the geographic market,
- (3) increase the sensitivity of demand to price,
- (4) decrease concentration among existing suppliers within the relevant markets,
- (5) increase the size and sophistication of customers, and
- (6) reduce barriers to entry.

5.6. Privatisation

It is clear that the underlying design intent of the Turkish reform is pro-competitive, subject to the recovery of stranded costs. This design intent should be followed through as early as possible with privatisation decisions so that the structure of the industry is pro-competitive.²⁵ This includes horizontal separation of dominant government owned generation companies to create competing generation companies. Market power varies a great deal due to the time of day, season, relative fuel costs, precipitation, and generation or transmission outages. To be successful, restructuring must take into account the wide variety of supply and demand conditions that are likely to occur. It is not sufficient to look at the “general structure” of a market. Restructuring should take into account the location of generators. Distant generators may not be effective competitors to supply a load centre when transmission congestion arises. Distant generators also may face greater risk of transmission interruptions or significant line load losses that erode their competitive significance. Restructuring should aim to divide ownership such that, within each transmission-constrained area and for almost all demand conditions, there are at least five companies with generation that will be at the margin in most demand situations that will actively compete to set prices.

It is a bad reform mistake which is still made in some countries to privatise companies with market power to increase the privatisation proceeds. The increase in sale proceeds will represent a poor “deal” for the country:

- Market prices will be subsequently higher and the excess price over a competitive price and this rent will be capitalised into the privatisation proceeds, thus yielding an initially higher return to the government. However, the capitalised amount will be discounted at a private discount rate, which is likely to be greater than the social discount rate – so the private sector will pay less for the rent than it is worth to the government. The capitalised rent will also be discounted by a further factor that will reflect regulatory uncertainty.

- The higher electricity price is equivalent to a special tax on electricity and, a priori, is not likely to be efficient.
- The higher electricity price will reduce economic growth and dynamically reduce government general tax receipts.

Attention to issues of scale is also needed in privatisation decisions – there is no point in fragmenting an industry far beyond the degree of horizontal separation that is needed for the emergence of competition.

Privatisation of assets can be by 100% outright sale or sequenced sale, including with contracts that govern issues such as new investment and social performance as conditions for subsequently acquiring a majority stake. The choice between these models depends importantly on the specific country context. Where capital markets are undeveloped and regulatory frameworks are incomplete or new it may be best to adopt a sequenced sale approach. This can assist the government to achieve a higher sales price as it provides more scope for a well based assessment to be made of the potential efficiencies that can be achieved before the government disposes of its entire interest. Also sequenced sales carry an implicit regulatory commitment from the government to not damage the company by subsequent arbitrary regulatory decisions since the government maintains an interest it will not wish to damage. On the other hand, 100% sales may be called for to address fiscal needs. Also, 100% sales would be preferable if the political environment is such that on-going and distracting political influence would occur in partially government owned companies.

Golden shares may be useful if the regulatory environment is incomplete or not robust, but are generally regarded as undesirable since it increases regulatory risk. In any event, the scope of government action under a golden share should be clearly specified and limited – golden shares which permit arbitrary intervention in corporate governance will be counter productive. Vigilance by the Competition Authority should be sufficient to prevent re-aggregation of assets motivated by a desire to increase market power.

Where there is a supply shortfall the government faces a conflict of interest in privatisation decisions. Generators will attract a scarcity value, and this may ease a difficult fiscal position, yet the government also has an interest in adequate “green fields” investment reducing supply shortfalls. Particularly in Turkey, it is important that the government pre-commits to mechanisms which will ensure adequate new supply.

If possible, each generating plant should have a single owner.²⁶ If, for various reasons (such as existing and unresolvable ownership constraints), adequate geographic competition can only be assured through joint ownership of plants, this can be made to work, though the risk of collusion is greatly increased. Economies of scale at the plant level, for operating plants, and for owning plants can be different. Even if operation of generating plants is concentrated due to operating economies, ownership may be more dispersed without substantial inefficiency penalties.²⁷

When the generation companies (desirably five or more) are created out of EUAS each company should have a portfolio of generation that includes some plant that will be the marginal plant to supply each load packet. By ensuring multiple bids at the margin this will reduce the potential for market power in core markets to be used to manipulate bids and raise price.

Privatising distribution first – subject to the constraint of any distribution TOORs – is a sensible approach as it offers the opportunity to improve the financial soundness of this sector, including through consolidating the presently “too small” distribution areas run by TEDAS, which would then become the foundation for improved performance upstream. The creation of financially viable distribution/retail companies allows private generators to structure bankable projects without the need for a Government guarantee.

5.7. *Transmission ownership, system operation and the power markets*

Turkey has opted for a bilateral contracting model, which means that dispatch and wholesale market operation are not integrated into the same organisation – generators and wholesalers contract directly rather than through a centralised compulsory wholesale pool. Compulsory pool markets, which establish a single Pool marginal price, have advantages and disadvantages. The advantage is that market operation and system balancing require intensive co-ordination²⁸ and integrating these functions into a single entity has some advantages of simplicity. The disadvantage is that compulsory pools are likely to be more susceptible to anti-competitive strategic behaviour by generators. A classic strategy in such markets is to withhold marginal generation capacity or otherwise manipulate market rules and raise the Pool price. In Turkey, market power in wholesale electricity markets could be a problem if a tight supply situation were to re-emerge, so it is sensible to adopt a structural approach to market institutions that is less susceptible to market power. This is exactly the advantage that bilateral contracting models have over compulsory pools, even though bilateral contracting arrangements require additional co-ordination to ensure the energy balance of the transmission system in real time. Bilateral voluntary markets are probably less susceptible to manipulation and temporal market power of generators. There is a trend away from compulsory Pool models for this reason. That said, it will be important that Turkey gives adequate attention to what might be called the “surrounding legal and technical infrastructure” to ensure that the enforcement of contracts and the operation of settlement systems or court arbitration of contract disputes is robust enough to make multiple markets feasible.

Under the bilateral model, the system operator must manage balancing of the transmission system while accounting for the bilateral decisions of generators and their customers. This is done through a balancing market where the system operator buys and sells electricity (dispatches or stands down generation at the margin) to ensure that net generation matches actual demand at each point in time. The design rules of this core market are critical for the emergence of wholesale competition. Even if the core market is small (say 5% of demand), arbitrage to the general market can be adverse if the core market is “corrupted”. There are several important dimensions to these rules:

- Markets which allow demand side participation – *i.e.* where electricity users bid into the market to take more electricity from the system or not take previously contracted electricity – are generally less susceptible to generator market power than markets in which only generators can bid on the supply side. It is understood that Turkey is likely to start its balancing market without demand side participation. This is a reasonable starting point since demand side participation involves an extra degree of complexity but the authorities should consider allowing demand side participation at the earliest feasible opportunity given that generator market power is likely to be an issue.

- In any event, at the commencement of the balancing market, TETAS will be dominant in this market and its behaviour will need to be directly regulated – this would be preferable than relying only on the competition law. Such regulation would need to address the potential strategy of capacity withdrawal, designed to bid up prices. Moreover, the price at which TETAS/EUAS bid into the balancing market and the wholesale market will need to be regulated for so long as they remain jointly dominant.
- The balancing market will yield the prices at which generators and customers who are out of balance with their contracted position must settle with the system for the uncontracted electricity that generators have supplied to the system (say, due to a generator over run) or which customers have taken from the system (say, it was colder than expected and a retailer has under contracted compared with final actual demand).²⁹ The prices or costs associated with balancing action in the balancing market can be allocated to out of balance system participants in a several ways. For example, the NETA system in England and Wales charges market participants that are short a high price and gives those that are long a low price based on the actual purchases and sales prices of contracts entered into by the system operator to balance the system. This “two price” approach provides strong incentives for system participants to stay in balance in each trading period. It also provides a disincentive against system participants adopting a strategy of trying to offset imbalances in one period with an opposite imbalance in the next period³⁰ – such strategic behaviour can complicate system balancing by the system operator. It is likely that Turkey will initially adopt a single price system for settlement of imbalances that will use an average of prices from the purchases and sales contracts entered into by the system operator to balance the system – this is a reasonable policy choice at the outset as it avoids significant complexity. One possible half-way house between the simplicity of a single price system (which has poor self balancing incentives) and the complexity of a two price model (which has strong self balancing incentives) would be for settlement prices to include an ad hoc charge which increased the price paid to the system by those short and reduced the price received by those with excess electricity. The size of the charge, say 5%, is essentially arbitrary and would be a policy variable that could be set to determine the degree of incentive for self balancing that was desired. Such a charge would also mean that the settlements/system operator would accrue a stream of revenue that could be used to offset some general operation costs.
- The system and market operators should face incentive regulation to operate energy balancing and ancillary services functions in an efficient way. Direct pass through of such costs into transmission pricing is likely to yield poor performance and higher prices for consumers.
- The central market operator should include an effective market monitoring/surveillance function to detect misuse of market power and manipulative bidding strategies. The output of market monitoring should feed into early corrective policy decisions and mitigation strategies if necessary. This may involve further changes to market rules and, in the extreme, to bid or price control measures. Care must be exercised in any mitigation measures that these do not prevent the resolution of underlying problems or longer-term adjustment and functioning of the market.

Despite its small share in total cost, regulation of transmission is extremely important for an electricity market. There must be enforceable access rights to transmission at non-discriminatory, transparent and efficient terms. Such access rights are needed not only for competition among incumbents but also to induce new investment by incumbents and entrants. Turkey has essentially adopted this

approach in its new law. A number of policy choices remain to be made within the framework of the law that requires the EMRA to develop an approach to transmission pricing. Ideally, to induce efficient behaviour, transmission prices should have components that depend on short-run phenomena (“short-run transmission prices”) and components that depend on long-run phenomena (“long-run transmission prices”) and include congestion costs. *Short-run transmission pricing should induce optimal dispatch*, meaning that generators that are close to load centres should have a transmission cost advantage over those that are far away. Short-run pricing can depend on marginal losses (equal to *twice* average losses) and on constraints. Dealing appropriately with transmission losses is especially important in a large country such as Turkey.³¹ Losses can be attributed to generators or they can be borne by all users of the system. Attribution makes dispatch more efficient, and improves location decisions of new generators. Short-term pricing can take transmission constraints into account in three alternative ways: all generators receive the same price except for those whose output is varied to deal with constraints,³² electricity prices can be different in different “zones,” or electricity prices can be different at different “nodes.” Zones are usually defined so that their boundaries are at frequently congested points on the grid. Nodes are those points of the grid where generators or load are connected. Nodes are a finer division than zones.³³ Each of the three methods is used.³⁴ The choice among methods depends on the topology of the transmission grid and the location of generation and loads. The wrong solution can have financially catastrophic consequences. A solution that provides incentives to reduce transmission constraints can have important pro-consumer effects on the market price of electricity.³⁵ *Long-run transmission pricing should induce optimal location decisions and expansion of the transmission network*. The location of both new generation and of energy-intensive industry can be influenced. Connection charges and spatially differentiated short-run prices can increase the difference in profitability of building new generation in different locations.³⁶ Pricing according to the above short-run criteria may bring in only about one-quarter to one-third of the funds needed to cover total cost. For long-term sustainability, the revenue shortfall must be collected. The least-distorting way to collect the additional needed revenue is probably to make generators pay an annual capacity fee and transmission consumers pay according to their demand at the system peak. Multi-part tariffs that include both short run and long run criteria (in the form of use and capacity charges) are more efficient than single part tariffs in most circumstances.

- All of that said, spatial transmission pricing, whether short or long term, is one of the most complex areas in electricity economics and there not yet a solid theoretical consensus as to preferred approaches. Consequently, it would be reasonable for Turkey to adopt a highly simplified transmission-pricing scheme at the outset. Policy development in this area cannot be ignored however. This is because the capital value of generation assets is affected by the transmission pricing arrangements. Since generation is to be progressively privatised it would assist the privatisation process (and increase sales revenue to the extent that certainty was reduced) if additional information were available about prospective developments in transmission pricing arrangements. The annual regulatory plan recommended above for the EMRA would be a suitable means to communicate this information to the market.

6. Conclusions and recommendations

The enactment of the new Electricity Market Law and the establishment of the EMRA are significant steps forward in the reform of the electricity sector. The framework for competition established by the law and the structure and functions of the regulator accord with OECD good practice benchmarks. Importantly, after a transition period the structure of the sector has the potential to be inherently pro-competitive. A number of remaining policy choices will affect the actual emergence of competition during this transition period, including the recovery of stranded costs and privatisation methods. And, substantial preparatory work remains to be done prior to the commencement of the market, on the details of the market

operation and the various elements of secondary regulation and operational codes. Turkey has made a solid start in this reform – it needed to given multiple problems inherent in the pre-reform industry and the problems of exiting from the old arrangements for private sector participation. With careful implementation of the reform there are now good prospects for the industry to move on from what was an unsustainable position. Indeed, it is to be hoped that, in time, this reform will be seen as one element in a fundamental shift in the overall regulatory governance of Turkey that contributed positively to the structural robustness of the economy and helped Turkey to escape from the cycle of economic crises.

The following recommendations follow the flow of the discussion in the chapter.

6.1. Energy Market Regulatory Authority and Board

The new Energy Market Regulatory Authority has been established, but some critical features remain to be settled, including in secondary legislation. A number of issues were addressed in the discussion of the EMRA, including its governance and staffing, methods of communication and regulation making, its role in oversight of self regulatory functions of the major industry players, and its relations with other institutions. Specifically:

- The independence of regulators has two dimensions – independence from day to day political influence and independence from the commercial interests of the sector. Political independence is at the heart of the new Law. Turkey has opted for significant governance restrictions on activities and commercial interests of Board members that are strict by international standards, particularly in respect of the requirement for non-involvement in the industry for two years after ceasing appointment with the EMRA. This is, nevertheless, appropriate in Turkey where in the case of some other institutions there has sometimes been a blurring of commercial and policy interests. This requirement does mean that it will be difficult to get people from business who really know the industry appointed to the EMRA. In order to avoid problems that might arise from a lack of “connectedness” to the industry, **it would be desirable for the EMRA to establish as a matter of practice a strictly advisory private sector consultation committee composed of a balanced membership from the various industry bodies active in the sector.** This would have a strictly advisory role upon request from the EMRA Board and would strictly *not* supplant more general requirements to consult the private sector on regulatory requirements.
- The EMRA is accountable to the Ministry in the form of an annual report – it is not clear on the face of the law whether this annual report will be publicly available. Another annual report on the development of the market must be prepared by the EMRA and provided to the Ministry. **The absence of a requirement for publication of these reports should be rectified in secondary legislation.**
- The detailed requirements for the operation of the EMRA will be set out in secondary legislation, which is still to be issued. The EMRA will have a lot to achieve at the initial stages of the establishment of the market. Foremost among these goals, and in addition to the simple fulfillment of its prescribed functions, is to establish its credibility as an effective regulatory institution. A very broad range of factors will bear on the credibility of the EMRA – it must not only fulfill its functions but be seen to do this in a clear, objective and unbiased, stable and predictable way according to the law. Important in this respect is the way the EMRA communicates with the market. **It would be desirable if the EMRA was to prepare and publish a yearly regulatory plan in which it set out what**

issues it expected to address over the year ahead and when – this would include forthcoming tariffication decisions, assessments of the competitive state of the market, reviews of licence conditions, etc. A key here is to avoid regulatory surprises that could give the appearance of ad hoc decision making and raise perceptions of regulatory risk. **In parallel with the annual plan the EMRA should adopt a charter of regulatory practice that commits to operation on the basis of good practice in the fields of communication and consultation; consistency and predictability of decision making; internal effectiveness and efficiency; and accountability and overall transparency.** This charter should itself be consulted with the private sector before it is finalised as a basis for action by the EMRA.

- The EMRA is required to consult under the law the licensed entities operating in the market prior to preparing regulations. Background report to Chapter 2 on government capacities for making quality regulation highlights a number of significant areas for improvement in government consultation processes. These views apply equally to the energy sector. It would be desirable for EMRA to self adopt RIA like processes and determine a protocol for requirement for consultation on regulation making as discussed generally in background report to Chapter 2.
- The right of appeal against regulatory decisions is important to ensure that a regulator does its job properly. Under the Electricity Market Law, lawsuits against decisions of the Board, relating to fines and other regulatory decisions are appellable to the Danistay. Courts are often are not well suited to regulate or to review regulatory decisions, because of the technical nature of the issues in contention and the need for speedy resolution of outstanding issues. Many countries establish a specialist regulatory appeal body that includes expertise in regulatory issues for this reason. The challenge in setting up such arrangements is to avoid shifting the standard point of decision making from the regulatory to the appeal body and to avoid the use of the appeal body in strategic games that can increase delay in final decisions. The Danistay is unlikely to be well suited to the appellate role in this sector. **The appeal structure should be improved by the creation of a specialist appeal body with suitable expertise.**
- Staff of the EMRA are civil servants, but are not subject to the same restrictions on salary. Regulation of electricity markets is a complex matter and regulators in OECD countries often struggle with the challenge of attracting and retaining adequately skilled staff. These skills are valued in the market, particularly within the regulated sector, and it is important for the quality of regulation of the sector and consequently economic performance that the regulator has adequate internal staff. It is important for the ongoing credibility within government that the staff of the regulator are seen to be “worth” their pay – this requires strict merit selection and performance management of staff. **The EMRA should seek to recruit a high level of expertise, including internationally if necessary, and pay close attention to establish merit based personnel systems** to ensure that they are and are seen to be free of influences that have sapped the efficiency of some other parts of the government service.
- There is a requirement for co-operation between the EMRA and the Competition Authority as regulation and competition issues closely interact in this sector. For example, licence conditions in generator licences or the licence of TETAS will place constraints on the behaviour of licensees that could also be addressed by the generic constraints against monopolistic behaviour under the competition law. Consequently, **in particular cases an issue might arise that could be addressed by the EMRA as a contravention of a**

licence condition or by the Competition Authority as an abuse of market power. Interface issues of this type can be addressed in a protocol of co-operation between the two bodies. There is also a deeper interface issue relating to *questions of policy* as to whether it is preferable to deal with a matter by a regulatory instrument or through competition law. Questions of this type might arise in future when the issue of whether it is appropriate to remove tariff controls for some customers – this will depend essentially on whether the market is judged to be competitive enough to rely solely on competition law to prevent any market abuses. The Competition Authority has a role to play in informing such decisions. In some countries there is a legal requirement on regulators to consult the competition authority about policy decisions relating to the removal of or reapplication of tariffs. This is not the case under the new Electricity Market Law, so it is desirable that any protocol between the EMRA and the Competition Authority also address the Competition Authority's role in such decisions.

- The Electricity Market Law provides for an element of the regulatory governance of the sector to be performed by sectoral participants. Rules for the standards, procedures and principles for the connection to and use of transmission and distribution networks, customer service rules and for system balancing and settlement are prepared by major industry participants and approved by EMRA. This is a standard arrangement. All electricity market reforms have experienced some problems and unanticipated consequences. It is essential that the reform program build in mechanisms to implement a transition to the liberalised market to address the emergence of problems in a timely manner. Nevertheless such regulatory failure can be in the interests of some industry participants and if these participants are in a position to block change due to their position in the governance structures of the industry problems can persist. **Careful attention needs to be paid to this governance structure. If the EMRA has a power to approve but not initiate or over-ride rule changes where necessary in adverse circumstances, then reforms which are evidently desirable taking the interest of the market as a whole into account can be held hostage by the interests of market participants. Such an over-ride power is desirable and indeed necessary at the start of a marketisation process.**

6.2. *Market Structure, Competition, Stranded Costs and Privatisation*

Turkey has opted for a significant degree of vertical separation between the different segments of this industry. This is inherently pro-competitive and will reduce the regulatory load compared with what might have occurred under continued vertical integration. Nevertheless, actual competition will be restrained through a bundling of low cost hydro with high cost BOT, BOO and TOOR generation through a transition period to permit recovery of stranded costs – after recovery of these costs the state generation assets can be progressively privatised. The degree to which competition will be restrained in this way has not been finally settled and several issues of fine balance are involved. Consequently, significant regulatory issues and policy decisions remain:

- Prior to the privatisation of the generation assets there will continue to be ownership integration at the state level with transmission. Consequently, there is the possibility of an inadvertent conflict of interest at the state level against the interests of new entrants into the generation market who will be in competition with both the government generation and trading company with respect to the supply to eligible customers. **To avoid this potential conflict being seen as an actual conflict by new investors, the state will have**

to ensure that governance arrangements of the various institutions do not overlap and the EMRA will have to be punctilious in enforcing the non-discrimination requirement for access to the transmission system.

- The government trading company will remain as the dominant player in the wholesale market for the time being. Consequently, **the EMRA will have to strictly regulate the behaviour of the government trading company in the wholesale and balancing electricity market. The Competition Authority will also have to be closely attentive to prevent predatory conduct in the emerging competitive segments of the market that could deter new entry by generators and traders.**
- A key reform challenge is to mitigate and accurately measure stranded costs and to provide for their recovery in a way that is “fair” and does not impede efficient entry or the emergence of competition. The estimation of stranded costs is inherently difficult, often involving estimations of capital values that ultimately depend on future, and therefore unknown, market prices. Under the proposed approach of bundling stranded benefits to offset the stranded costs, the need to carefully estimate the size of the stranded costs is reduced, *i.e.* the **bundling** can continue *until* the stranded costs that actually emerge are recovered, but such bundling does act to forestall the emergence of competition. It is, therefore, to be strongly welcomed that the government is considering the minimum viable degree of bundling and the maximum possible degree of competition. **At a minimum thermal generation should be available to the competitive market. Beyond this, it would be highly desirable if possible *not* to include all hydro assets within EÜAS if this is not necessary to offset the stranded costs in TETAS. A delicate balancing act is required here. While early release of hydro capacity to the market will be pro-competitive, equally it could allow by-pass of the remaining stranded costs if the pricing of such hydro capacity which emerges from the privatisation process is “incorrect”. Careful attention will need to be given to this matter.**
- It is clear that the underlying design intent of the Turkish reform is pro-competitive, subject to the recovery of stranded costs. This design intent should be followed through as early as possible with privatisation decisions so that the structure of the industry is pro-competitive.³⁷ **Privatisation should aim to divide ownership such that, within each transmission-constrained area and for almost all demand conditions, there are at least five companies with generation that will be at the margin in most demand situations that will actively compete to set prices.** It is a bad reform mistake which is still made in some countries to privatise companies with market power to increase the privatisation proceeds. The increase in sale proceeds will represent a poor “deal” for the country:
- **Privatising distribution/retail first is a sensible approach** as it offers the opportunity to improve the financial soundness of this sector, which would then become the foundation for improved performance upstream. **Distribution companies should be consolidated to a more efficient scale.**
- **Tariff rebalancing is urgent** given that competition for eligible customers is scheduled from September 2002 and the present tariff structure, which implies cross subsidies from industrial to household customers, is not likely to be sustainable under competition. At the same time, it will be important to include limitations in tariff regulations to protect the interests of captive customers, so that licensees do not support eligible customers by cross subsidies from captive customers, for instance by preventing them allocating their higher-

priced power purchase contracts to captive customers. The tariffing arrangements would be considerably complicated if some distribution TOOR agreements are permitted to move forward with a cost-plus tariff guaranteed by the Treasury while remaining distribution companies operate with incentive-based tariff formulae.

6.3. *Transmission ownership, system operation and the power markets*

The bilateral contracting model adopted by Turkey is less susceptible to market power problems than the alternative of a compulsory wholesale pool. This is clearly desirable in Turkey's case because problems of market power will be significant, at least during the transition phase and the tight supply situation could have the effect of magnifying any market distortions. The need to regulate the behaviour of the government generating company and government trading company for this reason has already been noted. There are a number of additional issues relating to market design that will need to be settled prior to the commencement of the competitive market. These include:

- It will be important that Turkey gives adequate attention to what might be called the “surrounding legal and technical infrastructure” to ensure that the enforcement of contracts and the operation of settlement systems or court arbitration of contract disputes is robust enough to make multiple markets feasible.
- It is understood that Turkey is likely to start its balancing market without demand side participation. This is a reasonable starting point since demand side participation involves an extra degree of complexity, but the authorities should consider allowing demand side participation at the earliest feasible opportunity since it could help to reduce the market power of generators in the balancing market.
- The balancing market will yield the prices at which generators and customers who are out of balance with their contracted position must settle with the system. It is likely that Turkey will initially adopt a single price system for settlement of imbalances that will use an average of prices from the purchases and sales contracts entered into by the system operator to balance the system – this is a reasonable policy choice at the outset as it avoids significant complexity. At an early stage, the EMRA might consider improving the relatively poor self balancing incentives of such single price models. A possible approach is discussed in the chapter.
- The system and market operators should face incentive regulation to operate energy balancing and ancillary services functions in an efficient way. Direct pass through of such costs into transmission pricing is likely to yield poor performance and higher prices for consumers.
- The market operator should include an effective market monitoring/surveillance function to detect misuse of market power and manipulative bidding strategies. The output of market monitoring should feed into early corrective policy decisions and mitigation strategies if necessary. This may involve further changes to market rules and, in the extreme, to bid or price control measures. Care must be exercised in any mitigation measures that these do not prevent the resolution of underlying problems or longer-term adjustment and functioning of the market.

- The approach to transmission pricing also remains to be settled. Initially it is reasonable to adopt simple approaches. Policy development in this area cannot be ignored however. Improved transmission pricing can help to reduce transmission losses in the short and long term. Also, the capital value of generation assets is affected by the transmission pricing arrangements. Since generation is to be progressively privatised it would assist the privatisation process (and increase sales revenue to the extent that uncertainty was reduced) if something was known about prospective developments in transmission pricing arrangements. The annual regulatory plan recommended above for the EMRA would be a suitable means to communicate this information to the market.

GAS

7. OVERVIEW OF REFORM

Although the geographic location of Turkey places it in a “difficult” part of the world, one positive aspect is its close location to many actual or potential gas suppliers. Turkey is diversifying its sources of gas through the construction of new pipelines from Azerbaijan, Turkmenistan and Iran, and a new route from Russia (Blue Stream) and prospectively offers an alternative path for gas from the Middle East and Central–Asia into the major West European markets – a so called Eurasia Energy Corridor. The focus of this study is upon the domestic Turkish market and so does not address the related trans-continental and geopolitical aspects of pipeline development into and through Turkey and the surrounding countries. Nevertheless, it is important to note that, while development of these pipelines has not been without difficulty or controversy in some cases, the prospective supply diversity for Turkey is strongly positive for the potential emergence of a competitive domestic market should present policy which is aimed in this direction be taken to fruition over the coming ten year period.

The gas sector in Turkey is not as developed as the electricity sector but there are a number of common features. Chief among these is that the sector has been dominated by the government owned entities and that substantial reform is now in prospect that will liberalise and partially privatise the sector. The reform has some close parallels with that in electricity, including a common regulator and a new law that established bilateral trading as the fundamental market model. A key element of the reform is a requirement for a phased divestment of import contracts by the current monopoly importer, BOTAS. This is a highly pro-competitive step, which is designed to *promote* competition rather than simply *allow* it to emerge. This draws on the experience of some other countries which initially reformed to allow competition, but the degree and delay in the emergence of actual competition was disappointing. The question for the Turkish reform, which cannot be answered fully at this stage, is whether the required divestiture will prove to be feasible or commercially successful. If it is successful, the ultimate prospects for competition in the Turkish market under the reform proposals are quite good compared with some other countries. This is ultimately because the location and prospective pipeline development will mean that Turkey will have the relative luxury of potential competition in upstream supply of gas from producing countries.

8. DESCRIPTION OF THE SECTOR

The government owned Turkish Pipeline Corporation (BOTAS) owns pipeline infrastructure for oil and gas transmission, LNG terminals, and gas distribution. (This chapter does not address oil matters.) BOTAS has monopoly rights for gas import/export and wholesale trading. BOTAS was founded in 1974 and initially focussed on the transport of Iraqi crude oil, diversifying into the gas sector after 1987. It was transformed into a state economic enterprise in 1995. Gas import sources are Russia, Algeria (LNG), Nigeria (LNG), and, from late 2001, Iran. Before the Iranian connection, the only pipeline import route was for Russian gas through Bulgaria. This pipeline has operated since 1987 and supplies the major western Anatolia population centres. Some part of the supply to Turkey is LNG with an import/regasification facility in the northwest of the country taking gas from Nigeria and Algeria. New pipeline connections from Russia through the Black Sea (the so-called “Bluestream” project) and eastwards from the Caspian region are at various stages of construction and planning. This includes pipelines from Turkmenistan³⁸ and Azerbaijan (both through Georgia) and a feasibility assessment of a connection to Greece, which with further connections into Europe (the South European Gas Ring) could ultimately make Turkey a major transit country for Caspian and Middle East gas into European markets. The domestic gas sector infrastructure is less well developed than the electricity sector, with distribution infrastructure undergoing rapid development in many areas and new transmission infrastructure being developed to add capacity and diversify supply sources. A country-wide network for domestic transmission is expected to become operational in 2003/4. The present investment plans, which are directed by BOTAS and tendered for private sector construction will mark a significant step in the development of Turkey’s gas infrastructure. The cost of the internal transmission and distribution system infrastructure that has been tendered is around USD 380 million.

Table 3. Existing BOTAS gas import contracts

Source	Start Date	Peak Volume (billion m ³)	Duration (years)
Russia – Bati (West)	Effective – 1987	6	25
Algeria (LNG)	Effective – 1988	4	20
Nigeria (LNG)	Effective – 1999	1.2	22
Iran	2001	10	25
Russia – Black Sea	2002 (potential)	16	25
Russia	Effective-1998	8	23
Turkmenistan	2005	16*	30
Azerbaijan	2005	6.6	15

* An additional 14bcm is contracted for transit shipment to Europe under the Turkmenistan agreement.

In 2000, domestic consumption was 14.6 billion m³, around 16% of Total Primary Energy Supply, with imports accounting for 96% of consumption. The sectoral breakdown of demand in 2000 is: power generation 67%, industry 13% and residential 19%. Demand growth has been rapid, at around 17% per annum between 1990 and 1999. BOTAS projects demand to rise to 58bcm in 2010 and 88bcm by 2020. This represents an average growth rate of more than 15% per annum for the first decade (reflecting the take up of gas from extension of the gas network in the first half of the decade) and around 4.2% per annum in the second decade. In parallel with infrastructure plans BOTAS has pursued a strategy of diversifying its contracted import sources away from reliance on Russian gas – in 2000 Russia supplied around 2/3 of Turkey’s gas requirements. BOTAS expects that existing import contracts will be sufficient to meet demand growth until 2010, after which new sources will be required. Some commentators suggest that there will be a significant surplus of gas in the second half of the coming decade. The extent of any surplus will depend importantly on the degree of new build in the thermal electricity sector, and also on the take up of gas from the new domestic transmission and distribution systems.

Turkey presently has no major domestic gas storage facilities. This complicates the management of the gas system, particularly given the take-or-pay obligations of BOTAS, as it means that the system has little storage flexibility other than through variations in system pressure (called linepack) to take gas in volumes significantly different from actual usage. Storage capacity also assists security of supply and helps to meet seasonal demand fluctuations. Several underground storage facilities are being developed in salt caverns and in exhausted natural gas fields (the North Marmara and Degirmenkoy fields are expected to provide 1.6 billion m³ of storage after depletion in 2005). Access to storage facilities is also critical for the emergence of competition in wholesale supply where the pipeline operator is moving gas that it does not own – wholesalers must have some means of meeting short differences between their own gas purchases and sales, otherwise competition will be substantially foreclosed. This issue is returned to below in the context of the discussion of Turkey's present reform plans.

Distribution of natural gas is carried out by local distribution companies in Ankara (since 1988), Istanbul (since 1992), and Izmit (since 1996). The local distributors are owned or co-owned by the municipalities they serve. BOTAS operates distribution in Bursa (since 1992) and Eskisehir (since 1996). The two gas distribution companies of BOTAS will be transferred to the Privatisation Administration for direct privatisation. It is foreseen that these companies will be privatised within two years after the enactment of the Natural Gas Market Law, *i.e.* prior to May 2003. Tenders for 10 new distribution networks that will be fed from current extensions of the transmission system have been awarded – this will increase the number of areas where households can be supplied with gas from 5 to 57 cities.

Pricing is determined by BOTAS, with indirect influence by the Government according to its general socio-economic policy. Prices for electricity generation and fertiliser plants are linked to international oil prices and are revised on three monthly terms. These prices are confidential. Prices for TEAS are lower than for private generators – apparently this reflects the interruptible basis of the TEAS contracts. For gas distribution companies, prices are not linked to international oil prices but effected from costs and exchange rates, and are published. Distribution tariffs are not directly controlled but are capped under MENR direction to an upper limit of 30% above the BOTAS supply price, since January 2002. These supply prices are set under long term supply contracts and are confidential – typically such contracts are indexed to oil prices.

The financial performance of BOTAS in 2000 was a profit of about USD 120 million, significantly less than the profit of slightly over USD 400 million in 1998 and just under USD 500 million in 1999. One reason for the poor performance is late payment for gas by TEAS and electricity BOT companies, which is in turn related to the poor performance of the electricity sector as described in the previous section. A second reason is the fall in demand occasioned by the 2000-01 economic crisis. Consequently, it is reported that BOTAS has delayed some payments under its gas purchase contracts.

9. SELECTED REGULATORY ISSUES

The objective of reform in the gas sector closely accords with those in electricity, *i.e.* to establish a financially sound, stable and transparent natural gas market, based on competitive rules with independent regulation to achieve effective, continuous, environment-friendly and economic natural gas delivery, involving the progressive withdrawal of the state and introduction of competition. Regulatory arrangements are substantially parallel to those for electricity under the Energy Market Regulatory Authority.

The new Natural Gas Market Law came into effect in May 2001, with the objective of liberalising the gas market to achieve a financially sound, stable, transparent and competitive market that ensures the reliable supply of good quality gas at competitive prices to consumers in an environmentally sound manner. The law provides for a framework for the establishment of institutions and addresses structural regulation issues as follows:

- Covers the import, transmission, distribution, storage, marketing, trade and export of natural gas and the rights and obligations of market participants. After a one-year transition period (can be extended once by 6 months) participants in each defined market segment (transmission, distribution, storage, wholesale trading and retail) must be licenced under the new law. Specific rights and obligations of market participants will flow from licence conditions, including pricing or tariff systems. Separate accounts are required for each licenced activity and each separate facility.
- Ends the legal monopoly of BOTAS and from 2002 requires a phased reduction in the market share of BOTAS through the divestment of gas import contracts equal to at least 10% of the market per year to private import companies to a point where by 2009 BOTAS has no more than 20% of the domestic consumption market. These transfers are to be conducted on the basis of a tender. No importer or wholesaler can procure more than 20% of annual gas consumption forecasts.
- After 2009 separates BOTAS into three companies specialising in trading (import and sales), transmission and storage activities. In the interim, accounting separation will be required.
- Identifies eligible consumers with annual consumption of more than 1 million cubic meters, gas fired electricity generators or co-generators, and companies producing natural gas in Turkey who will be free to select their own gas supplier (approximately 80% of the market) 12 months after May 2001. The EMRA has a power to broaden the class of eligible consumers over time, with the intention that all consumers would become free. Sales by importers or wholesalers to free customers or to distribution companies are at negotiated prices.
- Provides for non-discriminatory third party access to the transmission and distribution systems, subject to available capacity and also to the absence of serious financial and economic damage for existing (take-or-pay) contracts. In the event of refusal of access the EMRA shall verify the basis of that refusal.
- The EMRA can settle disputes about access/connection to the transmission and distribution system and must approve investment plans by transmission and distribution companies. The EMRA also has responsibility for certain safety elements of the gas sector, including with respect to construction and service of gas facilities. The EMRA will set tariffs for connection, transmission and storage and also retail tariffs.
- Requires that distribution companies purchase no more than 50% of their gas requirements from a single importer or wholesaler, subject to an over-riding decision by the EMRA taking account of the emergence of competition in the market. Distribution companies are under an obligation to purchase gas from the cheapest source as a basis for an energy +cost basis tariff.

- Imposes certain restrictions on vertical ownership relationships and the degree of horizontal ownership overlaps.
- Provides for progressive privatisation of city distribution systems (subject to prior repayment of Treasury guaranteed debt) by municipalities and privatisation of the storage company and other companies within two years after the structural separation of BOTAS. The existing transmission system is seen as a strategic asset and will remain in public ownership.
- Preserves the operation of the Competition Law to the gas sector.
- And levies a turnover fee (<0.2%) on gas market licensees to fund the gas related activities of the EMRA. (Note that fines for breach of gas licences apparently do not add to the finances of the EMRA.).

It remains to be seen whether the required divestiture by BOTAS of gas import contracts will be successful, but as a policy position it is a highly pro-competitive move. Certainly, it is to some extent arbitrary, but the divestiture will be critical to the emergence of competition in the wholesale gas market. The experience of the UK provides a useful reference point, since early reform efforts in the UK in the mid-1980s which *permitted* competition did not result in the emergence of actual competition until further regulatory intervention in 1990, which included the incumbent being required to divest substantial parts of its effective monopoly position in gas purchase contracts.

The BOTAS divestitures involve a tender with the winning company required to enter into a new contract with the foreign seller, including potentially with take-or-pay obligations, and the consequential release of BOTAS from its obligations to that seller. The uncertainties attaching this process include the question of whether the foreign seller agrees to the divestiture to a private company and the release of BOTAS. A number of considerations bear on this including the perceived level of security offered by new importers. Alternatively, BOTAS may continue to act as an intermediary by on-selling gas to the winning tenderer. In this event, the gas sales price must not be less than BOTAS contract cost and the new purchaser must perform all cross border obligations of BOTAS. The possibility of BOTAS re-contracting at a lower price with the foreign seller also needs to be recognised. In any event, the outcome of the envisaged process at this stage is uncertain.

For the time being, the BOTAS gas will be the only gas on the domestic market as it will not be possible under the new Natural Gas Law for importers to enter into completely new import contracts until the existing capacities of the BOTAS contracts are used up. BOTAS is also proscribed from entering into new gas purchase contracts until its market share falls below 20% of national consumption.

The law does not presume a monopoly owned transmission system nor does it envisage a single system operator in the event that there are multiple transmission owners but rather requires their mutual co-operation for controlling flows [check – translation of law is ambiguous on this point – may be clarified in subsequent secondary regulation]. Transmission companies are required to conduct their operations in a cost effective way – this is a critical “hook” for regulatory control. Transmission companies enter transport contracts with importers, wholesalers, extraction companies and exporters and into “delivery contracts” for the hand-over of natural gas with generation companies, eligible consumers, storage companies and other transmission companies. It is assumed that such delivery contracts do not relate to actual *sale* of the delivered gas but simply its terms of delivery.

Transmission tariffs (and tariffs for the supervision of conveyance, which appears to contemplate separate system operation tariffs) and connection tariffs are to be determined or approved by the EMRA. Multi-part, distance based tariffs are envisaged. Connection tariffs to the distribution system are to be set by the EMRA. Wholesale gas prices are to be freely negotiated within a framework of principles approved by the EMRA. Retail tariffs will be set on a gas cost plus operating cost basis. Inflation may be taken into account together with reasonable profit. Tariffs are to be proposed by licensees and approved each year by the EMRA. The law is not specific as to whether rate of return of incentive based regulation (such as a CPI-X framework) is to be applied for tariff approval – this would seem to be a matter for the EMRA to determine in deciding general tariff principles. Tariff regulations are being prepared by the EMRA.

The law specifies accounting separation as between the different segments of the industry and also a significant degree of corporate and ownership separation. Specifically, horizontal ownership integration is ruled out. For example a distribution company cannot participate in another distribution company nor establish other subsidiaries in this segment. A degree of vertical ownership integration is allowed, but not to the extent of establishing control of vertically related entities. And, only one such vertical link is permitted, so a transmission company could not have an interest in more than one distribution company.

Importers have to provide details of contracted flows and variations to the EMRA. Another condition for an import licence is the “capability to contribute to the improvement and security of the national transmission system”, *i.e.* importers may be called upon to contribute financially to the investment projects of the transmission company. Gas exporters (other than by transmission through pure transit pipelines) must give a guarantee that their export activities will not disrupt operation of the domestic transmission or satisfaction of domestic demand for gas.

The Natural Gas Market Law also requires the restructuring of existing city distribution companies that are owned by municipalities within three years. The public share of such companies must be reduced to 20%. The proceeds of sale of municipal companies must be used to repay associated Treasury debts or Treasury guaranteed debts. Alternatively, a repayment schedule over a three year period can be opted for. In order to start the privatisation process, the municipalities must first repay debts arising from natural gas distribution investments that was guaranteed by the Treasury. This will involve an acceleration of the repayment of Treasury (guaranteed) debt and will therefore change the economics of the privatisation process compared with the position if the purchaser simply assumed the relevant debt. In effect, it would appear to require purchasers to come up with more “cash up front” than otherwise, but clearly this step is necessary to establish the right behavioural incentives for distribution company owners as well as for the overriding fiscal constraints as discussed in the section dealing with electricity.

Extension of the distribution system is a priority for Turkey. For new areas, distribution rights within a city are to be allocated by a tender operated by the EMRA. Upon expiry of a licence (minimum 10 years – maximum 30 years) the licence may be renewed by the EMRA taking into consideration the performance of the distribution company. If a licence is not renewed, the licence will be re-tendered and the price paid by the winning tenderer for the existing distribution facilities will be paid to the exiting distributor. Distribution companies must offer a 10% participation to the local municipality, without requiring the municipality to contribute any capital – presumably this will reduce the price that distribution companies are willing to bid in a privatisation and so in effect results in a transfer from the national government to municipalities. A further 10% may be offered to municipalities, for an equivalent capital contribution, but this may only occur if any debt to the Treasury is discharged. In any case municipal authorities are entitled to be represented at board level of distribution companies, irrespective of their interest in the distribution company. Ordinarily, no distribution company can be responsible for more than two cities although the EMRA may set this requirement aside according to development needs.

Overall, the framework established by the new Gas Market Law, particularly the requirement of divestiture of gas by BOTAS (assuming that this is successful) has a strong chance of fostering a competitive gas market in Turkey within a reasonable number of years. Much obviously will depend upon the detailed rules of the market operation and infrastructure use and the implementation decisions that are to be taken by the EMRA. Critical to that assessment is the fact that Turkey has the rare advantage, from an OECD perspective, of being able to access supply sources from a number of different locations (subject to completion of new infrastructure). Competition in many gas markets in the OECD is hobbled by the fact that there is little competition in upstream supply, but because of its location that problem need not arise in Turkey. Also important to the overall assessment is that, given publicly available information on existing contracts and prospective demand growth, supply does not appear to be significantly over-contracted for very long periods with take-or-pay restrictions – it should therefore not be necessary to protect BOTAS from competition. There are nevertheless some elements of the reform plan that could be improved.

One area of potential improvement relates to storage services. It is planned that these would be privatised out of the BOTAS 11 years from now. This delay could hamper the emergence of competition. The law requires that a prospective importer must have access to storage capacity in Turkey equivalent to 10% of annual import volumes and wholesalers must have access to “adequate” storage. Hence, storage will be a bottleneck facility, especially if the 10% requirement exceeds the actual variability in differences between import and use flows, *i.e.* 10% may be more storage than is technically need to balance the flows of some importers. (In fact, as noted above, Turkey presently has no dedicated storage facilities but these are expected to become operational around 2004.) Before the privatisation of storage³⁹ BOTAS will be the only supplier of storage services and BOTAS could hamper imports by competing entities by making access to storage difficult for a variety of “technical” reasons. The law places storage companies under an obligation in the law to render storage services in an unbiased and equal way *in so long as the system is available*. It is the case that storage companies must demonstrate to the EMRA that they provide an economical service but beyond this general requirement, storage tariffs are not regulated – this is a potential weakness in the liberalisation plans while BOTAS remains in a *de facto* monopoly position for storage services. EMRA shall have the authority to verify the basis of any refusal of access to storage facilities. This could still permit a range of subtle discriminatory actions by the storage company until such point as it is privatised, at which time its incentive to discriminate against new entrants should cease.

Much of the detail of the reform arrangements remains to be settled and implemented in secondary regulation. It is not possible at this stage to comment on these design details but several issues can be flagged for consideration by the authorities during the coming stage of policy development:

- The BOTAS group of successor companies will be active in both transmission and trading of gas, both during the transition stage to 2009 and thereafter until the BOTAS successor company which carries out trade activities is privatised. This means that the BOTAS transmission company will have an incentive to deny access to transmission pipeline infrastructure to new competitors of the BOTAS trading company or otherwise do so on discriminatory terms. Consequently, there will be a significant regulatory task to ensure that new competitors can achieve access on fair terms. The full range of access regulation issues is relevant here. A particular trap to avoid is cross subsidisation of BOTAS trading from BOTAS transmission, which could forestall competition. For example, it has proved problematic in some other countries when the transmission company has granted preferential tariffs to its affiliated trading companies. Such preferences can arise in a number of ways, including through inappropriate cost allocations when companies are separated. Discrimination can also occur in more subtle ways, such as in preferential scheduling of capacity etc. It will be a major task of the EMRA to ensure that the starting point for competition is fair in this respect. Particularly important in this respect will be the degree of operational separation between transmission functions and gas trading functions, before these functions are structurally separated into different companies from 2009.

- A similar issue concerning access to distribution networks will arise in the case of gas traders selling gas to eligible customers. Distribution companies will carry out both distribution and retailing activities and will have an incentive to frustrate access by new entrants to their distribution network. The Gas Market Law does not require separate licensing of distribution (pipes) and retailing activity so the task of the EMRA is complicated by the consequential absence of even accounting separation requirements. In the absence of any revision to the Law, which might mandate separation of distribution and retail activities at some level, the EMRA will have to pay special attention to distribution access issues so as to promote the emergence of competition in final supply.
- Gas transmission systems need to be balanced and transactions settled in a similar way to that described for the electricity sector. However, gas systems are more flexible than electricity systems because the transmission system inherently incorporates a degree of gas storage. Consequently, gas balancing does not need to be as “fine” as in the electricity sector. BOTAS will have an incentive to try to over-complicate the gas balancing arrangements as the additional cost involved for new entrants could reduce the extent of competition faced by the BOTAS trading company. The EMRA will have to carefully assess the merits and respective costs and benefits of different balancing arrangements.
- The gas system in Turkey is undergoing rapid development and the electricity sector is likely to become a more intensive user of gas. Consequently, consideration needs to be given to a range of issues that arise from the interaction and increasing integration of the gas and electricity markets. These issues include the relative costs of transmitting gas and electricity and the implications this has for the location of new electricity generation plant. For example, if gas transmission tariffs are based on distance, but electricity tariffs do not account for transmission losses,⁴⁰ new generation builders will have an incentive to locate close to gas import sources and irrespective of whether this is close to or far away from electricity load. If this results in new generation far away from load then the economic efficiency of the overall gas/electricity system could well be less than if gas were transported to a new generator close to load. This problem can be addressed in a variety of ways, such as through more sophisticated and neutral transmission pricing in both the electricity and gas sectors, or alternatively through administrative requirements in generator approval processes.

10. CONCLUSIONS AND RECOMMENDATIONS

A substantial reform of the gas sector is now in prospect that will liberalise and partially privatise the sector. The reform has some close parallels with that in electricity, including a common regulator and again accords with OECD good practice benchmarks. In one respect the proposed reform goes beyond those benchmarks because a key element of the reform is a requirement for a phased divestment of import contracts by the current monopoly importer, BOTAS. This is a highly pro-competitive step, which is designed to *promote* competition rather than simply *allow* it to emerge. If successful, the ultimate prospects for competition in the Turkish market under the reform proposals are quite good compared with some other countries. This is ultimately because the location and prospective pipeline development will mean that Turkey will have the relative luxury of potential competition in upstream supply of gas from producing countries. Also important to the overall assessment is that supply does not appear to be significantly over-contracted for very long periods with take-or-pay restrictions – it should therefore not be necessary to protect BOTAS from competition. Much of the detail of the reform arrangements remains to be settled and implemented in secondary regulation and the following conclusions and recommendations can be considered in that context.

- For the time being, the BOTAS will remain vertically integrated and its gas will be the only gas on the domestic market as it will not be possible under the new Natural Gas Law for importers to enter into completely new import contracts until the existing capacities of the BOTAS contracts are used up. Consequently, **BOTAS will require close regulation by the EMRA to ensure that competition is not foreclosed by the frustration of transmission access – possible measures to address this issue prior to structural separation in 2009 would include operational separation under licensing requirements. BOTAS behaviour in wholesale markets will also need close monitoring and regulation.**
- The law is not specific as to whether rate of return of incentive based regulation (such as a CPI-X framework) is to be applied for transmission tariff approval – this would seem to be a matter for the EMRA to determine in deciding general tariff principles. **It would seem desirable to use incentive based regulation as soon as feasible.**
- The general plan for the separation of BOTAS into its component parts (transmission, storage and trading) and eventual privatisation could be improved in one significant respect. It is likely that storage will be a bottleneck facility and BOTAS could hamper imports by competing entities by making access to storage difficult for a variety of “technical” reasons and has an incentive to do so. **The law requiring storage companies to provide their services to the market should be strengthened. It is not obvious why the authorities have opted to keep storage within BOTAS for so long – it would be desirable to privatised storage facilities once they become operational so as to foster the emergence of competition.**
- **Another important area where the law could be strengthened is the framework which will underpin third part access to distribution networks.** In contrast to the electricity law (where separate licences are required for distribution wires business and retail activities) the gas law defines distribution as including both delivery of gas through pipes and retailing of gas. The law should be strengthened to define these as two functions as separately licenced activities. Alternatively, some other mechanism will need to be found to mandate at least accounting separation of these activities. This would facilitate the entry of independent retailers (or distribution companies from other regions) and promote competition among supply companies that can purchase gas in the wholesale market, use the transportation services of both the transmission and local distribution companies and resell to final users.
- BOTAS will have an incentive to try to over-complicate the gas balancing arrangements as the additional cost involved for new entrants could reduce the extent of competition faced by the BOTAS trading company. **The EMRA will have to carefully assess the merits and respective costs and benefits of different balancing arrangements to ensure that these do not discriminate against new wholesale entrants.**
- The interaction between gas and electricity transmissions tariffs should be assessed by the regulator. There will have to be a substantial new build of gas fired electricity generation in Turkey over the decade and it would be highly desirable to avoid distortions in the choice of location of that plant which might arise from inappropriate interactions of gas and electricity transmission tariffs. **This problem can be addressed in a variety of ways, such as through more sophisticated and neutral transmission pricing in both the electricity and gas sectors, or alternatively through administrative requirements in generator approval processes.**

The discussion of the EMRA under the electricity section and the related conclusions and recommendations apply equally in respect of the gas sector.

ROAD FREIGHT TRANSPORT

11. INTRODUCTION TO THE TRANSPORT SECTOR

The geographic location of the Turkey marks it as a potentially important transit route for surface freight between Europe and Asia, CIS or Middle East countries. Medium-term infrastructure development objectives include augmenting these intercontinental links. Planning at the European level incorporates the Turkish transport network into the Trans European transport Network (TEN). However, for the time being, various regional conflicts have significantly reduced transit flows through Turkey and in total they remain surprisingly small.

In common with the general experience of other countries there has been a long-term shift in relative freight volumes away from the rail sector to road. Indeed, in Turkey, this shift is more pronounced than in most countries. In 1950, the rail system accounted for $\frac{3}{4}$ of surface freight. However, rail now accounts for a share of total freight volumes of less than 5% and road accounts for around 90%. The existing railway network is relatively undeveloped and rail density is low, with a total track length of 8 400 kms (note that Turkey measures around 2 000 kms west to east) and is mostly single tracked and non-electrified. The rail freight system is used mostly to transport mineral and bulk commodities, typical of the heavy load/long distance business in which rail has a clear comparative advantage over road.

In European countries, there was a long-standing tradition for much of the 20th century of restrictive regulatory intervention in the road haulage industry to limit the competitive threat of road haulage to state-run railways. These interventions both limited entry and restricted quantity or limited the services that could be provided by road haulage (ECMT, 1998). In post-war years, the regulatory emphasis gradually shifted away from limiting the competitive environment for road freight towards co-ordination of transport modes, though the effect remained to limit the development of road haulage. It was not until the late 1980s and early 1990s that liberalisation progressed relatively rapidly in the EU and promoted a relative and absolute decline in the price of road transport and improvement in the quality of services. In this respect, Turkish transport policy shifted its emphasis to road transport earlier than in Europe, starting effectively in the 1950s.

Nevertheless, Turkey shares the policy desire of many countries to shift freight loads to rail so as to reduce the environmental and congestion problems caused by heavy road traffic. The chances of success in this desire are low. The underlying economic factors causing the shift to road freight are the same in all countries. Moreover, Turkey also faces a major challenge, not least because of its fiscal constraints, to realise adequate investment in new and improved rail, which would have to be very extensive. Restrictive road regulation policies designed to favour rail have been a failure everywhere – Turkey has wisely avoided this policy “dead end”.

The desire to favour rail should be no barrier to development of essential road infrastructure and the maintenance of a liberal regulatory regime. In fact, highway augmentation is essential because traffic is generally very dense around the major cities in the west of the country, with consequent congestion and safety problems.

The regulatory framework applying to road freight in Turkey is undergoing significant change and alignment with European technical and social norms⁴¹ under the new Highway Transport Law, which is presently being considered by Parliament, and subsequent secondary legislation. For international road freight, the changes involved will be relatively small. Turkey is a member of the European Conference of Ministers of Transport (ECMT), so the regime applying by decrees to international road freight is already substantially aligned with ECMT/EU requirements. For the domestic freight sector, by contrast, the regulatory regime is fundamentally new and implies substantive structural change and an enforcement challenge for the authorities.

The authorities are concerned about the competitive challenge to the Turkish road freight industry from more sophisticated and better capitalised foreign firms that would come from further integration with the EU and consequential liberalisation and internationalisation of the domestic Turkish freight markets. Equally, a common concern among transport authorities within the EU is a competitive challenge by freight operators from low wage accession countries. Mutual fears of this type have underlain the long and halting steps towards liberalisation of international road freight everywhere. Where liberalisation has finally proceeded to a high degree, such as within the EU the results have been strongly positive. "Within those countries and regions which have deregulated, there have been significant falls in transport prices, substantial gains in productivity and in improvements in the quality of service. Competition has increased and profit margins have fallen; there has been substantial growth in subcontracting" ECMT (2000*b*). In particular, fears of massive losses of market share to foreign firms have not eventuated. Some problems have arisen in Europe in parallel with liberalisation, including systematic loss making and "churning" among small firms and associated regulatory avoidance – these do need to be addressed and are a forewarning for the Turkish authorities. But, such problems are not likely to be addressed through more restrictive entry conditions, as the root cause is *management* deficiencies in the small firms and deficiencies in the enforcement of existing rules.

The desirable policy direction for Turkey involves the implementation of European regulatory norms within the domestic freight sector – as planned – and further liberalisation of remaining restrictions on international freight. This will involve ongoing negotiation with other countries and is thus not entirely within the control of the Turkish authorities. Many competition issues in the Turkish road freight sector arise in an international context because of severe limitations on market access to the EU and some other countries. Therefore, the ultimate accession of Turkey to the EU, which internally has a liberalised road transport market, offers the prospect for substantial change in the Turkish road transport market if Turkish hauliers are granted the same legal opportunities as existing EU ones.

12. Road freight – general remarks

The road freight industry consists of transport by road of goods between economic enterprises and between enterprises and consumers. There are various dimensions to the road freight industry, including: domestic vs international; long haul vs short haul; full truckload vs less than full truck load; dangerous/special goods vs ordinary goods; and self provided or "own account" transport vs for hire services. The industry merges at its boundary with postal, parcel and express mail services and also with rail and other transport modes in multi-modal or combined transport. The road sector also competes with rail transport, particularly over longer distances for heavy loads.

International experience demonstrates that the full truckload segment of the road freight market can be a competitive market with relatively little regulatory intervention because it typically has only small economies of size and scope, and entry and exit costs are relatively low. Volumes of freight are large relative to efficient or permitted truck size, timeliness is generally not critical and the full loading of the truck excludes other scope economies. This sector is generally focussed on business to business delivery. Consequently, in the absence of entry restrictions, this industry is generally characterised by a large number of relatively small firms and market outcomes tend to be competitive. Liberalisation in many countries has lowered freight rates, which, because they are more efficiently aligned with costs, improve productivity, reduce costs, and improve the quality of service and responsiveness to customer demands. (OECD 2000)

Economies of scale and scope are more important in the time sensitive or less than full load sector (such as express parcel services). This sector has a larger consumer delivery element and consequently timeliness is often a larger factor and flows from one point to another may not be large relative to the minimum efficient vehicle scale. Consequently, this sector exhibits scope or route economies associated with the pooling of goods destined for the same or other conveniently located destinations. In many countries this market has tended to become more concentrated over time, but this does not rule out effective competition, especially when sustained through vigorous enforcement of competition law.

For the most part the road freight industry is inherently competitive and, consequently, does not require significant industry specific regulatory intervention to induce competition. A fuller discussion of these issues can be found in OECD (2000) There are, however, important technical aspects of regulation covering safety and environment issues. It is beyond the scope of this chapter to address these important and necessary aspects of the regulatory regime, including controls on vehicle size, weight, emission controls, driving time, driver licensing and special treatment of dangerous goods. The focus is primarily on economic regulation as it affects competition – that is upon regulation of entry, exit, prices, services, ownership and on economic instruments such as taxes, fees and subsidies – including the competition effects of technical regulations where these are important.

13. Description of the Turkish road freight sector

The experience in the Turkish road freight market is consistent with international trends – firms are mostly small-scale and significant competition exists in the sector. There were 882 firms involved in international road freight in 2000, more than double the level in 1990, using more than 21 000 motive tractors. The industry is dominated by small firms, with more than half of firms having between 10-25 vehicles. In the total industry, including the domestic sector, more than 800 000 registrations for tractors, trucks and tankers were in effect at the end of 2000. The international fleet is apparently large and relatively modern by European standards and by virtue of the relatively low wage level in Turkey its level of international cost competitiveness is high. There are no state enterprises that operate in the road freight sector.

On a value basis, in 2000 road freight accounted for 53.2% of exports and 35.2 of imports. On a volume basis the respective shares fall to 26.2% and 7%, reflecting the predominance of shipping in large volume low value commodity trade. Turkish vehicles dominate both export and import road traffic, accounting for a 95% share of exports and 83% of imports. However, maritime transport is dominated by foreign firms.

Transit road haulage from European to Middle East or CIS countries is small in comparison to international traffic originating or terminating in Turkey, representing only around 3% of total inward journeys. The direction of exports, measured in vehicle journeys is orientated to Europe, with 55% of journeys, compared with 30% to the Middle-East and 14% to the CIS. As described below, quota limitations on international freight journeys significantly restrict trade and are an anomaly in a liberalising trading environment, including in respect of the customs union with the EU. This problem is, of course not limited to Turkey.

Data on road freight prices are not collected systematically in Turkey but authorities regard the degree of competition as being very high. Indeed, the more important policy concern is that there a problem of low profitability, particularly among small firms. This would make the Turkish position similar to that in the EU.

The competition law applies without any limitations or exceptions to this sector. The Competition Authority has not adopted any decision in the road haulage sector, either in terms of horizontal arrangements or abuse of dominant position, *e.g.* in the form of predatory pricing. Nevertheless, the Competition Authority has launched a full investigation into allegations of a collusive arrangement among firms hauling imported goods to Istanbul. Investigation concerning this matter has been concluded and fines were imposed to the hauling firms (For more detail, please see Official Gazette, dated June 27, 2001).

Table 4. **Market shares of transport modes – domestic**
(in % tonne-kilometres)

	<i>Freight</i>			<i>Passenger</i>		
	1990	1995	1999	1990	1995	1999
Maritime	8.3	6.0	4.8	0.1	0.0	0.0
Railways	8.0	6.3	4.4	2.5	2.3	2.1
Pipeline	7.9	2.3	1.6	-	-	-
Highway	75.7	85.3	89.1	96.6	96.0	96.1
Air	0.1	0.2	0.2	0.9	1.7	1.8

Source: Turkish SPO.

Table 5. **Market shares of transport modes – international freight 1997**
(%)

	<i>Quantity</i>			<i>Value</i>		
	Export	Import	Total	Import	Export	Total
Maritime	72.9	89.9	85.4	39.1	50.5	46.5
Railways & Other	0.6	2.1	1.7	0.7	3.0	2.2
Highway	26.2	7.6	12.5	53.1	35.1	41.5
Air	0.4	0.4	0.4	7.1	11.3	9.8

Source: Turkish SSE.

14. Regulatory institutions and policies

The Ministry of Transport and Communications is responsible for the regulation of the industry, including the preparation and implementation of legal regulations and international agreements. A new Highway Transportation Law is being considered by Parliament. This and subsequent secondary legislation will standardise the regulatory framework from what had previously been a patchwork of decrees applying to international freight transport and regional level regulation applying to domestic freight moving within individual provinces or travelling less than 100 kilometres. There are no quantitative restrictions on entry into international or domestic freight markets and no general price regulation.⁴²

Regulation of entry to international transport in terms of licensing for market access (involving capital requirements, professional qualifications and reputation) and of vehicle weights and dimension requirements and social conditions are consistent with the EU through ECMT obligations. Conversely, entry into the domestic freight sector (prior to the new Highway Transport Law coming into effect) is not controlled under the same framework. Consequently, there is a very significant segmentation between the domestic and international sectors of the Turkish industry. Specifically, the domestic industry does not yet incorporate the standard entry requirements or social controls that are applicable to the international sector. Accession of Turkey to the EU commits Turkey to approximate its law with the Community law, which is what the new Highway Transportation Law is intended to achieve.

The road freight market within the EU for EU national firms is highly liberalised. Effectively, it is a single market, with the only entrance requirement being a national licence from an EU country which permits unrestricted international and domestic carriage within the EU irrespective of the country of origin of the carrier within the EU (Box 1).

In contrast to the Turkish domestic market and the EU market which are liberalised, the regulatory framework applying to international freight between these markets and also other countries remains highly restrictive. Operations are regulated by a web of bilateral and multilateral agreements between countries that restrict quantity and capacity by limiting the number of permits that are required for a truck to make a journey between the jurisdictions. Bilateral agreements have been signed with 50 European, Asian and African countries. Bilateral agreements between the respective countries govern both the number and distribution of permits to engage in the trade. There is also a limited number of multilateral permits under a system set up under the auspices of the ECMT (see Box 2).

The basic quota of ECMT permits for Turkey is 141 permits. Additional permit exchange for multiple licences for lower pollution trucks took the total ECMT licence numbers to 493 in 2001. Note that an ECMT licence is for a single truck only. The limited scope of the ECMT arrangement is made clear when it is recalled that there are 882 firms active in international transport using more than 20 000 motive units. Consequently, most international trade is governed under bilateral quotas which are negotiated annually under bilateral agreements with 50 different European, Asian and African countries. Permits are allocated on a queuing system and when the annual stock of passage permits is exhausted, attempts are made to negotiate additional permits with the country concerned but this is often not successful. At this point, trade by Turkish firms is restricted and market share is lost to higher cost foreign firms that have not exhausted permit limits. The Turkish authorities identify the most significant quantitative bottlenecks that emerged in the final months of 2000 as applying to trade with the Russian Federation, Georgia, Italy, Austria, Romania, Hungary and France. The administrative load on the authorities to run this system is quite high – as an indication, the number of permits allocated in 2000 for flows to the 35 largest trading partners exceeded 200 000 individual voyage permits (Turkish contribution to OECD CLP Roundtable on “Competition issues in Road Freight”).

Box 1. European Union price and entry regulation in road freight services

A basic objective of the EC Treaty was to liberalise the market for transport services to establish a Single Market within the EU. This has been largely achieved.

Price regulation of rates for the international carriage of goods by road between Member states ceased in 1989 (Council Regulation 4058/89). Prior to this, there was a system of bracketed rates originally intended to protect the railways, but subsequently aimed at preventing “excessive competition” in the trucking sector. This system broke down as a result of non-observance by carriers and shippers. Price regulation of domestic traffic by member states was not directly affected by the deregulation of international pricing, but most EU countries have abandoned domestic price regulation of road haulage.

The first major reform of access to road freight transport markets at the EU level was limited to international markets. That is, it was limited to services in which a vehicle is loaded in one Member and unloaded in another. Under Council Regulation 881/92 of 26 March 1992, any carrier registered in a Member state could provide bilateral or cross trade services on a for-hire basis if it had a “Community Authorisation” for international service. These authorisations were not restricted by quota. Authorisation is required only for vehicles in excess of 3.5 tonnes. Own-account international transport does not require a community authorisation, but own-account operators cannot carry traffic for reward, including on back-hauls [European Commission, 1999, p. 33].

The next major reform (Council Regulation 3118/93 of 25 October 1993) gradually liberalised national or “cabotage” markets, that is, where a vehicle operated by a non-resident carrier is loaded and unloaded in the same Member state. Over the period to July 1998, this reform progressively expanded a permit system for trucks to obtain a Community Cabotage Authorisation to perform cabotage services in another Member state. These authorisations were valid for only one or two months and were subject to an increasing quota. Since 1 July 1998, the system of cabotage authorisations was abolished and any truck authorised to perform international transport services under regulation 881/92, *i.e.* holding a Community Authorisation, may perform cabotage services in any Member state. In practice however, cabotage penetration has been small (see ECMT, 1998, p. 10).

The liberalisation of access has also led to efforts to standardise regulation in the social, technical and taxation areas so as to level the playing field between EU members.

Important regulations in this sector relate to driver safety. Council Regulation 3820/85 of 20 December 1985 establishes driving time maxima and rest time minima. Council Directive 88/599/EEC specifies how regulators should check that these standards are indeed met, specifying road-side checks and inspection visits to the offices of the transport companies.

A later directive (Council Directive 96/26/EC) harmonised entry standards for granting a Community Authorisation. An Authorisation can only be denied on the grounds of a lack of a good repute (measured by serious criminal convictions or convictions against social and technical transport regulations), financial standing (the undertaking must have minimum specified capital and reserves) and professional competence (the manager of the undertaking must pass an examination or have requisite practical experience). There is variation in the financial capacity that must be demonstrated in different countries – there is a harmonised minimum level from 17 March 1998 of € 9000 for the first truck and € 5000 for other vehicles.

Some progress has been made by the EU to simplify and harmonise taxes and charges on trucks to equalise competitive conditions (ECMT, 1998 and ECMT, 2000a). However, non-neutralities remain, notwithstanding ECMT recommendations regarding standardisation. It is proposed to shift the structure of taxation to more emphasis on territorially-based taxes and charges (including tolls and distance charges) so that the place of registration is used to a lesser degree as the taxing point. A set of EU rules exists on “dumping”, *i.e.* selling below cost. However, the procedures are complex and costs are inherently difficult to measure so that it is almost impossible to prove that prices do not cover costs (ECMT 1998, p 28). It has made little difference whether liability is attached to hauliers charging below cost or contractors paying below cost.

The bilateral agreements and limited number of ECMT licences means that the freight markets are fragmented and arranging back-haul loads is more difficult, with consequent inefficiencies. In the absence of multiple licences, third country haulage is restricted – this reduces the range of possibilities for back-haul and intermediate loads. For example, it is prohibited for Turkish trucks to haul from Turkey to France under a bilateral French licence without also having a licence from intervening EU countries – the same applies in respect of any back haul load. This illustrates that an important “missing element” in the patchwork of regulation established by the bilateral agreements is a generalised transit agreement. Efforts to implement such an agreement began with a mandate given to the European Commission by the European Council in 1997 to take this matter forward, but no substantive outcome has been achieved. Even if such a generalised transit agreement were established, restrictions would remain. For example, under a transit agreement it would be legal for a Turkey/France load to transit Germany without a German permit, but it would not be legal for a back haul load to be taken from France to Germany and a second back haul load from Germany to Turkey.

Bilateral agreements generally prohibit cabotage and an ECMT licence does not give this right. Hence the domestic Turkish market is reserved for Turkish firms (and vice versa) which further fragments the market. Finally, Turkey does not exempt own account transport from bilateral permit requirements – unlike many other countries – see Box 2.

Viewed against the wider backdrop of trade liberalisation, and the customs union with the EU, the quantitative restrictions on international road haulage and cabotage in the respective markets are an anomaly. An ECMT paper concluded on this point that, “the plurality of bilateral agreements and their secret and peculiar character arising from particular provisions, mean that most international transport outside the European Union is provided by procedures that are far from transparent and which represent exceptions to the rules of the economy. These transport schemes do not satisfy the effective allocation of resources criteria, in other words there is no attempt to achieve the balance that would result from competition and the free play of economic processes” (ECMT, 2000).

Bilateral permit arrangements are reciprocal and thus give an appearance of balance in freight transport. Moreover, they allow a country to exercise some control over freight volumes passing over their territories – this latter aspect is particularly important for a number of European transit countries with sensitive environments. But, if permits are scarce, which is not uncommonly the case, the permit system raises the cost of transport – specifically, low cost firms do not grow, rather it is firms with access to permits. Permits tend to be allocated on the basis of past presence in the industry rather than efficiency. There has been increased fraud in ECMT licensing in recent years which reflects a scarcity value related to insufficient legal supply.

It is not within Turkey’s power, or any other single country for that matter to address these problems unilaterally. Efforts to address these issues within multilateral fora are “work in progress” and rapid resolution cannot be expected. Rather the challenge is to work within the system and promote liberalisation where possible. There are several other “irritants” to the industry which have a multilateral character. These include:

- The various visa requirements for drivers for destination and transit countries. As yet there is no international scheme of visa facilitation for drivers and this can complicate organisation of freight over multi-country routes. The ECMT is working towards a system of periodic multi-entry permissions for ECMT countries;

- Different technical and weights requirements in some countries that are inconsistent with EU standards and the associated high penalties for breach of these country specific standards can segment the market. Turkey identifies transport to Bulgaria and Romania as being problematic in this respect; and
- Border waiting times for Bulgaria and Greece are apparently not a significant problem, compared with some border crossing choke points in EU-central Europe frontier.

The new Highway Transport Law will ultimately involve substantial structural change to the domestic freight industry and ultimately should substantially reduce the segmentation from the international sector since each will have standardised entry and other regulatory requirements. This will involve a substantial tightening of the regulatory regime applied to the domestic sector and it will take some time to adjust. It is likely that a significant number of firms presently active in the domestic sector could not meet EU consistent requirements for market access and social regulation. Mindful of this, the authorities have in mind some transition arrangements to consolidate the industry. This involves the creation of a “few” new contracting co-operative firms – existing firms in the domestic industry would have the option of either meeting the new regulatory requirement or becoming sub-contractors for the new co-operative firms. The details of these arrangements are still being developed, but clearly there are a number of potential competition policy or more general industry policy issues that might arise as follows: [Some private sector contacts indicated that “few” meant around 60-70 firms – clarification required]

- In the circumstances it appears reasonable for the transport authorities to be involved at a policy level in “seeding” such a new structure but it would be inappropriate for the authorities to be involved in ongoing intervention in the structure of the industry. Once new firms are established, the authorities should withdraw and allow the industry structure to evolve according to underlying market forces, subject to the application of competition law.
- Due regard should be had at the outset to competition issues. There should be an adequate number of co-operative firms to avoid market power and there should be no geographic market segmentation which could give rise to market power in a region. Such firms should be free to operate and subcontract on a Turkey-wide basis.

The authorities have indicated that they would be prepared to contemplate abolition of the cabotage reservation (which keeps the domestic freight market wholly to Turkish firms) only after full membership is achieved with the EU and a transition period would be necessary for liberalisation of third country transports [please clarify does the reference to third country transport mean granting cabotage rights to non-EU countries under bilateral agreements or permitting non-EU carriers to haul between Turkey and existing EU countries]. Similarly, the Turkish authorities have indicated that they would seek a time derogation for foreign hauliers access to the domestic market. In essence, the Turkish authorities are concerned about the competitive impact on domestic firms of the entry of more sophisticated and more highly capitalised foreign firms. If past trends are any guide, it might be expected that foreign authorities would be similarly concerned about the competitive impact of prospective entry by low cost Turkish firms into their own domestic markets.⁴³ This kind of mutual fear is likely to delay liberalisation and the specialisation that might be expected according to comparative advantage (where high wage countries/firms would specialise in complex logistics while low wage countries/firm would specialise in labour intensive haulage). The historical precedent for this conclusion is that hesitant steps to liberalise cabotage in Europe were underpinned by fall-back measures in case there was “disastrous” loss of market share – in fact, these fall back measures were never implemented because cabotage penetration has always been minimal. In fact, where cabotage has been liberalised, such as within the EU the actual penetration of cabotage operations has been very limited – cabotage traffic in the EU represents significantly less than 1%

of either national or international traffic and does not exceed more than one percent of traffic in any country. Moreover, it is not the low wage countries within the EU that have been most active in providing cabotage. When the EU market was liberalised finally in 1998 there was no “explosion” of cabotage services as some had feared and no “massive loss” of market share.

It could therefore be argued that it would be a policy of enlightened self interest if Turkey was to pursue liberalisation of cabotage wherever and whenever possible through bilateral negotiation prior to the EU accession and similarly for liberalisation of own account transport. However, were a view to prevail that such liberalisation should be held as “negotiating coin” in accession discussions then such liberalisation is not likely to occur for a considerable period.

In the interim, it would be desirable for Turkish authorities to continue to strive toward early liberalisation of this market by pursuing less restrictive bilateral agreements with EU and other countries. It will be important in that respect for Turkey to demonstrate adjustment to social conditions in its freight industry that will give their counterparts some comfort that opening their markets would occur in an environment of competitive neutrality. A key in this respect will be the full implementation of the new Highway Transport Law.

Box 2. ECMT agreements on trucking

No principle in international law guarantees foreign transport operators freedom of transport in national territories. Such rights must be established by specific agreement. This has long been a difficult area.

In Europe, the first multilateral liberalisation of for hire international transport was achieved in 1974 by the European Conference of Ministers of Transport (ECMT) through the creation of a system of multilateral licences for non-cabotage haulage between Member states. The ECMT includes 40 Member states. Its main function is to further mutual co-ordination of transport policy in Europe by means of making agreed recommendations to member states.

A quota system allocates licences between countries according to their relative importance in terms of GDP and road freight traffic. Only 10 970 annual licences existed in 1998 (ECMT, 1998, p. 4). This system applies only to vehicles with a payload of 3.5 tonnes and an all-up weight of 6 tonnes – below these limits haulage is not limited (neither an ECMT or bilateral licensee is required depending on the bilateral agreement) between ECMT Member states (except Austria, Finland and Italy). Own account transport is also liberalised, with the exception of Austria, Belarus, Czech Republic, Estonia, Finland, France, Hungary, Italy, Lithuania, Poland, Portugal, the Russian Federation and Turkey, which have not liberalised this type of transport. There are a number of other more specific liberalised categories (ECMT, 2001).

In 1998, ECMT Ministers agreed to implement reorientation of the multilateral licensing system to promote progressively less environmentally damaging and safer transport. From 1 January 1999, traditional licences could be progressively exchanged for two EURO1 (green) or four EURO2 (greener and safe) from 50 to 100% of the basic quota. It was expected that the exchange process would take several years (ECMT, 1998c). From 2002 a new category of EURO3 licences will be available with an “exchange rate” of 6.

The ECMT multilateral authorisations apply to only a small fraction of international trade between the EU and other countries and outside of the EU – around 4%. Most such trade is covered by bilateral agreements. These agreements are not uniform but the ECMT recommended in 1997 a standard or model agreement

The model agreement, which is optional, aims to harmonise bilateral agreements with EU law to reduce fragmentation in EU-CEEC road freight markets. Its main advantage of conforming with the model is promoting common standards and definitions which would have a positive effect on competitive neutrality between the various markets covered by the existing patchwork of bilateral agreements.

The model agreement largely incorporates the provisions of the regime applying to ECMT licences. This in effect provides a framework for countries to bilaterally licence additional trade on ECMT terms, thus making the licences subject to the relevant international and national framework of social and other regulation (ECMT, 1997b). In respect of road freight, the model agreement envisages a permit system with the following features:

- Covers transport between and transit through the contracting parties, as well as transport from a contracting party to a third state so long as the journey includes the country of registration of the vehicle (in the later case presumably a permit is required for transport into the third state as well).
- Cabotage is only permitted with the special authorisation of the host country.
- Exempts vehicles with a maximum payload of less than 3.5 tonnes and an all-up weight of 6 tonnes.
- Exempts own account transport.
- Exempts road legs of combined transport, where the road leg is less than 150 km or the closest freight loading terminal is used, and the rail or sea leg represents the major part of the journey
- In the case of neighbouring countries, exempts transport between adjacent border zones of a depth of 25 km provided the destination and departure are less than 100 km apart.
- Transport of perishable goods is subject to a quota free permit system, and there are a number of other more specific liberalised categories.
- An agreed number of permits are exchanged between the contracting parties each year and are issued to resident transport operators by a competent authority.
- Permits are not transferable.
- Trucks registered in one contracting country cannot be taxed in the other country in respect of the ownership, registration and use of the vehicle. However, road use fees are not excluded.
- The Agreement is jointly enforced by the contracting parties, with provision for mutual assistance and a joint committee to administer the operational terms of the agreement.

It has been concerns about the playing field *not* being level that slowed liberalisation of the road freight market within the EU. Actual or perceived distortions to “competitive neutrality” between different countries can arise due to differences in the strictness of technical regulation.

The range of issues here is very wide and includes differences and inconsistent application of technical regulation in different states, complexity of the law which makes compliance difficult, and taxes and charges. A threshold policy question is “Does more competition mean less technical compliance?” This is a subject of debate among transport policy makers. One barrier to robust analysis in this area is a lack of data on the extent of non-compliance.

- At the level of principle, it is clear that if industry participants are earning at least a normal rate of return on invested capital, incentives to engage in non-compliance (extra profits) exist irrespective of the degree of competition. Artificially restricting competition by raising entry barriers is not an effective substitute for appropriate enforcement of technical regulation.
- If, on the other hand, market participants are making losses due to excess supply in the market, incentives for non-compliance may increase in a non-linear fashion with their losses. The appropriate remedy in this case is to address the reasons for excess supply, *which might include lax enforcement of technical regulation* or exit problems, among other things. Clearly, if the economy is growing robustly or if foreign markets are not closed, this is likely to be less difficult to deal with.
- The best response to this issue is to step up compliance efforts in respect of the social and technical regulation. A second best remedy would be to artificially raise entry barriers beyond that justified by technical and cost reflective infrastructure charges. For example, if trucks routinely exceed speed limits because of pressures to increase profits, the best and lowest-cost response is to enforce speed limits more effectively. The argument that

reducing competition by raising entry barriers will increase profitability is true, but it is dubious that it will reduce the economic incentive to speed if the probability of detection and size of penalty for speeding is unaltered, and the costs can be very high. The argument becomes slightly less clear as regulations become harder to enforce. When regulations are very hard to enforce, it may seem more appealing to seek solutions by reducing competition. However, it is poor regulatory practice to introduce regulations that cannot be practically enforced – hence there is a clear benefit in having regulations designed to address their objectives in the most efficient way possible.

Turkey has made significant efforts to improve its technical regulation by aligning its law with the EU law. It now remains to make significant efforts to improve the enforcement of technical regulation within the domestic sector by full application of the law and restructuring of the sector.

15. Conclusions and policy options for the Turkish road freight sector

The ultimate accession to the EU of Turkey and consequential market opening to road transport will be a watershed event for the industry, given the existing highly restrictive limits on international permits which are regulated mainly by bilateral agreements. Substantive derogations from the now highly liberalised EU road freight regulatory framework in its application to Turkey after its accession would be costly to both the Turkey and to Europe. Turkey should continue to seek liberalisation of international trade mutually with EU and other countries. In this context, the following recommendations are made:

(i) Prior to EU accession, the Turkish authorities should:

- Seek to increase the number of bilateral permits and reform of the bilateral framework mutually in several dimensions.
- Seek to increase the number of ECMT permits.
- Seek harmonisation of bilateral agreements with EU countries in the direction of the ECMT Model agreement.
- Participate in mutual processes to agree a multilateral transit agreement with the EU.
- Specifically in the context of the above points, remove restrictions on liberalisation of own account transport from ECMT and bilateral agreements, mutually with EU countries and most importantly with geographically close trading partners.
- Remove cabotage restrictions within bilateral agreements with other countries.

(ii) In the context of EU accession negotiations, the Turkish authorities should:

- Limit to the greatest extent possible protectionist derogations from the freedoms that would otherwise accrue in respect of transport from the accession to the EU, either by Turkey, by EU countries or by other accession countries against Turkey.
- Strive to make any transitional periods in any such derogations as short as possible.

(iii) In support of the general environment for market opening, the Turkish authorities should work to ensure that:

- Turkish technical and social regulation to the Turkish road freight industry is comparable with the range applying in EU countries and is seen to be adequately enforced.
- (iv) In the restructuring of the domestic road freight sector, so as to accord with EU regulatory norms, it is reasonable for the government to intervene to seed a new industry structure around new firms which will contract transport from existing participants. This will ease the difficult transition for domestic participants. However, it is vital that this intervention does not entrench anticompetitive outcomes, in particular it should not give rise to any regional segmentation of the market.

NOTES

1. TEK was created as a government monopoly in 1970 by consolidating several government institutions and nationalising private companies, with the exception of some distribution activities by certain municipalities and two area concession companies. These remaining elements were incorporated into TEK by 1982. TEK's monopoly was abolished in 1984 under a new law (discussed below) that allowed private sector participation. Some of the elements that were incorporated into TEK in the early 1980's were separated out between 1988 and 1992 and a number of other localised generators/distributors were also allowed to commence operation in the decade to 1992.
2. After a constitutional amendment in 1999 this is no longer the case.
3. Build Operate Transfer (BOT) and Transfer of Operating Rights (TOOR)
4. Hydro capacity is less than output because of the economics of hydro systems. More generation capacity is installed than the total water flow potential because of variations in water flow through the year and between years.
5. This paper does not address the broader environment, social and international riparian aspects of these development plans.
6. With the exception of secondary transmission in the concession zones operated by CEAS and KEPEZ.
7. Losses from the transmission/distribution of electricity rise proportionately with distance (resistance) and with the *square* of the current in a wire. In transmission systems, current is kept low by using a very high voltage, which minimises losses. In distribution systems, voltage is lower (especially at the final stage from the last transformer to the customers) and so requires relatively high current. Thus distribution systems are more susceptible to losses. Losses in distribution systems can be reduced by investment that reduces the distance of low voltage/high current power flows. This can be achieved by using additional mid-voltage distribution to a point closer to the final consumer (which requires more transformers to step down the voltage to final supply level) and/or by using additional cabling at the final voltage level (two wires each carry ½ half the current of one wire which results in only a ¼ of the loss).
8. The above description of the application of Laws 3096 and 3996 is simplified. From late 1996 until 1999 Law 3996 was dis-applied to the electricity sector in favour of the reapplication of Law 3096.
9. This does not amount to competition *in* the market.
10. The above description is simplified. At a higher level of detail the processes by the Danistay, State Planning Organisation and the granting of a Treasury guarantee are linked.
11. It remains unclear, however, what would be the legal consequences of a negative Danistay opinion. This is unfortunate – it is indicative of a continued general legal “untidiness” that has plagued this sector. As Turkish markets increasingly interact with international markets where legal certainty and the lack of political risk is regarded as “necessary”, the absence of these market friendly properties would inevitably result in increased cost to Turkey. Specifically, the cost of capital of foreign participants will include a risk premium that will ultimately find its way into higher final electricity prices for Turks. It is to be hoped that problems like this do not re-emerge in the reformed electricity market arrangements that are described below.
12. Source Minister Çakan's statement to Parliament.
13. Compared with economic depreciation rates.

14. Certain smaller entities are entitled to auto-produce electricity by wind or solar energy.
15. Set out wheeling charges.
16. The Competition law potentially applies to TOORs and the approval of the Competition Authority was sought and given for TOORs relating to generation assets.
17. The delineation of the size and corporate structures of the distribution areas changed in a number of steps between 1993 and 2000, with the trend mostly being towards consolidation. An exception is that the 29 areas became 33 following a decree in November 2000.
18. According to the 2001 IEA Energy Policy Survey of Turkey some BOO or BOT contracts include prices up to 11 or 12 c US per kWh. The World Bank Country Economic Memorandum indicates costs of 6 to 9 c US per kWh.
19. As passed by Parliament the regulator was entitled Electricity Market Regulatory Authority and had authority for the electricity sector. The subsequent Natural Gas Market Law changed the regulator's name and extended its remit to include the gas sector.
20. The scope of dispute settlement powers cover disputes arising from connection and system usage agreements in respect of transmission or distribution systems and mediation of disputes under BOT, BOO and TOOR contracts prior to initiation of formal dispute settlement procedures specified in those contracts (if such mediation is possible under the contracts).
21. The settlements system, called the Financial Reconciliation Center, will reconcile financial flows between the balancing market operator and entities involved in the electricity market due to differences between bilateral contracts and actual generation/consumption from the system.
22. Vesting contracts are put in place to establish a starting position at the point when the new market starts. Initially, these would involve contracts for 100% of expected generation and use. The rate at which such contracts phase out – to be replaced by negotiated contracts – sets the boundary for the possible emergence of competition. It is presently contemplated that such contracts would be phased out linearly over 5 years.
23. The U.S. antitrust agencies' merger guidelines about the degree of market share concentration that are viewed as problematic would thus be applied to measure the concentration among relevant suppliers (suppliers with bids 5% or less above the bid of last generator dispatched) rather than, for example, the concentration of *all* suppliers under the given demand conditions.
24. This analysis has implications for the structure of ownership of nuclear power plants. The low marginal costs and long ramp-up periods mean that nuclear plants are usually base load suppliers. Thus, they are usually the least likely to be marginal suppliers. Therefore, the structure of ownership of these units is least likely to directly affect the ability to exercise market power in a dispatch system where each generator dispatched is paid the market-clearing price. However, ownership of nuclear units by a firm that owns other generation that is at the margin more frequently, is likely to increase that firm's incentives to exercise market power because the output from the nuclear plants would benefit from any price increase.
25. The new law embeds this intent in the market share limits relating to the whole of the Turkish market – care will be needed in privatisation decisions to consider competition issues in the relevant functional market, which may not necessarily be Turkey-wide.
26. However, a single owner can own more than one generating plant.
27. In the United States, for example, many large power plants have multiple owners. Each owner independently determines the output and disposition from its share of the plant's capacity.

28. Experience in California, where the ISO and the Power Exchange were separated, was that they made inconsistent decisions. Other jurisdictions have successfully integrated the activities, for example in the PJM Interconnection in the mid-Atlantic states in the United States and in the Australian National Electricity Market.
29. Equally, settlement with the system must be made for contracted electricity that generators have not supplied to the system (say, due to a generator breakdown) or which customers have not taken from the system (say, it was warmer than expected and a retailer has over-contracted compared with actual final demand).
30. For example, a generator that under generates in one period and has to pay the system for that shortfall might deliberately over generate in the next period to receive an offsetting payment from the system for the excess.
31. Australia, for example, has transmission losses in some cases up to 40%. Transmission pricing in Australia does not incorporate transmission losses and provides incentives for generators to locate in high-cost places, near fuel sources and not near the load.
32. In such cases, the extra costs of paying generators to produce out of merit order to relax constraints are often socialized, or averaged across all consumers.
33. In England and Wales, for example, there are 15 zones but about 200 nodes.
34. England and Wales formerly used the unattributed method, but now uses zones. Scandinavia uses zones, defining zones as areas with constrained imports or exports. Australia uses zones, and auctions the use of the constrained transmission between zones. The receipts are used to reduce the charges to use the network.
35. In England and Wales, the introduction of a system to pay the transmission company to relieve constraints caused payments made to generators to resolve transmission constraints drop to 10% of their earlier level.
36. The charges and prices can be combined with cost recovery, in which case they would be subject to the overall revenue cap. This can mean that some generators would be paid (charged a negative price) to connect at certain points on the grid. To be sure the generator actually puts energy into the grid when it is most valuable for it to do so, such a generator might be charged a lot to be connected during the system peak but be charged nothing the remainder of the time. “Deep connection charges” (which mean the new generator pays all consequential reinforcement of the grid—which can be some distance from the generating plant) provide spatial price signals for efficient location, in contrast to the more normal “shallow connection charges” (which mean that the new generating plant pays only the direct cost of connecting a generator to the nearest grid point). Deep connection charges are equivalent to a long-term contract to pay spatially differentiated connection charges, but may have the disadvantage of discouraging entry.
37. The new law embeds this intent in the market share limits relating to the whole of the Turkish market – care will be needed in privatisation decisions to consider competition issues in the relevant functional market, which may not necessarily be Turkey-wide.
38. This pipeline will partly parallel a crude oil pipeline that will deliver Caspian crude to a Mediterranean Sea port head at Ceyhan.
39. And assuming no “greenfields” provision of storage by a new entrant
40. For example if electricity transmission tariffs are based on “postage stamp” pricing with no location signals.

41. These include regulatory controls relating to access to the profession, technical standards, controls on driving time and other safety factors.
42. Firms are required to seek approval for maximum inter-city freight rates from regional authorities but prices below the tariff were set by negotiation. Rates could not be increased for a defined period. the Ministry retained a reserve power to regulate rates in the event of economic disturbances resulting in excessively high or predatory tariffs.
43. Within European policy discussions the issue of “social dumping” (including illegal employment of drivers from low cost countries) is attracting attention. See for example ECMT (2001) and (2001*a*) for a general discussion of the constraints to liberalisation. See ECMT (2001*b*) on the discussion of social dumping

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