

# Why Energy Market Liberalisation is Essential for Turkey to Embark on Climate-Energy Policy Integration in the EU

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**Abstract:** The climate policy is an inter-sectoral policy area which requires integration of climate policy with several policy areas. This paper looks at the Climate Policy Integration (CIP) from the perspective of climate and energy policy integration. Initially, it is aimed to make conceptual clarification of policy integration and to analyze the main features of CIP. Furthermore, in this paper the role of energy market liberalisation as a milestone for climate and energy integration within the overall process of EU Climate Policy is also examined. By considering the energy market liberalisation as a crucial stage for EU climate-energy policy integration, Turkey's climate policy in general and the results of energy market liberalisation by taking into account the share of renewable energy sources of the country are explored in order to evaluate Turkey's ability to align itself to EU Climate Policy.

**Keywords:** Climate Policy, Energy Policy, Policy Integration, Energy Market Liberalisation

## *Enerji Piyasasının Liberalizasyonunun Türkiye'nin AB'nin İklim ile Enerji Politikalarının Bütünleşmesine İtibak Etmesindeki Önemi*

**Öz:** İklim politikası, sektörler-arası bir politika alanı olarak iklim politikasının çeşitli politika alanları ile bütünleşmesini gerektirmektedir. Bu çalışma İklim Politikasının Bütünleşmesi'ne (İPB) iklim ve enerji politikalarının bütünleşmesi açısından bakmaktadır. İlk olarak çalışmada, politikanın bütünleşmesinin kavramsal açıklamasının yapılması ve İPB'nin temel özelliklerinin analiz edilmesi amaçlanmaktadır. Bunun yanında enerji piyasasının liberalizasyonunun, iklim ile enerji politikalarının bütünleşmesinde dönüm noktası olması, AB İklim Politikasının genel gelişimi açısından ele alınmaktadır. Enerji piyasasının liberalizasyonunun AB iklim ile enerji politikalarının bütünleşmesinde oynadığı kritik rolü dikkate alarak, genel olarak Türkiye'nin iklim politikası ve yenilenebilir enerji kaynaklarının ülkedeki payı hesaba katılarak enerji piyasasının liberalizasyonu, Türkiye'nin AB İklim Politikasına intibak etme becerisinin değerlendirilmesi bakımından incelenmektedir.

**Anahtar Kelimeler:** İklim Politikası, Enerji Politikası, Politikanın Bütünleşmesi, Enerji Piyasasının Liberalizasyonu

## I. Introduction

Although it is evident that one of the main policy priorities of the European Union is to develop an effective climate policy to cope with the effects of climate change, it is in fact a very complicated policy field. When climate policy is examined as a policy field, it is realized that it is an inter-sectoral area as several policies including energy, transport etc. are directly affecting it. In that

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respect, it can easily be claimed that the most important decisions relating to climate policy are taken in various sectors instead of environmental policy area (Nilsson and Nilsson 2005, 364). Therefore, it is crucial for climate policy to integrate various policy areas and for that purpose, the EU is trying 'to integrate climate policy objectives into other sectoral policies' in order to 'facilitate climate policy integration' (Rietig 2013, 298). From that point of view, the EU is especially giving importance to the integration of climate and energy sectors since the energy sector is crucial for combating climate change. It is estimated that energy sector accounts for almost 80 % of the EU's total greenhouse gas (GHG) emissions (Eurostat 2018). If we look at the evolution of the integration of climate and energy policy in the EU, that is the Energy Union can be described as the last reaching point for 'climate policy integration' (CPI) in a way that the liberalisation of energy market has contributed to CPI substantially.

In Turkey, climate policy is still in an elementary phase and 'climate policy integration' conceptually needs to be taken into account at the policy making process. Even though climate policy is still in an incubation period in Turkey, the steps taken for liberalisation of energy market are a milestone for the climate-energy policy integration since the share of renewable energy in total energy market has increased tremendously.

In this paper, the writers provide an overview of climate-energy policy integration between the EU and Turkey and outline some of the key insights concerning CIP. This will enable them to discuss why energy market liberalisation is important in climate-energy policy integration process. The readers will find the conceptualisation of climate policy integration, the integration of climate and energy policy in the EU, the climate policy of Turkey and finally electricity market liberalisation process in Turkey respectively.

## **II. The Conceptualisation of Climate Policy Integration**

In the EU climate policy, 'policy integration' concept has earned privileged status in recent years in EU policy making process and this can be seen in many EU policy documents. While policy integration is often used in the EU climate policy, 'mainstreaming' concept is also applied regularly in the EU as well. The application of these two concepts in different contexts does not change the fact that the climate policy requires the 'integration or mainstreaming' of climate change into other policy areas (Klein, Schipper, and Dessai 2005, 588). However, it is still necessary to shed light on their meaning for the conceptualisation of climate policy because although they have a close expression for climate policy, these two concepts are used in the climate literature differently.

In order to clarify these two concepts, Yamin's (2005, 357) description can be very helpful in order to make their difference understandable. According to Yamin's description, 'integration' is used in the EU context 'to refer to incorporation of environmental and social considerations into all spheres of

policy-making, particularly economic policy' closely with the concept of 'mainstreaming' which is used in a developmental context in a way that environmental protection must be integrated into sectoral policies in order to achieve sustainable development.

The concept mainstreaming was expressed at the World Summit on Sustainable Development (Johannesburg, 2002) and it was referring to the 'the integration of climate change considerations into development assistance'. Then the concept has been evolved 'as strategies for adaptation within existing sectoral policies and institutional frameworks' (McEvoy, Lonsdale, and Matczak 2008, 12). Kok and de Coninck (2007, 597) makes this concept operative in a way that 'climate change adaptation needs to be mainstreamed into all relevant national, international and sectoral planning processes' in order to accomplish development goals in all these planning processes. Therefore, it can be asserted that mainstreaming concept is more appropriate in a developmental context for the adaptation measures in climate policy.

While 'mainstreaming' concept is relevant to developmental context, 'climate policy integration' has derived from 'environmental policy integration' concept which has been officially recognised by the EU as political principle. However, as Dupont (2010, 4) says it should not be treated as identical with the concept of 'Environmental Policy Integration' (EPI). She suggests that 'there is a need to make the concept of 'Climate Policy Integration' (CPI) functional. Dupont defines the CPI 'as the incorporation of climate policy objectives into other policy sectors' while at the same time enables these objectives' superiority over other policy objectives during their interaction in policy-making process. Rietig (2012, 6) explains these two aspects of CPI firstly, as decision-making should involve 'political commitments to integrate climate change policies as a means of implementing international and national climate targets' and secondly, policies should be designed to 'integrate climate considerations into other sectoral areas'. Mickwitz (et al, 2009, 19) in a more comprehensive manner defines CPI as 'the incorporation of the aims of climate change mitigation and adaptation into all stages of policy- making in other policy sectors'.

Within that perspective, Klein (et al, 2005, 586) emphasises that one of the most important aspects of climate policy is 'to facilitate the successful integration and implementation of mitigation and adaptation in sectoral policies'. However, most of the debate on the CPI is generally focused on the necessity to mitigate climate change by the policies to enable emission reductions at global, EU and national levels while adaptation policies generally occur at local level (Urwin and Jordan 2008, 181). In that perspective, a key barrier for the effectiveness of climate change policies is the lack of integrated policy-making process at global, national, regional and local levels of action among different levels of government bodies (Beg et al. 2002, 137).

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It is evident that climate policy objectives are mainly broken up into mitigation and adaptation sub-objectives. The objective of mitigation is to reduce climate change effects while the objective of adaptation is to reduce the vulnerability to these effects (Laukkonen et al. 2009, 290). Both mitigation and adaptation are crucial for climate policy in a way that they are complementing each other against the negative effects of climate change. However, they had a hierarchical status and mitigation had a superior position over adaptation in climate policy in the early 1990s. In that period, mitigation was generally regarded as a sectoral issue that was included in national environmental policy and/or energy policy whereas policy adaptation in other policy sectors and acquired less attention in that period (Mickwitz et al. 2009, 31). It was thought that climate change ‘was considered to be solved by mitigating the impacts of ozone depletion’. In that context, mitigation was considered to be an action of developed countries that had the responsibility of causing climate change and also providing financial resources to solve that environmental issue. On the other hand, adaptation was seen as the action of developing countries that had no responsibility for causing climate change but are affected by the negative effects of climate change as a development issue rather than environmental (Swart and Raes 2007, 289). During the early period of the climate change policy, the focus was solely on mitigation, while adaptation to climate change was perceived as a marginal issue. However, perceptions to the role of adaptation and the necessity of adaptation policies have changed as a result of significant reports such as Stern Review (2006) and the Intergovernmental Panel on Climate Change (2007) (Mickwitz et al. 2009, 35). Nowadays, although adaptation has earned equivalent position in climate policy integration in general, mitigation is still retaining its privileged position for climate and energy policy integration.

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Mitigation actions of climate change comprises all anthropogenic efforts to reduce greenhouse gas emissions and these emissions generally emerge from almost all economic activities using fossil fuel-based energy (Kok and de Coninck 2007, 591). Within that perspective, energy sector tends to focus more on mitigation efforts while other sectors are more concentrated on adaptation measures (Berkhout 2005, 384). Mitigation efforts involve renewable energy use in order to reduce the effects of climate change and to ensure energy security as well as energy efficiency in addition to technical and infrastructural investments (Laukkonen et al. 2009, 289). In that respect, mitigation in energy sector can only be accomplished effectively by ‘integrating or mainstreaming’ climate policy with energy policy (Klein et al. 2005, 584).

### **III. The Integration of Climate and Energy Policy in the EU**

European Union has been performing a global leadership in climate policy. While the EU is claiming leadership in climate policy, policy integration between climate and energy sectors has been more successful compared to other policy sectors (Nilsson and Nilsson 2005, 374). It can be claimed that the

integration of climate policy and energy policy is strongly supporting the EU's global leadership in climate policy. The integration process of the climate and energy policy in the EU can be traced in some of its main policy documents.

In the 5<sup>th</sup> Environment Action Programme (EAP) in 1992, climate change is one of themes of the Programme and it is declared that climate change is closely related to various EU policies including energy, agriculture and transport. Although there is not any statement on the integration of these target sectors for climate policy, the need for 'sectoral approach' is mentioned for environmental problems and in order to address these environmental problems, the need for integration of these sectors is underlined within the perspective of 'sustainable development' principle (Environment Fifth Action Programme 1993).

The integration of climate and energy policy was stimulated by the Cardiff Process. This process was launched in 1998 when the sectoral formations of the EU Council of Ministers were asked by the Cardiff European Council to establish a series of strategies to integrate the environment and sustainable development into their respective policy areas. The Energy Council was asked to prepare a strategy (Adelle, Pallemmaerts, and Chiavari 2009, 29) However, the Cardiff Process which was specifically designed to promote EPI in a number of key policy sectors in the EU did not have any significant influence on these sectors including energy sector (Adelle, Pallemmaerts, and Chiavari 2009, 50).

In 1998, the Communication on 'Strengthening Environmental Integration within Community Energy Policy', announces that one of the main challenges mentioned for energy policy in the EU is 'to incorporate the environmental dimension into energy sector objectives and actions while developing a sustainable energy policy'. It is therefore necessary for the integration of environmental aspects within energy policy and this integration should take place in a 'balanced way, with account being taken of the other priority goals of energy policy such as competitiveness and security of supply' (COM (98) 571).

At European Council Meeting in Helsinki in 1999, the Council approves the strategy for promoting the integration of environmental aspects and sustainable development in energy policy (Council of the European Union 1999).

In the 6<sup>th</sup> Environment Action Programme (EAP) in 2002, climate change is one of the environmental priorities of the Programme in line with the sustainable development. Within the Programme, the need for the integration of environmental concerns into all EU sectoral policies and activities is again emphasised and for climate change, integration principle is implicitly being mentioned in the Programme. The bridge between climate change and energy sector is constructed so as to reduce greenhouse gas emissions along with the transportation sector. In that Programme, it is also stated that in addition to the mitigation of climate change, EU should also take adaptation measures for climate change (Environment 6<sup>th</sup> Action Programme 2002).

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Commission's Communication on 'Winning the Battle Against Global Climate Change' in 2005 underlines the need to develop cost-effective climate change adaptation and mitigation measures in various sectors, particularly for energy, transport, agriculture and industry (European Commission 2005, 35).

Although European Climate Change Programme (ECCP) which was introduced by the EU in 2000 in order to implement Kyoto Protocol was initially concerned with the mitigation agenda but then the second phase of ECCP in 2005 contributes to adaptation of a much higher profile and then has opened a way to Green Paper on Adaptation in 2007 (McEvoy, Lonsdale, and Matczak 2008, 3). The general objective of the ECCP II is 'to define the EU role in adaptation policies so as to integrate adaptation fully into relevant European policy areas...'. By using that statement, it is understood that integration needs to take place horizontally across different sectors such as energy and transport because of the cross-cutting nature of adaptation to climate change (McEvoy, Lonsdale, and Matczak 2008, 12).

EU Green Paper on Adaptation stresses the need for diversification of energy resources and development of renewable energy. It also calls for a Strategic Energy Technology Plan to accelerate innovation of energy technologies to cope with climate change mitigation and adaptation (European Commission 2007c, 354). After the Green Paper in 2007, White paper on 'Adapting to Climate Change' in 2009 states that 'adaptation needs to be mainstreamed into EU policies' (European Commission 2009).

EU's Communication 'Limiting Global Climate Change to 2 Degrees Celsius - The Way Ahead for 2020 and Beyond' in 2007 deals with the strategic analysis of the EU's energy policy and the Commission recommends taking measures on energy by improving the EU's energy efficiency and increasing the share of renewable energy to 20% by 2020 (European Commission 2007c, 354). During the same time, in EU's another Communication entitled 'An Energy Policy for Europe', the core of a 'new' European Energy Policy is defined as combating climate change, promoting growth and jobs and providing secure and affordable energy to consumers (European Commission 2007a, 1).

In 2008, 'The Climate Action and Renewable Energy Package' which is commonly known as the 'Climate and Energy Package' was published. According to the Package, by 2020, Europe must reduce greenhouse gas emissions by 20%, produce 20% of its energy from renewable sources and increase energy efficiency by 20% (Council of the European Union 2008). For Dupont and Oberthür (2012, 229), regarding to CPI at the EU-level it may be assumed that climate and energy package shows evidence of CPI into the EU's energy sector. This Package represents milestone towards the completion of the internal energy market. As the creation of a common market, this package is an essential tool for achieving climate policy goals since it is a necessary condition for integrating renewable energy into the EU energy market (Dupont and Primova 2011, 10).

Environmental Policy Integration (EPI) in general, as a political principle, has a strong constitutional support in the EU with the European Treaty ratified in 2009 (Article 11 TFEU). According to Massai (2012, 2), The Treaty of Lisbon also introduces reference to the environmental integration principle in the field of energy policy (Article 194(2)). Moreover, in the Lisbon Treaty, energy has become a shared responsibility, paving the way for a common energy policy. The Lisbon Treaty gives the Union a set of clear objectives: a functioning single internal energy market, security of supply, energy efficiency and the promotion of energy networks and renewable sources of energy (Article 194 TFEU) (Carvalho 2012, 20). However, important energy policy competencies remain at the member-state level, including determining the conditions for exploiting energy resources, the choice between different energy sources and the general structure of energy supply (Article 194 (2) TFEU) (Dupont and Oberthür 2012, 233). While the competing logics of EU energy and climate policies reflect the considerable increase of supranational activities in recent years in various interrelated issue areas, they underline the dominant role of EU member states both on the EU and domestic levels (Słominski 2016, 345).

The Communication on ‘Roadmap to a Resource Efficient Europe’ in 2011, the sustainable growth objective of ‘the Europe 2020 Strategy’ sets specific targets related to green house gas emissions, energy efficiency and renewable energy, which are relevant for achieving the resource efficiency objectives. Achieving these targets is vital for protecting natural resources, and action in this Roadmap will also contribute to reach them (European Commission 2011b, 571).

In another Communication on ‘Energy Roadmap 2050’ in 2011, the EU is targeted to reduce greenhouse gas emissions to 80-95 % below 1990 levels by 2050. The EU while realizes the EU’s decarbonisation objective, ensures security of energy supply and competitiveness at the same time (European Commission 2011a, 885).

The 7th EAP builds its policy initiatives on the Union climate and energy package and the Commission Communication on a Roadmap for moving to a low-carbon economy in 2050. It is declared that ‘a more comprehensive Union policy on climate change should recognise that all sectors of the economy have to contribute to tackling climate change’. In that Programme, it is also emphasized that ‘environmental integration in all relevant policy areas is essential in order to reduce pressures on the environment resulting from the policies and activities of other sectors and to meet environmental and climate-related targets’ (Environment Seventh Action Programme 2013).

The Communication on ‘Adaptation to Climate Change’ in 2013 again mentions that ‘one priority and responsibility for the Commission is to mainstream adaptation measures into EU policies and programmes’. In addition, the Commission intends to make legislative proposals on integrating adaption in energy in line with other sectors and ‘to mainstream climate change adaptation

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into EU policies will be pursued in priority fields such as energy and transport' (European Commission 2013, 216).

In the Communication on 'A Policy Framework for Climate and Energy to 2030' in 2014, the Commission proposes a new reduction target for GHG emissions of 40 % compared to 1990 as the major component of the EU's energy and climate policy for 2030. Moreover, it is aimed that the share for renewable energy and improvement in energy efficiency will be 27% respectively for the year 2030. It is also declared that 'the completion of the internal energy market is an immediate priority for the Commission' (European Commission 2014, 15).

In 'A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy' Communication in 2015, it is stated that 'market integration of renewable electricity generation requires flexible markets'. It is also stated that 'the Energy Union needs an integrated governance' to contribute to the Energy Union's objectives so as to bring energy and climate actions together (European Commission 2015, 80). The Communication on 'Clean Energy for All Europeans' in 2016 declares that the Energy Union is the EU's major driving force for comprehensive transition towards a low carbon economy (European Commission 2016, 860). The 'Energy Union' can be regarded as the most significant policy idea that seeks to reform European energy policy which is streamlining energy policy with climate protection goals (Szulecki et al. 2016, 548).

According to the Third Report on the State of the Energy Union in 2017, in order to complete the Energy Union, there is a need for timely submission of integrated national energy and climate plans for the post-2020 period by member states and this is regarded as a key milestone because 'Uncoordinated and unpredictable national energy and climate policies reduce investment certainty'. 'Integrated national energy and climate plans will allow to potential investors to take the necessary long-term investment decisions for the post-2020 timeframe' (European Commission 2017, 688).

According to Dupont and Oberthür (2012, 240), in the EU, there is 'direct and synergistic functional overlap' between the EU renewable energy policy and climate policy and this situation make the conditions favourable for CPI. The EU has been actively promoting the integration of climate and energy policies to cope with environmental and energy security challenges. The political spill over of internal market legislation and environmental protection measures has led to the extension of Community competencies into the energy policy area (Dupont and Primova 2011, 2). In that way, the Commission has increased its regulatory powers of the internal energy market that it has promoted (Maltby 2013, 439).

As Hildingsson, Stripple, and Jordan (2010, 119) state, it was not until the liberalisation of European electricity markets that a clear EU level rationale for harmonising national Renewable Energy Sources (RES) policies have emerged. According to them, integration in climate policy started with electricity distribution and then extended into some aspects of national support mechanisms



for renewable energy. In that respect, it can be asserted that liberalisation of energy markets in the EU has become a turning point in terms of development of the CPI.

#### **IV. The Climate Policy of Turkey**

Climate change phenomenon has entered the national agenda relatively late in Turkey. From this perspective, regulations on climate change and the climate policy integration has yet to find its place newly in Turkish policy-making process. Although Turkey does not have specific climate change legislation, there are still some initiatives and some legal regulations in this area.

The ‘Climate Change Coordination Committee’ in which private sector and non-governmental organizations are also represented was established in 2001. The committee took its final form in 2013 and was reconstructed as ‘Climate Change and Air Management Coordination Committee’ by the Ministry of Environment and Urbanization. Within the scope of United Nations Climate Change Framework Convention, European Economic Community Long-Range Transboundary Air Pollution Convention, the responsibilities deriving from the protocols related to these conventions and internal legislation, the Committee will take necessary precautions with the purpose of combating against climate change and prevent air pollution and coordinate convenient internal and external policies by considering related conditions.

Turkey established National Climate Change Strategy in 2010, National Climate Change Action Plan and Climate Change Adaptation Strategy and Action Plan in 2011. The Regulation on Monitoring of Greenhouse Gas Emissions was published based on Kyoto Protocol and the United Nations Climate Change Framework Convention and the Regulation on Fluorinated Greenhouse Gases (F-gases) were published in 2014 and 2018 respectively. The Regulation on Ozone-Depleting Substances prepared based on EU Regulation on Ozone-Depleting Substances within the frame of adaptation to European Union legislation was published in 2017. It was aimed with this regulation to determine the procedures and principles on the use and phase-out of the substances controlled by Montreal Protocol.

Turkey became a party to the Convention in 2004 after it was removed from Annex-II list by being recognized with its exception in 7th Parties Conference of the United Nations Climate Change Framework Convention held in 2001. Turkey became a party to the Kyoto Protocol in 2009 as well. Turkey, however, does not have any commitments in terms of emission reduction within the scope of Kyoto Protocol. At COP 21 in Paris 2015, Turkey was one the countries which agreed on an agreement of combating climate change and signed the agreement in 2017. Although the Paris Agreement took force in 2016, Turkey has not ratified the Paris Agreement, almost three years after it was agreed.

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Turkey's energy-related CO<sub>2</sub> emissions have been increasing steadily, and in 2014 were 141.6% higher than 1990 level. Much of the increase in total emissions is driven by the power generation sector. Compared to 1990, emissions were 294.8% higher in 2014. The strongest rise in emissions has been in transport (by 36.4%), other energy industries (by 32.3%) and power generation (by 24.8%), while emissions from manufacturing and the commercial and services sector increased by 19.4% and 6.2%, respectively during 2008-2014 period. Conversely, households reduced their emissions by 30% at the same time (IEA 2016, 33).

In 2015, Turkey submitted its first-ever nationally determined contribution to the UNFCCC 21st Conference of the Parties (COP21) meeting in Paris. Under its COP21 pledge Turkey aims to reduce greenhouse gas emissions from 'Business-As-Usual' levels by 21% from an increase by 2030 as a rapidly developing economy (Republic of Turkey Ministry of Environment and Urbanization 2016, 21). When the 6th National Communication is reviewed, it is foreseen that CO<sub>2</sub> emissions will increase at the rate of 133% in 2012 compared to 2030 according to the greenhouse gas projections. The proportion of CO<sub>2</sub> emissions in total greenhouse gas emissions will be 84% and 87% in 2020 and 2030 respectively. When it is compared with business-as-usual scenario it is foreseen that CO<sub>2</sub> and CH<sub>4</sub> emissions will decrease at the rate of 19% and 15% in 2030 respectively. In total, it is foreseen that greenhouse gas emissions will decrease at a rate of approximately 21% in 2030 compared to business-as-usual scenario (Republic of Turkey Ministry of Environment and Urbanization 2016, 146-150).

During this period, GHG emission mitigation is expected to come from significant development of renewable energy, especially in the power sector, such as increasing solar generating capacity up to 10 000 megawatts (MW) and wind capacity up to 16 000 MW and utilising the full hydroelectric potential capacity by 2030 (IEA 2016, 36).

The 27<sup>th</sup> Chapter in the European Council Progress Report entitled as Environment and Climate Change declares that Turkey is relatively deficient in this field. It is highlighted that more extensive and well-coordinated environment and climate policies need to be established and implemented. Furthermore, it is emphasized that a national strategy which follows '2030 Climate and Energy Policies Framework' of European Union has not been adopted yet, and National Climate Change Strategy and National Climate Change Action Plan are not aligned with other strategies as it is in energy strategies. Additionally, a fully alignment to EU's economically greenhouse gas emission monitoring mechanism has not been provided. Finally, it has been noted that Paris Agreement should be ratified and contributions towards the agreement should be initiated (European Commission 2018, 90-92). Moreover the International Energy Agency (IEA) invites the government to consider devising a low-carbon development strategy, as the 2015 Paris Agreement demands from its signatories, with a view to peak and decline emissions (IEA 2016, 42).

### **V. Electricity Market Liberalisation Process in Turkey**

The first liberalisation directives within the European Union in terms of liberalisation of the electricity market were adopted in the electricity market in 1996 and in the gas market in 1998. Including these directives into the legal processes of member states of the Union were in 1998 for electricity and in 2000 for gas. However, the EU has taken one step further, by opening the way for market coupling between member states. In 2010, the process of market coupling process among Central West Europe started and electricity prices began to be calculated by considering the inter-country transmission capacities simultaneously in each electricity market. In 2011 a legal framework, REMIT (Wholesale Energy Market Integrity and Transparency) was established to identify and penalise insider trading and market manipulation in wholesale energy markets across Europe. According to Agency for the Cooperation of Energy Regulators (ACER) the efficiency of the use of European interconnectors increased from approximately 60% in 2010 to 86% in 2016 and consumers benefited from most of the potential social welfare gains by the extension of the pan-European market coupling to two thirds of the European borders, covering 22 countries by the end of 2016 (Merino and Ebrill 2017, 42-43).

Energy market reforms having a growing trend all over the world in the 1980s also affected Turkey's electricity market and the first step towards the liberalisation of the electricity market was taken by Law No. 3096 enacted in 1984 according to General Directorate of Law and Legislation of Turkey. This law regulated the assignment of domestic and foreign companies with capital company status under special jurisdiction other than Turkey Electricity Authority to generate, transmit, distribute and trade electricity.

The main transformation of the electricity market took place in 2001 and afterwards. Energy Market Regulatory Authority (EMRA) was established in Turkey. In the same year, Electricity Market Law No. 4268 was enacted, and electricity generation, transmission, distribution, and trade were separated. Therefore, Turkey experiences both liberalisation and privatization processes in the electricity market simultaneously. All these processes have led to a new structure, in which competition in the energy sector is more prevalent, mainly due to the European Union harmonization process. When the electricity market is examined, energy market reforms following an increasing global trend as of the 1980s have also affected Turkey's electricity market and the first step towards the liberalisation of the electricity market was taken by Law No. 3096 issued in 1984. This law regulated commissioning of domestic and foreign companies with capital company status under special jurisdiction other than Turkey Electricity Authority to generate, transmit, distribute and trade electricity.

When the Electricity Market Law No. 4628 was adopted in 2001, the aim was to establish a financially strong, transparent and stable electricity market operating within a competitive environment and under special legal provisions in order to provide high-quality, sufficient, sustainable, low-cost and

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environmentally friendly electricity to consumers and the establishment of supervision in this market through an independent regulation. In addition, the law specifies the establishment of the EMRA and its operating procedures and principles, as well as the procedures to be followed in the privatization of electricity generation and distribution assets.

With the reforms adopted after Law No. 4628 enacted in 2001, it was aimed to separate the generation, transmission and distribution phases of electricity. The generation, transmission and sales activities were separated into three categories. Electricity Generation Co. was established to carry out the generation activities, Turkey Electricity Trading and Contracting Co. was founded to perform sales activities and Turkey Electricity Transmission Co. was established to perform transmission activities.

The practices required for fulfilling a competitive and liberal electricity market structure foreseen by the Electricity Market Law were determined in 2004 by the 'Energy Sector Reform and Customization Strategy Document' issued by the High Planning Council Supplemental Decision. Within the scope of the document, the privatization process of electricity distribution regions was aimed to be completed until 2006, electricity distribution regions were redefined, and Turkey electricity market was divided into 21 distribution regions.

In 2006, balancing and settlement system was defined to complete the bilateral contractual market structure included in Electricity Market Law No. 4628. Regulations related to this system have been developed within the scope of Electricity Market Balancing and Settlement Regulation. Therefore, preparations in the electricity market for the transition to a stock exchange structure have been initiated.

With the Law No. 5784 enacted in 2008, the date of transition to a stock market structure was postponed to 31.12.2012. Accordingly, it was concluded that in cases where constructing new transmission facility and lines are necessary for the connection of electricity generating facilities to the system, such investments may be made jointly by the legal person or persons who have made a connection request to this facility until 31/12/2015 as long as the financing was enough for the construction of these transmission facilities. Since 2011, Electricity Future Contracts for the monthly average of hourly prices are started to operate in Turkish Derivatives Exchange (EMRA 2018).

Finally, a new period began in the electricity market with the Electricity Market Law No. 6446 adopted in 2013. Law No. 6446 and Electricity Market Law No. 4628, adopted in 2001, were converted into EMRA Organization and Duties Law in 2013. However, the most important innovation realized by Law No. 6446 is the establishment of Energy Markets Management Co. and the legal commencement of energy stock market period. Lastly in 2015, 21 distribution companies were fully privatized.

Turkey's increasing demand for electricity in parallel with the economic growth significantly contributes to market liberalisation and to the development of competition thereof. According to the Ministry of Energy and Natural Resources (MENR); as of the end of 2017, 23.4% of Turkey's installed capacity belongs to public sector, whereas the private sector has 76.6% share. Distribution of Turkey's installed power by resources at the end of 2017 is as follows: 32,0% hydraulic energy, 27.2% natural gas, 21.9% coal, 7.6% wind, 4.0% sun, 1.2% geothermal and while 5.9% is in the form of other sources. In addition, the number of electricity power generation plants in Turkey has increased to 5021 (including unlicensed power plants) by the end of 2017. Of the existing plants, 628 are hydroelectric, 41 are coal, 207 are wind, 40 are geothermal, 286 are natural gas, 3.616 are solar and 203 are other sources (MENR 2018). However, Turkey's energy mix is still dominated by fossil fuels which represent 87.6% of Total Primary Energy Supply (TPES) in 2015, slightly lowered from the share of 88.1% in 2005. Among IEA member countries, Turkey ranks eighth-highest regarding the share of fossil fuels in TPES, behind Japan (93.7%), Australia (93.4%), Luxembourg (92.9%), the Netherlands (92.3%), Ireland (91.4%), Poland (89.9%) and Greece (88.2%) (IEA 2016, 23).

This situation has led to a debate on energy security, and the government has set several targets for energy efficiency and renewable energy. The recently published documents and the objectives in these documents are as follows. In 2012, the High Planning Commission presented the Energy Efficiency Strategy Paper which has an important target of reducing Turkey's energy intensity by at least 20% by 2023. The MENR published its updated 2015-2019 strategic targets in 2017. In the axis of these updated targets; security of energy supply, foreseeable markets in energy and natural resources and naturalization were stated. Sustaining Renewable Energy Resources Support Mechanism (RERSM) for the promotion of renewable energy and enhancing the use of renewable energy in obtaining thermal energy and cooling are among the targets. By the end of the planning period, it is aimed to decrease public share in total generation of electric energy to 20%. Another document published in 2017 is National Energy Efficiency Action Plan including the years 2017-2023. It is aimed to decrease primary energy consumption to 14% by the year 2023 within the scope of this plan through 55 actions determined for 6 sectors as buildings and services, energy, transportation, industry, and technology and agriculture. Another significance of this plan is that it follows the energy efficiency action plan preparation responsibility of member countries within the scope of European Union Directive No. 2012/27/EU.

Finally, renewable energy has an important role in climate change adaptation and mitigation of the effects of climate change. Turkish Renewable Energy Resources Support Mechanism (RERSM) gives the choice between direct marketing and resource- and technology-specific feed-in tariffs (with local content). In recent years, wholesale electricity prices have come down, making

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RERSM the preferred choice of investors. Despite the boom in private investment and the attractive support mechanism, licensing, and grid integration of renewable energy at the transmission and distribution levels remain a challenge, and so do the needed system operation management and network rules, and permitting and spatial planning processes are lengthy (IEA 2016, 30)

When we examine the renewable energy with concrete data, according to IEA, in 2015, the share of renewable energy in total primary energy supply stood at 12.1%, and 32.3% in electricity generation. Renewable energy accounted 12.1% of Turkey's total primary energy supply in 2015. Although there is a dependency on fossil fuels, the use of renewable energy has been increasing in recent years. Among IEA member countries, Turkey is at the median with the fourteenth-highest share of renewables in TPES (IEA 2016, 165-166). A similar situation can be observed in 2016 when the share of renewable energy in electricity generation of EU member countries and Turkey is compared (Figure 1).

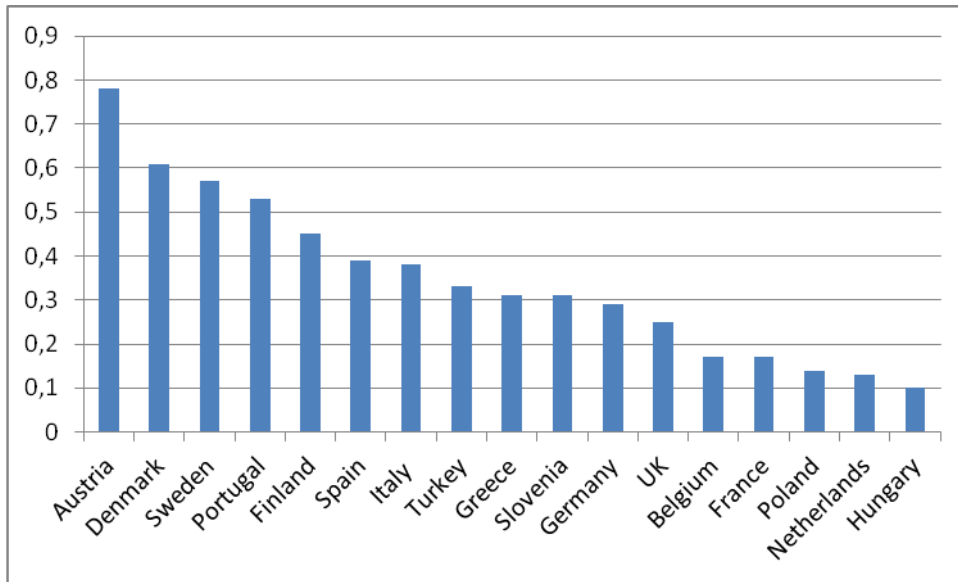


Figure 1

Source: (IEA 2017a)

One of the most important assessments on this matter is Turkey's progress report published by the European Council in 2018. The 15<sup>th</sup> chapter of the report includes the subject of energy. According to this report, Turkey is partially well-prepared in the field of energy, and recorded a good level of progress in terms of supply security, renewable energy, energy efficiency and electricity (European Commission 2018, 78-80).

## **VI. Conclusion**

Climate Policy Integration (CPI) has gained importance in EU climate policy making process in recent years and has been influencing climate policy to a large extent. Likewise the mainstreaming concept can be seen in the EU climate policy and it also has an impact on EU climate policy making process. These two are similar concepts but they are used in different contexts. In that perspective, while mainstreaming is more relevant to development context for adaptation measures, climate policy integration concept is more appropriate to both mitigation and adaption measures. It should also be taken into account that the relationship between climate and energy policy is more about mitigation, but less about adaptation.

The integration of energy sector objectives with climate policy is very important in order to reduce greenhouse gas emissions because energy sector is the major producer in terms of total emissions; therefore, the integration of climate and energy policy is strongly supporting the EU's leadership in global climate policy. Energy Union can be defined as the last successful move for the integration of climate and energy policy but before this move, the liberalisation of the energy market has constituted the milestone for this integration in the EU.

In Turkey, climate policy is still at the initial phase and there are limited legal regulations on climate change as compared to European Union. Turkey, however, has been in a good position in the liberalisation of energy market since the beginning of 2000's. As a result of legal regulations in that area codified in 2001, Turkey has begun to liberalise its energy market. Currently, if the share of renewable energy in energy market in Turkey is compared to some EU members, such as Germany, France and the UK, it can be seen that Turkey's position is better than these countries in energy market. It can be concluded that although Turkey's climate -energy policy integration is still far from Energy Union, the liberalisation of energy market, thereby the increasing share of renewable energy in Turkey can be regarded as critical steps taken to achieve climate-energy policy integration in the EU.

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