Two Steps Forward, One Step Back: How Politics Dim the Lights on Turkey's Renewable Energy Future

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Abstract

This paper analyses the politics of renewable energy in Turkey by discussing the opportunities as well as the constraints facing decision makers in their attempt to create an attractive renewable energy investment environment. A careful study of Turkey's energy policy demonstrates that the main challenge to renewable energy reforms in Turkey is not technological or even financial but rather political. Despite external pressures for reform, political stability, favourable public opinion, and a certain level of civic activism in support of renewable energy, the Turkish government has not been able to reduce the dominance of fossil fuels in its energy policy. Populist decision making, geostrategic calculations and a political reluctance to reduce the state's dominance in the energy sector have led to the slow and limited development of renewable resources. Lack of vision and forward planning in the bureaucracy as well as collective action problems among business and environmental groups have also contributed to the inertia that is preventing a radical shift in Turkey's energy orientation. This analysis is important for dissecting policymaking in Turkey over an issue that has significant repercussions for development and economic welfare as well as national security. It is also valuable in terms of outlining some of the political barriers countries generally face in the promotion of renewable energy.

Key Words

Renewable energy, energy policy, sustainable economic development, fossil fuels, Turkey.

Introduction

Increasing oil prices, growing energy demand and climate change concerns have brought considerable worldwide attention to renewable energy in the past decade. Renewable energy sources include small hydropower, wood biomass, alternative biomass fuels such as ethanol and biodiesel, waste, geothermal, wind and solar. These energy sources are replenished in a short period of time and reduce carbon emissions by releasing little to no gaseous or liquid pollutants during their conversion to electricity, heating or transportation energy. In addition to their many environmental

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benefits over conventional fossil fuels, renewables help reduce dependency on other countries by utilising indigenous energy sources. They also have the potential to increase economic welfare by creating new jobs and developing a domestic industry around new energy technologies. As such, renewables are increasingly recognised as key to energy security as well as sustainable economic development.

In addition to their many environmental benefits over conventional fossil fuels, renewables help reduce dependency on other countries by utilising indigenous energy sources.

The share of renewables in world energy supply and consumption has grown significantly in recent years. According to the Renewable Energy Policy Network for the 21st Century (REN21), renewables constituted approximately 20 % of global energy supply, 16% of global final consumption and almost half of the estimated new electricity capacity added globally in 2010. Total investment in renewables reached US $211 billion in 2010, up from US $160 billion in 2009, with investment in developing countries surpassing that of the developed economies.[1] Despite the increased overall attention to this sector in the past decade, the level of renewable energy development has varied significantly around the world. While some countries have become undisputed leaders with very active renewable energy markets, others have allocated little attention and resources to the development of their renewables sector and as a result have lagged behind.

In this global race to reduce dependence on fossil fuels and adopt alternative sources of energy, Turkey's position as an emerging economy and as a regional powerhouse deserve special attention. Given its rapid industrial development and population increase, Turkey's appetite for energy has been growing in the past decade. According to the International Energy Agency (IEA), even though energy consumption in Turkey is still low when compared to Western European countries, it has risen 86% from 1990 to 2008 and is projected to double over the next decade.[2] Yet, about two thirds of this demand is met by fossil fuels, most of which are imported from the neighbouring countries of Russia, Iran and Iraq.

This dependency on fossil fuels in light of growing energy demand poses major challenges to Turkey's energy, economic as well as environmental security. Since

2002, energy imports have played a major role in the persistent trade account deficits Turkey has had to grapple with. In 2010, for instance, energy imports accounted for over 20% of Turkey's total imports and 81 percent of its trade account deficit.[3] According to 2011 estimates by CIA World Factbook, at US $72 billion, Turkey has the fourth highest current account deficit in the world.[4]

In addition to energy and economic security concerns, Turkey also faces major environmental challenges as a result of its energy profile. Turkey's primary energy consumption is overwhelmingly based on fossil fuels, which constitute about 90% of primary energy supply. High dependence on fossil fuels has contributed to rapidly increasing greenhouse gas (GHG) emissions in Turkey. Even though Turkey has lower GHG emissions per capita (3.6 tonnes in 2007) than OECD countries, the rate of increase in emissions is remarkably high. For example, total GHG emissions by 2007 increased 119% since 1990.[5] Energy is by far the largest contributor to GHG emissions in Turkey, responsible for roughly 75% of the total in 2009.[6]

Part of the long-term solution to these environmental, economic and supply challenges in Turkey is prioritising renewable energy. Renewable energy sources are indigenous, clean with very little to no emissions and sustainable. Turkey has, in fact, considerable potential in generating renewable energy thanks to its topography and climate. Despite its potential, however, the commercial use of new renewables (like solar, wind and geothermal) has not developed in proportion to the large resource base.

There are certainly some technological and financial barriers to the development of renewables. Much renewable energy is intermittent and until energy storage technology can be made cheap and efficient, relying to a large extent on these sources to meet the increase in demand is problematic. Moreover, while maintenance costs of renewables are generally low, their upfront capital costs are relatively high per unit of capacity installed. There are also high capital costs associated with building the necessary infrastructure to connect to existing grids and generating databases to more accurately measure potential. Finally, the local technical capabilities for the design and manufacturing of renewable technologies are weak and the R&D investments to improve these capabilities are very limited.

Despite these generally accepted financial or technological obstacles to renewable energy development, recent literature argues that the problems that are

harder to resolve are the "lack of enabling policy and regulatory frameworks, which usually favour traditional forms of energy sources".[7] It is generally believed that given the technological and financial challenges associated with a relatively new industry, renewable energy investments cannot be left only to the dynamics of the market but instead need to be encouraged by the state. Since 2005, there has been some progress in renewable energy legislation in Turkey, which has resulted in an increase in private sector investment in renewables. However, many experts warn that Turkey is making relatively slow progress in the realisation of its renewable energy potential. They point to limitations in the legislation, uncertainties in and continuous adaptation of regulations, ongoing delays in the licensing rounds and the dominance of the state in existing generation capacity, among others.

The economic crisis that started at the beginning of 2000s and the concerns with supply security in the face of growing energy demand initially brought the urgency to the issue of renewables in Turkey.

This paper aims to analyse the politics of renewable energy policy in Turkey by discussing the opportunities as well as the constraints facing decision makers in their attempt to create an attractive renewable energy environment. Evidence shows that the economic crisis that started at the beginning of 2000s and the concerns with supply security in the face of growing energy demand initially brought the urgency to the issue of renewables in Turkey. In this context, external pressure by the IMF and the European Union certainly explains the timing and seriousness of the efforts by the government to reform the energy sector and pass the necessary legislation on renewables. The government was also pressured domestically by environmental organisations, and businesses and their professional associations that were promoting green energy. An increase in civil society activism and a favourable public opinion in the 2000s also help explain some of the positive developments in the Turkey's renewables sector. Finally, the political stability and the legislative majority the Justice and Development Party *(Adalet ve Kalkınma Partisi)* government produced in the 2000s undoubtedly added to the decision-making capacity needed to push for reforms.

Despite these forces for change, however, there have also been many barriers to the development of renewable energy in Turkey. The short-term populist policies of keeping electricity prices low,

the geostrategic calculation of expanding Turkey's role as an important energy hub and corridor and the political reluctance to completely dismantle the monopolistic structure in the electricity market help explain why the JDP government has continued to promote fossil fuels, especially natural gas, instead of more aggressively pushing for renewables. The slow and limited development of the renewables sector can also be explained by a persistent "developing country mentality" of passing the responsibility to clean the environment to others as well as a certain level of incompetence and disarray in Turkish bureaucracy. Finally, the inability of environmental and pro-renewable business groups to provide a more unified front against the fossil fuel industry has also contributed to the inertia that prevented a switch to a cleaner and sustainable energy economy.

Overall, a careful study of Turkey's energy policy shows that the main challenge to renewable energy development in Turkey is not technological or even financial but rather political. This analysis is important for dissecting policymaking in Turkey over an issue that has significant repercussions for development as well as national security. It is also valuable in terms of outlining some of the political barriers countries generally face in the promotion of renewable energy. It helps us understand why some countries are more successful than others in weaning themselves off of oil by developing alternative and renewable energy sources.

Turkey's Renewable Energy Legislation

Turkey's national renewable energy policy began to take shape in the 2000s while interest in renewables dates back to the beginning of the 20th century. The first production of electricity from hydropower plants started in the Ottoman Empire and gained speed in the 1920s and 30s as the new Republic of Turkey embarked on major development programmes.[8] By the 1970s, worldwide interest in renewables surged as oil consuming states reacted to the oil crises by diversifying their energy supplies. Many governments, including Turkey's, expanded renewable development projects to achieve energy independence and supply security. For instance, in the 1970s, Turkey initiated one of the biggest dam projects in the world, the Southeastern Anatolian Project, also known as GAP. This was also the decade when solar energy got recognition among some Turkish scientists and policymakers. The first national congress on solar energy took place in 1975 in Izmir and the first solar panel was applied to a university

building in 1975. Since 1975, the use of solar energy for water heating purposes has become common. Similarly, interest in geothermal and wind energy increased in the 1970s and 1980s.[9]

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Notwithstanding these early attempts, a legislative and regulatory environment for renewables emerged more systematically in the beginning of 2000s. First of all, the 2001 *Electricity Market Law* and 2002 *Electricity Market Licensing Regulation* created and authorised the Energy Market Regulatory Agency (EMRA), which set forth a number of provisions to promote the utilisation of renewable energy resources. Then, the EMRA and the Ministry of Energy and Natural Resources designed the *Renewable Energy Law* (Law No. 5346), which entered into force in 2005. The law authorised the EMRA to grant Renewable Energy Resource (RER) certificates to facilities, which generate electricity from renewable energy sources. In 2006, *Environment Law* (Law No. 2872) was amended to allow the use of carbon trading, obligatory standards, tax credits and fee exemptions to promote renewable energy technologies and the imposition of emission fees. This was followed by the 2007 *Energy Efficiency Law* (Law No. 5627) and the *Law on Geothermal Resources and Natural Mineral Waters* (Law No. 5686).

The *Renewable Energy Law* of 2005 offered several incentives for renewable energy generation. One of these incentives was a purchase guarantee, by which a retail licensee was obliged to get a portion of its electricity from RER-certified producers. The magnitude of the purchase obligation for each retail licensee for any given year was determined based on the ratio of retail licensee's total sales in the previous calendar year to the total amount of electricity sold in Turkey in that year. The law also guaranteed a feed-in price at which each retail licensee must purchase renewable energy. The guaranteed feed-in price had to be within the price range of the Turkish lira equivalent of 5 to 5.5 euro cent/kWh.[10] The purchase guarantee and the feed-in tariff level were intended to incentivise investment in the renewable energy sector by providing a relatively predictable minimum cash flow stream over the first 10 years of the operational life of the investment. The goal with these incentives was to reduce the market risk attached to the investment and, therefore, the cost of capital.

There were also other additional incentives to renewable energy project developers in the *Renewable Energy Law*, such as the option to make use of forested land and state-owned land to construct a renewable energy plant at a discount of 85% of the land use fees during the first 10 years of the investment; a 99% reduction in license application fees; an exemption from annual license fee payments for the first eight years; the ability to purchase electricity from private wholesale companies; and priority in connecting to the transmission or distribution grid.[11]

The enactment of the 2005 *Renewable Energy Law* and the subsequent amendments to it in 2007 and 2008 were a significant step in creating a renewable energy sector in Turkey. Investors showed an immediate interest, as evidenced by record-high license applications. In November 2007 alone, a total of 752 wind farm license applications for a total of 71.4 GW were filed.[12] However, the initial interest failed to translate into actual investments. In fact, by 2011, there had been no energy sales with RER certificates using the incentive mechanisms established by the law.[13] Even though electricity generation from renewable sources increased by 64% from 2002 to 2010, about 92% of the total renewable energy generation in 2010 came from hydropower plants. Only the remaining 8% came from wind and geothermal sources. [14]

Overall, the 2005 law and subsequent amendments failed to jumpstart the renewables sector. According to experts, this was mostly due to the uncertainties and limitations in the law and ensuing regulations.[15] For instance, even though the law designed a purchase guarantee scheme, it did not provide any clear guidelines on how the guarantee mechanism would operate in practice. Under the law, RER-certified producers had no statutory right to have direct or contractual recourse against a possible breach of the purchase guarantee by a retail licensee. Moreover, the law required all state-owned retail licensees to enter into power purchase agreements with RER-certified producers who approach them, but it did not impose a similar obligation on private retail licensees. Finally, and perhaps most importantly, the feed-in tariff system in the 2005 law was not flexible enough to distinguish between developers in terms of the type of renewable source, the geographic location or the type of the plant, or the time of production during the day, which could potentially affect a renewable energy plant's ability to sell its output to retail licensees at the guaranteed feed-in price.[16] Investors, especially in the solar market, became very critical of the low price guarantees given by the state considering the advanced technology requirements and

huge initial costs of solar investments.[17] For a price guarantee to be considered an incentive, it should be above market prices. The price guarantees offered in this law were clearly below the average market prices. Therefore, no renewable producers used this mechanism.

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In response to these criticisms of the 2005 law, the government started working on amendments to it in 2008. After long political debates, finally on 29 December 2010 the Turkish parliament passed the *Amendments for the Law on Renewable Energy Resources for Generation of Electricity* (Law No. 6094), in which the incentives were increased and differentiated on the basis of resources. The new law guarantees prices of 7.3 US cents/KWh for hydroelectric and wind, a price of 10.5 US cents/KWh for geothermal energy and a price of 13.3 US cents/KWh for solar energy and biomass. Finally, the law also promotes local technology. If the equipment used in renewable energy facilities (commissioned before 2015) are manufactured in Turkey, an additional incentive of 0.4 to 3.5 US cent/kWh is provided for five years.

Many in the sector acknowledge that the new amendment law is an improvement over the initial law. The differentiated feed-in price system for different sources of renewable energy is a move in the right direction. However, some renewable energy investors still find the purchase prices too low and uncompetitive when compared to alternative markets in Europe and elsewhere.[18] In fact, it is claimed that the new feed-in tariff (FIT) was merely the conversion of the old FIT euro prices to US dollars. With the increased euro/dollar parity, the new FIT ended up being even lower than the previous FIT. Some investors also criticise the law for not providing special feed-in tariffs for photovoltaic (PV) solar and offshore wind projects.[19] Solar investors are especially concerned about the provision of the law that limits the solar power capacity eligible for support to 600 MW (which includes both PV and condensed solar) until 14 June 2013 and entitles the Council of Ministers to determine the capacity after that.[20] The lack of long-term regulations creates uncertainty in the sector. Finally, many investors find the local technology content requirement encouraging but impractical at the moment as the required secondary

legislation is lacking. Without any direct government support mechanisms to local manufacturers (like the incentives in Germany, Denmark, Canada, etc.), it is considered unrealistic to expect the production of high-quality parts that are needed to generate renewable energy in a short amount of time.[21]

While progress was made with this law, it remains to be seen whether it will be sufficient to create a viable renewable sector in Turkey. In May 2009, the Higher Board of Planning adopted the *Electric Energy Market and Supply Security Strategy Paper* and determined that the share of renewable resources in electricity generation should be increased to at least 30% by 2023. Given the shortcomings of the *Renewable Energy Law* in terms of the incentives it provides for investors and the slow progress in building the necessary grid system for renewables, it seems highly unlikely that the Turkish government will be able to realise this ambitious target.

The Politics of Renewable Energy in Turkey

The status of the renewable energy legislation in Turkey demonstrates that while there has been some progress, the government has not done enough to realise Turkey's potential in clean energy. An examination of Turkey's political economy context reveals the complexities of policymaking in the energy arena. In this section, I will discuss the forces for and against a change in the energy orientation of Turkey.

Forces for change

Crises create urgency for change. The attempts to develop Turkey's renewable sector in the 2000s could be interpreted as part of the broader energy reform process that was initiated in response to the 2001 economic crisis. The impetus for energy reform came from the realisation that the supply restrictions and shortages in the late 1990s were a result of the imbalance between a burgeoning demand for electricity and an inadequate supply. The quasi-privatisation schemes of the 1980s and 90s, where treasury-guaranteed private participation in electricity was allowed through Build Operate and Transfer (BOT) and Transfer of Operating Rights (TOOR) contracts, proved inefficient in meeting the increase in electricity demand.[22] The 2001 economic crisis also made it obvious that the government could no longer finance the capacity expansions necessary to meet future energy demand. As a result, the Turkish parliament passed the 2001 *Electricity Market Law*, which aimed at establishing a financially

strong and competitive energy market by unbundling the Turkish Electricity Generation Transmission Co. (TEAS) into three companies responsible for generation, wholesale trading and transmission; by outlining the major steps to privatise state's distribution and generation assets; and by creating an autonomous regulatory body, namely the Electricity Market Regulatory Authority (EMRA). Along these lines, many other energy reforms were passed, one of which was the *Renewable Energy Law* of 2005.

Left with few choices, the new JDP government passed its new budget in 2003 and deepened the IMF structural reforms, which included, among others, the deregulation, privatisation and liberalisation of the energy market.

It is also important to note that within this crisis context, external pressure from the IMF and European Union accelerated the reform process. The 2001 economic crisis was considered the country's worst recession, which led to the deepest decline in economic growth since the Second World War.[23] Saddled with high unemployment and burgeoning external and domestic debt, the Turkish government resorted to IMF financing to avoid a debt default. The crisis management programme sanctioned by IMF began in April 2001. When government changed hands in 2002, the IMF continued its pressure by withholding the release of the next loan disbursement. Left with few choices, the new JDP government passed its new budget in 2003 and deepened the IMF structural reforms, which included, among others, the deregulation, privatisation and liberalisation of the energy market. The ensuing energy laws, including the one on renewable energy, were drafted in conformity with IMF priorities and blessing. Consequently, many international finance institutions, among them the World Bank, the International Bank of Restructuring and Development, the German Development Bank and the Council of Europe Development Bank, provided substantial financial support for renewable projects in Turkey.[24] Energy reform was also a precondition for Turkey's EU membership. Especially the principle of energy sustainability, which emphasises the timely development of renewables, has been highly codified in the EU acquis, to which Turkey has to align itself in order to be accepted as a member.[25]

In addition to the crisis-induced and externally accelerated pressures

for reform, it is plausible to argue that the pro-market leanings of the JDP government have also contributed to the progress in the energy sector at large and renewables in particular. As many analysts point out, the JDP has, from the beginning, made it clear that it embraces neoliberalism and is an avid supporter of the market economy.[26] Whether this position is a reflection of its ideology or pure pragmatism of the necessity to adapt to an evolving global and national context makes little difference since the JDP has remained within the parameters of neoliberalism and demonstrated a commitment to the reform process.

Turks' overwhelming support, with 70.2% choosing renewable energy sources as their first-best or second-best source of energy. This percentage falls down only to 60.4% when asked whether they would support renewable energy sources even if this led to a 25% increase in their electricity bills.

Reforms in the energy sector were also possible thanks to the JDP's command of a comfortable parliamentary majority. The JDP won three successive general elections in 2002, 2007 and 2011 with an increasing vote total each time. These victories gave the prime minister, Recep Tayyip Erdoğan, enough political capital and legitimacy to push through reforms as he and his government saw fit. The fragmented and weakened opposition had few institutional channels at its disposal to block Erdoğan's reform agenda. This new consolidation of executive and legislative power in the 2000s was in sharp contrast to the fragmented coalition politics of the 1990s.[27] Erdoğan was also able to achieve some unity and coherence in his government by clearly demarcating the division of responsibilities among the ministers and establishing an undisputed system of hierarchy where he acted as the mediator among conflicting ministers, but he always had the last word. This government structure ensured a high level of coordination among its parts and contributed to the determination and effectiveness with which energy reform was initiated.[28]

Finally, it is important to also acknowledge the role of Turkish society as a force for change in Turkey's energy policy. Typically a lack of public awareness and support is considered a barrier to renewable energy development. Public opinion research in Turkey, however, shows overwhelming support for renewables among the public, which might explain why the government consistently emphasises the importance

of renewable energy. In to a poll of 21 nations in 2008, 84% of Turks support greater emphasis on installing wind and solar energy systems, while 71% favour requiring utilities to use more alternative energy sources, even if this might cause increased costs in the short run.[29] Another poll conducted by Akyazi et al (2010) also confirms the Turks' overwhelming support, with 70.2% choosing renewable energy sources as their first-best or second-best source of energy. This percentage falls down only to 60.4% when asked whether they would support renewable energy sources even if this led to a 25% increase in their electricity bills. As the main reason for their support, 60% of respondents in the survey emphasised the clean and harmless characteristics of renewable energy.[30] Strong support for renewables among Turks could also be explained by their concern for energy security and independence. A 2009 Ipsos Public Affairs Global survey shows that Turks are ranked fifth in the world in terms of their concern with their country's dependence on energy produced in other countries.[31]

Whether or not or how much public support for renewables translates into policy direction and success is certainly difficult to gauge. But perhaps it is possible to argue that a certain level of civil society activism, as an extension of the favourable public opinion, has played an important role in keeping the issue of renewables on the public agenda and putting some pressure on the policymakers to pass the necessary legislation. Historically, energy-related issues have fuelled environmental activism in Turkey since the early 1990s. The issue of nuclear power plants has especially helped politicise the environmental movement in Turkey, attracting politically conscious and active individuals and professional organisations with no prior environmental experience.[32] It is quite interesting how in the 2000s the anti-nuclear movement championed the cause of promoting renewable energy as a new strategy. For instance, Greenpeace in Turkey emphasised wind energy as a better alternative to nuclear in their slogans and got actively involved in the passage of the renewable law in 2005 by meeting with government officials, organising demonstrations, and publicising green energy in media outlets to put pressure on decision makers. According to Özgür

> Increasing the price of a commodity that is as fundamental for everyone as electricity generally poses political risks to governments.

Gürbüz, who was the Greenpeace energy campaign director at the time, two weeks after their intense campaigning, the parliament passed the 2005 *Renewables Law* and the Energy Minister during his speech in the parliament acknowledged the NGOs that supported this legislation.[33]

In addition to environmental NGOs, part of the domestic pressure for renewables has also come from professional organisations and associations in the renewable energy sector. There are over 15 active wind, solar, geothermal, biogas, hydroelectric national associations in Turkey, among which are TUREB *(Türkiye Rüzgar Enerjisi Birliği),* RESSIAD *(Rüzgar Enerjisi ve Su Santralleri İşadamlari Derneği),* GENSED *(Güneş Enerjisi Sanayicileri ve Endüstri Derneği),* GUNESE *(Güneşten Elektrik Üreticileri Fotvoltaik Sanayicileri ve İşadamları Derneği,* TUYEYAD *(Yenilenebilir Enerji Yatırımcıları Derneği),* BIYOGAZDER *(Biyogaz Yatırımcıları Geliştirme Derneği),* BIYOSIAD *(Biyodizel Sanayicileri ve İşadamları Derneği)* and HESIAD *(Hidroelektrik Santralleri Sanayi İşadamları Derneği)*. These specialised associations do not only provide professional network opportunities for their members, but they also organise and/or participate in renewable energy conferences, meetings, workshops, etc. where they regularly meet with politicians and government bureaucrats and present their views on renewable energy. These increased and increasingly publicised interactions between business associations and the government in recent years have likely contributed to improvements in the renewable legislation.

Forces against change

In addition to the external and domestic pressures to reorient Turkey's energy policy towards cleaner and indigenous energy resources, there are also forces that favour the *status quo* and prevent Turkey from fully utilising its renewable potential. Energy policy in Turkey disproportionately favours natural gas and coal over renewables. As clearly stated in numerous government documents and remarks by government officials, energy supply security is the main concern of Turkish energy policy.[34] Ensuring sufficient energy supply to a growing economy takes precedence over market and environmental reforms.[35] For instance, despite Turkey importing 98% of its gas needs, and as a result generating a huge trade deficit, natural gas has become government's fuel of choice for power generation. From 2000 to 2009, natural gas supply increased by 127%, and accounted for 72% of total

incremental power generation, making Turkey one of the fastest growing gas markets in Europe. Gas imports increased by a factor of 2.5 from 2000 to 2009 and are expected to increase by an additional two-thirds between 2008 and 2020.[36] The government continues to sign long-term sales and purchase contracts primarily with Russia but also with other gas producers in Central Asia and the Middle East to diversify its gas resources. Considering that Turkey's natural gas contracts are indexed to oil prices and thus will rise in tandem with them, more investments in natural gas will mean higher import dependency and uncontrollable trade deficits in the future, making Turkish energy policy unsustainable in the long run.

Electricity market regulations take the natural gas market into account more than the other potential competitors in electricity generation.

The priority given to natural gas is certainly in line with the world trend where natural gas is increasingly seen as the lesser evil with lower emissions and with it having largely untapped huge supply potential. The IEA's 2011 *World Energy Outlook* states that the world is entering a "golden age' for natural gas. However, as stated above, Turkey does not produce its own natural gas; it imports almost all of it. Therefore, while countries like the United States can perhaps justify the need for natural gas development on the basis of abundant domestic supply, Turkey cannot do so. Moreover, it is not possible to say that environmental concerns are motivating the government in its choice of energy. Otherwise, how can one explain why Turkey is continuing to invest heavily in coal? In the past decade, coal-fired generation has grown by 17TWh, accounting for a quarter of the incremental demand. Even though Turkey has sizeable lignite reserves, these are of low quality due to low thermal value and high pollution content.[37] Thus, Turkey imports around 90% of its hard coal needs, which, by the way, is also increasingly linked to oil prices. According to IEA's *Turkey Report* (2009), Turkey stands out among OECD countries in promoting a large expansion in coal-fired power generation to meet the projected rapid growth in electricity demand. The government provides 15 years of purchasing guarantees for coal (and nuclear) whereas renewables are limited to only 10 years.[38] The use of coal (especially indigenously produced lignite) may help with increasing supply security but it undoubtedly comes at the risk of local environmental pollution and overall increased greenhouse gas emissions.

It is difficult to make sense of government's preoccupation with fossil fuels- especially natural gas- without understanding the political and geostrategic calculations behind it. One explanation for prioritising natural gas is based on the assumption that an increased use of renewables in electricity generation will raise the price of electricity for consumers and therefore will make politicians less popular.[39] Increasing the price of a commodity that is as fundamental for everyone as electricity generally poses political risks to governments. But for the JDP government, which came to power with the promise of tackling the problems of growing poverty and inequality, electricity price hikes are all the more unacceptable. Even though Erdoğan and his government have remained within the neoliberal framework and conformed to the IMF's agenda, they have also pursued redistributive, neo-populist policies to lessen the burden of neoliberal policies on the poor.[40] This "social neoliberalism allowed it [the JDP] to transcend the boundaries of class politics and construct broad-based cross-class coalitions of political support which would not have been possible under the old-style, Washington Consensus based neo-liberalism".[41]

The problem, however, is that electricity prices in Turkey have been kept artificially low. The JDP government, which came to power in 2002, kept electricity prices lower than their economic costs until the elections in 2007, despite a significant increase in gas prices and generation costs during these years. Prices have also been used as a cross-subsidy across consumers, notably from industrial consumers to households, and between geographical areas. These low prices led to losses of Turkish Lira 4.5 billion for Turkish Electricity Distribution Co. (TEDAS) between 2006 and 2008. TEDAŞ then passed on these arrears to its state-owned gas and coal providers, BOTAŞ and TKI, respectively. According to the World Bank, since 2002, these two companies have taken on an estimated Turkish Lira 3.2 billion in loans in order to cover losses from such non-payments.[42]

After the elections, in January 2008 the electricity price was increased by 20% from the fixed level in previous five years. In March 2008, the government approved a cost-based pricing mechanism, enabling automatic quarterly tariff adjustments to cover changes in costs incurred by electricity supply. The new automated pricing mechanism became effective in July 2008, resulting in another 24% price increase in July, and a 9% price increase in October. A year later, in October 2009, the government announced another 10% price hike from the previous month.[43] The prices were kept artificially constant once again until

after the next elections in the summer of 2011. Starting on October 2011, prices were increased by 9.57% for residential and 9.26% for industrial electricity users.[44]

In addition to causing huge losses for state-owned companies and the treasury, this subsidised pricing system has limited the entry of new actors into the electricity market. It is plausible to argue that the lack of competition has negatively affected the relatively new renewables sector, which has been striving to increase its share of electricity generation. Presumably, renewable energy is not the only victim of this populist policy. At the end, the real cost of artificial pricing is shouldered by, ironically, the very group the policy seeks to protect: the consumers. Not only do they suffer from a lack of competition that would otherwise bring down prices in the long run, but they also end up covering for the government subsidies indirectly through their taxes.

Along similar lines, another barrier to the development of the renewable sector is the monopolistic structure of the gas sector in Turkey. Despite the 2001 *Natural Gas Law*, BOTAŞ is still Turkey's sole natural gas importer and has a *de facto* monopoly on all gas supply in the country. The reluctance to further privatise the natural gas sector in particular, and the electricity market in general, is mostly political.[45] Labour unions, in many cases, slow down privatisations in order to protect their positions in the industry. Patriotism and nationalism also play some role in the political game on privatisations. The foreign ownership of energy industry is said to create problems in national security and sovereignty.[46] In addition, being a state-owned industry for a long time and a tool for political interests and rent seeking, electricity is a sector that governments have a hard time letting go.

This monopolistic structure leads to several adverse consequences. First, any crisis in the natural gas market significantly reduces competition in the electricity market. Electricity market regulations take the natural gas market into account more than the other potential competitors in electricity generation. For example, the take-or-pay contracts, signed before EMRA was founded, have increased the costs of opening the market to competition. These contracts include breach and compensation clauses that require payments by the treasury if these companies do not get generation licenses. Allowing them to operate increases the price paid by the consumers because of high rates. These contracts discourage entrepreneurial activities in other segments of the market and encourage informal connection between

the state and businessman that cultivates a perfect environment for rent seeking. More importantly, EMRA, which was supposed to be an independent regulator, has allowed these contracts to distort competition in the market.[47] What this example shows is that the monopolistic structure in the gas sector makes it harder for the state to be an objective and fair regulator in energy business.

The priority fossil fuels get in Turkish energy policy can also be explained by the lobbying power of the fossil fuel sector. While it is extremely difficult to map out the exact contours of the relationship between the sector and policymakers, a much-publicised confession by a government official, who had been consistently delaying the passage of the renewables law, is quite telling. When confronted by a group of renewable sector representatives in 2005, Ali Babacan, the minister of state responsible for the economy, stated that he was opposing and therefore delaying the legislation because officials from BP, Shell and the US Department of Energy warned him in one of their meetings about the high costs of renewable energy development in Turkey.[48] This incidence demonstrates that "renewable energy is forced to compete on an uneven playing field, as the lion's share of political and financial support is enjoyed by the powerful fossil fuel industry".[49]

It is plausible to argue that the emphasis on fossil fuels is also an extension of government's foreign policy objectives. In addition to energy security and energy independence, energy interdependence has become central to Turkish energy policy, linking it intimately with its foreign policy. Especially in the past decade, the Turkish government has accelerated energy diplomacy and has taken special pride in Turkey's role as a gas and oil transit country, an energy corridor and terminal between its neighbouring supplier regions and the European and other international consuming markets.[50] It is important to note that there is no automatic connection between having oil and gas pipelines in one's territory and consuming that oil and gas. However, the Turkish government often implicitly makes that connection by stating that construction of pipelines contributes to its objective of meeting growing energy needs and ensuring energy security.

There are certainly other motives behind Turkey's proactive energy diplomacy. There is the economic benefit of pipeline revenues and transit fees, which will probably amount to hundreds of millions of dollars each year. But even more important than the economic motives are the political and strategic objectives. The Turkish government perceives pipelines as

vital projects for the promotion of regional integration and stability. The assumption is that pipelines will form the basis for permanent solutions to long-lasting conflicts in the region, and will encourage countries to engage in cooperation while contributing to the economic and political independence of the countries in the region. Turkey is especially committed to advancing energy cooperation with Azerbaijan, Kazakhstan and Turkmenistan to help them entrench their sovereignty against Russia. And finally, the Turkish government expects to use the pipelines as a diplomatic tool in its accession negotiations with the European Union. The assumption here is that Turkey, as a transit county on energy transmission routes from the Middle East, the East Mediterranean and the Caspian region to the West, offers a more stable and viable alternative to Russia.

Another force against a fundamental change in Turkish energy policy is the mentality of the government that is overly passive and reluctant to take risks in acknowledging the necessary transformation to clean energy. This lack of vision or leadership could partly be explained by the 'developing country syndrome' of passing the responsibility to developed countries, which industrialised earlier and therefore polluted the environment first. The general thinking is that the Western advanced economies industrialised without any regard for the environment and now that the world is faced with such environmental challenges, they should be the ones investing in new energy technologies and shouldering the cost of cleaning up. According to this thinking, developing countries should focus on their developmental needs and prioritise economic growth, even if it comes at the expense of the environment.

This view is best reflected in Turkish government's approach to the Kyoto Protocol. Turkey was late in participating in the United Nations Framework Convention on Climate Change and in ratifying the Kyoto Protocol. Turkey is not currently a signatory to the agreement's Annex B, which includes 39 countries that are obliged to reduce their greenhouse emissions to 1990 levels between 2008-2012, even though its emissions have increased at the highest rate since 1990 among all the countries identified in that agreement.[51] Instead, Turkey is recognised as a country with "special circumstances", the reason being that Turkey's main economic and industrial development happened after 1990, making it all the more challenging to reduce emission levels down to 1990 levels.[52] Turkey is the only OECD country that does not have a national emission target for 2020. According to

Turkey's climate change chief negotiator Mithat Rende, "the responsibilities of different countries are not the same: The duties that fall on, for instance, the US and Turkey should not be the same…. Climate negotiations have for too long been a battle between developed and developing countries, since the rich are the biggest emitters and also have a historical responsibility".[53]

The government's "let's go slow" approach to renewables is also justified by some of the problems the renewables sector has faced in advanced countries in recent years.[54] For example, in Spain, the new government recently cut generous subsidies to renewables that were introduced by the previous Socialist government as part of its push to make renewable energy a new source of economic growth and jobs in Spain. Thanks to these subsidies, Spain had accounted for half the world's new solar power installations in terms of wattage in 2008 and Spanish firms had become global leaders in the sector.[55] However, the rapid drop in photovoltaic technology costs has made such incentives a huge burden on the country's economy especially at a time of acute economic crisis. Citing these problems in pioneering countries, the Energy Minister of Turkey, Taner Yıldız, stated in a recent interview that "today every country is reconsidering the policies it set out for wind and solar energy. Why should we rediscover America? We are designing a policy in order not to repeat the mistakes and shortcomings that other countries are experiencing in the world".[56]

The limited progress in the renewables sector can also be attributed to a lack of bureaucratic maturity and competence in Turkey. Perhaps due to a dearth of qualified personnel and the existence of a general bureaucratic inertia, regulations that are necessary to implement the law are oftentimes delayed, and when they are not, they create, rather than resolve, uncertainties.[57] For example, a lack of specific licensing criteria is considered one of the biggest hurdles to renewable energy development in Turkey despite the passage of the *Renewable Energy Law* in 2005.[58] Based on the *Electricity Market Licensing Regulation* of 2002, EMRA started to accept license applications for wind farms on 3 September 2002. From this date until mid 2004, EMRA granted 38 licenses for wind farms. However, due to the gaps in the licensing regulation, EMRA was not able to figure out how it should act on some specific situations, such as where two different license applications were made for the same site.[59] According to Christian Johannes, the general manager of a consulting company for wind farm development projects,

> In 2005, the EMRA cancelled a so-called wind measurement communiqué that forced applicants for wind farms to prove that they had performed a wind measurement… About two weeks after this cancellation, many small companies applied for almost 4,000MW of projects. The problem was that many of these companies submitting proposals failed to complete proper site evaluations, opting to use the internet to select sites for wind farms. The wind conditions at many sites were well below feasibility. Many of the sites were covered with dense forest-proper site selection requires a site visit and cannot be done solely through the Google Earth website. Many of the sites were within or under archeologically protected areas. Compounding the problem, the EMRA posted the project proposals online, leading to a domino effect of other companies applying for the same sites…. To deal with the chaos, the EMRA refused to accept additional proposals beginning of mid-2006. This led investors to buy the projects driven by the fear that the EMRA would never open their doors again…. Millions of euros were transferred from larger Turkish and also foreign companies to these Google Earth developers. The EMRA opened applications again for one day only on November 1 of last year (2007) and received a flood of applications. More than 200 local and foreign groups and companies applied for a total of 75GW of wind farm licenses. To put this in perspective, Turkey's current 2008 total installed capacity of power plans is about 42GW.[60]

While 756 licenses were being considered, on 18 February 2010 EMRA made a decision to cancel the pre-approval decision it granted to 12 projects (those that applied prior to 1 November 2007). All of the applicant companies, which have been given a pre-approval decision for these 12 applications, had already fulfilled their requirements within prescribed times. Therefore, with respect to these 12 projects, it was incumbent upon the EMRA to grant their licenses. EMRA instead stated that the license applications made prior to 1 November 2007 must participate in a bidding session to be organised by TEİAŞ together with the license applications made on 1 November 2007. This new situation was obviously not welcomed by the license applicants that applied prior to 1 November 2007 since they had already passed certain licensing stages and were entitled to obtain their licenses. Considering that EMRA's decision was in clear breach of the law, they sued EMRA as a result and demanded a stay of execution.[61]

Most of the energy companies that have invested in renewables also have investments in other segments of the energy sector, such as in oil and natural gas.

In addition to highlighting the lack of forward planning in the Turkish bureaucracy, the chaos of the 2007

license applications also demonstrates that investors in the renewables sector have not been as professional and serious as investors in other sectors of the economy, such as those in the financial and telecommunication sectors.[62] There are certainly established, well-known companies that are interested in renewables. However, many others have displayed opportunistic behaviour in applying for licenses rather than committing to succeed in well-planned and well-assessed projects. These applications were clearly not relying on healthy wind measurements and feasibility studies. In fact, many investors that applied on 1 November 2007 ended up selling their projects at a high profit margin to those who missed the chance to apply on that one day of applications.[63]

Moreover, there seems to be a lack of cohesion among renewable energy investors. Most of the energy companies that have invested in renewables also have investments in other segments of the energy sector, such as in oil and natural gas. There are only a number of companies that exclusively specialise on renewables and some of these are further specialised on a single type of renewable energy.[64] This variety creates very different incentive structures and expectations among the players, making collective action required to push for further reforms extremely difficult.

Finally, even though civil society activism helped with the initial renewable legislation, it has also created challenges for the sector's further development. This is partly because the environmental movement itself is not very unified in Turkey. While there are many environmental NGOs that support renewables, there are also those that are concerned with their potential negative effects at the local level. Opposition to large hydropower dam projects, for instance, has a long history in Turkey as well as internationally. This is why the international community has been reluctant to consider large hydropower plants among the renewable sources of electricity.

> Opposition to green energy will continue to come not only from the traditional fossil fuel sector, but also, ironically, from groups that have environmental priorities.

In recent years, a chain of small hydropower plant investments in the predominantly rural Black Sea region in Turkey has also generated a new environmental social justice movement that brings villagers and a new breed of urban environmental activists who oppose the commodification and

privatisation of nature together. These new local NGOs are not only suspicious of the state's clean and sustainable energy policies but also of other environmental organisations, especially those that are connected to transnational networks.[65] Similarly, there are a number of environmental organisations that oppose the expansion of certain types of renewables given their negative effects at the local level. For instance, Güven Eken, the (previous) president of *Doğa Derneği* (the Turkish Nature Association), stated in an interview that "while wind energy may be cleaner than other forms of energy in terms of carbon dioxide emissions, it may be quite harmful for the wild bird population" and that "it would be a mistake to interpret advances in wind projects as an outgrowth of a proper energy policy in Turkey".[66] These more localised objections, which have in recent years been instrumental in delaying investment, are similar to the not-in-my-backyard (NIMBY) opposition movements to renewable energy that are seen in various parts of the world. Even though NIMBY is fairly new in Turkey, the experience in other countries shows that it can grow in number and intensity as the number of renewable projects increase in the future. Thus, opposition to green energy will continue to come not only from the traditional fossil fuel sector, but also, ironically, from groups that have environmental priorities. Here lies an interesting conundrum for the renewable energy industry. How can a so-called "green energy" trigger opposition from environmentalists? Are certain renewable sources more environmentally sustainable than others?

Conclusion

Energy politics can be messy. Policymaking gets complicated as governments strive to balance the immediate energy needs of their societies with long-term ideological commitments to market and environmental reforms. However, at a time of increased supply insecurity, energy costs and environmental degradation in the world, the benefits of renewable energy can hardly be disputed. Compared to conventional energy sources, renewables offer governments both energy independence and sustainable economic development.

While the need for clean energy seems obvious, the transformation to a clean energy economy is not inevitable. There are many technological and market barriers to establishing a viable renewable energy sector. Yet, it is generally believed that most of these barriers can be overcome or mitigated by effective government policies that utilise mechanisms like feed-in tariffs, purchase

guarantees, rebates, etc. The clean energy leaders of the world are those countries that have intervened in their energy sectors with some combination of these tools to incentivise renewable energy production and consumption.

Compared to conventional energy sources, renewables offer governments both energy independence and sustainable economic development.

Even though the tools of intervention are proven to be effective, not every country can successfully adopt them. The policy environment in most places is complicated by the existence of an infrastructure and mindset that have historically supported conventional forms of energy. What the Turkish experience demonstrates is that external pressures for reform, especially in response to economic crises, political stability, favourable public opinion and a certain level of civic activism, are necessary conditions for a transition to a more sustainable energy future, but by themselves they are not sufficient. What is also needed is political leadership with a long-term vision that will take the necessary- and perhaps politically painful- reforms to dismantle the monopoly of fossil fuels in the energy sector. The Turkish example also highlights the importance of a professional bureaucracy in designing and implementing consistent energy policies as well as the significance of strong business and environmental coalitions to keep clean energy on public's agenda and pressure the governments to stick to that agenda. Only with a combination of these conditions, a growing economy like Turkey can effectively utilise its clean, indigenous resources and become one of the leaders of the 21st century energy transformation.

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