Chapter 6
Energy Efficiency Policies in Some of the European Countries: Instruments and Their Success

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ABSTRACT

This chapter deals with the instruments and policies to achieve energy efficiency in some of the European Union (EU) member states. The main aim of the study is to search for any efficient combination of policy instruments in the EU. The analysis is based on a unique database, derived out of the MURE project, related to energy efficiency policy measures in 28 EU countries and Norway. The study first describes and evaluates the main purposes and instruments of energy efficiency policies. Then, it classifies the measures applied to promote energy efficiency in sample countries by sectors and examines the impact level of different policy packages on energy efficiency.

INTRODUCTION

Energy efficiency is not only crucial for cost-effective use of resources but also there has been increasing evidence of its positive impact on macro economy and public budgets. Moreover, as indicated by Erdoğdu, Karaca, and Kurultay (2016), improving energy efficiency is one of the most cost-effective ways of reducing CO_2 emissions, reducing air pollution, and increasing security of energy supply.

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Countries have had concerns about efficient use of energy for a very long time. Nevertheless, a dramatic increase of the number of policy and the variety in instrument for efficient use of energy occurred especially after 1990s in many countries. Currently, energy saving is an important priority in the policy agenda for almost all countries and many countries around the world are implementing energy efficiency policy instruments. The initial programs focused mainly on appliances but more recent schemes, notably in the United States and Western Europe, have significantly improved the energy efficiency of buildings through activities on insulation and heating. European countries became much more successful in this respect. The EU member states are seen to be the world champion with respect to policy design, policy innovations and their energy efficiency outcomes despite some member states are among the world's largest energy consumers. As national policies of member states are heavily formed by the EU regulations and policies, the EU provides a clear roadmap for moving towards a low-carbon and energy-efficient economy by drawing concrete targets on emissions and uses to members' states.

According to the Europe 2020 Strategy approved by the European Council, it is targeted to increase energy efficiency by 20%, to reduce greenhouse gas emissions (GHG) by 20% and to reach a share of 20% of energy from renewables from 1990 in 2020. The Energy Efficiency Directive (EED; 2012/27/EU) further specified that the EU-28 energy consumption in 2020 has to be no more than 1,483 million tons of oil equivalents (Mtoe) of primary energy or no more than 1,086 Mtoe of final energy. On 23 October 2014, the European Council decided on a new 2030 Climate and Energy Policy Framework including a binding EU target of an at least 40% domestic reduction in greenhouse gas emissions by 2030 compared to 1990, and a share of at least 27% of renewable energy consumed in the EU in 2030 is binding at EU level. There are also sector-specific targets by the EU regulations. On the other hand, even in the EU members, there is a wide range of policy design with respect to their targets, actors, measures and other instruments. The gap between the estimated opportunities in energy efficiency in sectors and the actually achieved levels requires examining energy-efficiency policies design and policy-making process in more detail in order to determine the characteristics of successful policies.

As a UNEP (2007) publication put forwards, there are numerous and substantial barriers such as market failures, hidden costs and benefits, first-cost barriers, behavioral, informative and structural barriers that hinder the realization of calculated significant energy saving potential. These barriers are often overcome by public policies and programs. Such policies can be divided into the categories of regulatory, economic and fiscal incentives as well as informative/support instruments.

The economic view is an essential part of energy efficiency and there are many methods that can be applied to ensure energy savings. Market-based instruments use market forces to minimize the cost of saving energy, and accelerate the penetration of efficiency improvement interventions when they can be made at negative costs, but can also be used to force the introduction of positive cost measures, justified by the externalities (Farinelli, 2005, p. 1017). The annual energy cost-saving potential is an important factor that guides the adoption of energy efficiency measures (Nair *et al.*, 2010; Mahapatra & Gustavsson, 2008).

To increase the adoption of energy-efficient investments and behaviors, public policies are necessary to eliminate barriers that discourage stakeholders from pursuing energy efficiency. Beyond removal of barriers, proactive instruments are imperative to give consumers positive reasons to adopt efficient practices (UNDP, 2009, p. 6). Since different countries face different barriers to energy efficiency, adapting the policy instruments to these barriers increases the effectiveness of overall policy. However, it is also important to recognize that the same instruments can significantly vary in their success in different settings which is due to differences in design and other factors (UNEP, 2007, pp. 7-8).