

2. Energy Efficiency Case Studies

Energy efficiency has long been held by its proponents as a “win-win” opportunity to help an economy save money and reduce the negative externalities associated with energy use.¹² The fact that “cheap” options to improve energy efficiency were not being adopted on a large scale led to the notion that there exist market barriers to the uptake of energy-efficient technologies. Whilst such barriers might exist, not all require a policy response. The guiding principle to policy interventions is that these must improve societal welfare. Given this perspective, energy efficiency should not be considered as a goal in itself, but as a means of achieving economically efficient and equitable resource allocation.¹³

APEC governments have invested considerable efforts in the promotion of energy efficiency. The six case studies covered in this section draw from the experiences of four APEC economies (Japan, the Philippines, Thailand, and the US) in enacting energy efficiency policies in three different sectors: buildings, transportation, and appliances (including lighting). For each sector, we analyze, evaluate and compare the policies developed in one industrialized economy and one developing economy. These policies typically include standards and labels together with a range of fiscal and financial incentives. In many of these cases, energy efficiency policies have led or are purported to lead to significant energy saving benefits. However, because there is sparse information available on the costs of complying with the policy, and cost-benefit analysis usually does not play a prominent role in the policy formulation process, it is typically difficult to assess whether these energy efficiency policies have actually led to net social benefits or maximized social welfare.

Standards have formed the centerpiece of energy efficiency policies in most of the APEC economies analyzed, the one exception being the transportation sector in the Philippines for which there are no fuel economy standards as yet. By mandating improvements in energy efficiency, standards can result in significant energy savings: in recent years, for example, energy savings from appliance standards in the Philippines have amounted to a considerable share of its overall energy conservation target. However, the costs of achieving these energy savings need to be considered in order to evaluate whether the energy reductions are economically justifiable. While standards also risk being inflexible, in several cases policymakers have tried to introduce provisions that allow the standards to be met in a flexible manner. Thailand’s building energy code, for instance, specifies standards for different components of the buildings, but allows individual buildings the option not to comply with one or more of the individual standards as long as the building as a whole complies. Such provisions enhance the cost-effectiveness of standards and should be given due consideration in APEC economies in which they have not been included.

Regular updates and revisions to policies are helpful in ensuring that policies are up-to-date and therefore effective. However, this has often not been the case in the APEC economies analyzed, with the government taking a particularly long time to revise energy efficiency policies in Thailand and the Philippines. At the same time, the formulation process for energy efficiency policies typically allows stakeholder views to be reflected. Since consulting stakeholders and adjusting policies to reflect their views is time-consuming, there is an implicit tradeoff here between strong stakeholder engagement and rapid revisions to policies that should be recognized by policymakers.

¹² Allcott, H., M. Greenstone (2012), “Is there an energy efficiency gap?” E³ Working Paper No. 032, Center for Energy and Environmental Economics, University of California, Berkeley.

¹³ Jaffe, A., R. Newell, R. Stavins (2004), “The economics of energy efficiency,” *Encyclopedia of Energy*, ed. C. Cleveland, pp. 79–90. Amsterdam: Elsevier.

The energy efficiency case studies are organized as follows. We first look at the buildings sector, analyzing building energy efficiency policies in Japan and Thailand. Transportation fuel economy policies in the US and the Philippines are considered next. We then discuss appliance energy efficiency policies in Japan and the Philippines.