



Past, present and future status of electricity in Turkey and the share of energy sources

Harun Kemal Ozturk*, Ahmet Yilanci, Oner Atalay

Pamukkale University, Engineering Faculty, Muhendislik Fakultesi, Camlik, 20070 Denizli, Turkey

Received 20 December 2004; accepted 7 February 2005

Abstract

With a young and growing population, low per capita electricity consumption, rapid urbanization and—until recently—strong economic growth, Turkey for nearly two decades has been one of the fastest growing power markets in the world. Prior to Turkey's recent severe economic difficulties, Turkey's electricity consumption had been growing much faster than its production. It forces Turkey make a rapid action to supply electricity demand. Installed power generation capacity in Turkey reached about 31.84 GW in 2002. However, the growth in electricity generation has remained below the electricity demand, which made Turkey a net importer of electricity since, 1996. Projections show that Turkey's electricity consumption would continue over the next 15 years.

© 2006 Elsevier Ltd. All rights reserved.

Keywords: Electricity; Turkey; Hydroelectric; Natural gas; Thermal power

Contents

1. Introduction	184
2. Brief historical development of electricity in Turkey	189
3. Legal regulations in the electricity sector	193
4. Development of electricity consumption in turkey in the past and expectation for the future	199
5. Power generation and the share of the energy resources	200
5.1. Fossils fuels and nuclear	202
5.1.1. Lignite and hard coal	202

*Corresponding author. Tel.: +90 258 2134030; fax: +90 258 2125548.
E-mail address: hkozturk@pamukkale.edu.tr (H. Kemal Ozturk).

5.1.2.	Oil	202
5.1.3.	Natural gas	204
5.1.4.	Nuclear	204
5.2.	Renewables	204
5.2.1.	Hydro	205
5.2.2.	Wind	205
5.2.3.	Solar	206
5.2.4.	Geothermal	206
5.2.5.	Biogas	206
6.	Conclusion	207
	References	207

1. Introduction

Turkey is located between Europe and Asia, bordering the Mediterranean, Aegean and Black Seas. Turkey is striving to make good use of its geographic location as a transit country. Turkey is an important candidate to be the 'Energy Corridor', for the transmission of the Middle East, Caspian area and Asia Country's rich oil and natural gas resources to the Mediterranean and to the demand centers of the West.

Turkish economy, the world's 16th largest economy, is a dynamic and emerging. In 2001, Gross National Product (GNP) was realized as 148 Billion USD. The gross national product per capita was about 2500 USD [1]. In 2002, GNP reached about 180 billion USD, which corresponds to 2586 USD per capita. In 2003, GNP and per capita is expected to increase to 239 billion USD and 3374 USD, respectively [2]. Population of Turkey is about 70 million, almost 30% of whom are under 15 years old and 52% of the population lives in urban centers [3]. The population growth rate is 1.6%, the highest among IEA countries and it is assumed to increase by about 1.5% per year in the next 20 years. Total population is expected to exceed 83 million in 2022 [4]. The share of exports in GNP rose from slightly above 4% in 1981 to almost 20% in 2002, while imports rose from about 12% to almost 28%. The economy has also undergone a significant shift away from agriculture towards the industrial and especially the services sector in the last three decades, although some 40% of the active population is still employed in agriculture. The net effect of all these factors is that Turkey's energy demand has grown rapidly almost every year and is expected to continue growing.

The relationship among the primary energy consumption, Gross Domestic Product (GDP), population, electricity production and consumption in Turkey has been given in Table 1. As shown in the Table, during the last 10 years, while population increased 1.92%, GDP and Total Primary Energy Consumption increased 3.03 and 3.38, respectively. Net Electricity Consumption, Net Electricity Production and Gross Electricity Production increased about 10% during the same period.

Economic growth is the most important driver of energy demand. Total final consumption of electricity has been shown in many countries to be correlated with economic activity. The other reasons for increase of electricity demand are high birth rates, higher living standards, industrialization and young populations. Like in the other developing countries, in Turkey, the demand for energy and electricity is growing rapidly due to the social and economic development and increase of the population of the country [5,6].

Download English Version:

<https://daneshyari.com/en/article/1752289>

Download Persian Version:

<https://daneshyari.com/article/1752289>

[Daneshyari.com](https://daneshyari.com)