

# Energy efficiency: the first renewable

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The world has seen ample research focusing on the topic of energy efficiency and how consumers can reduce their energy consumption, and in the 1990s researchers introduced yet more energy topics to consider: sustainability, climate change, environmental impact, consumer behaviour, and the promotion of sustainable consumption via methods such as recycling, energy efficiency, and conservation. However, Saudi Arabia sees the situation differently, and has done so historically. One of the problems often cited by Saudis engaging with energy efficiency issues is the lack of understanding of the concept of sustainability. The Arabic word *Istidaama* has only been applied in this context in Saudi Arabia in recent years, and the concept of using energy more efficiently is both new and vague. It has been argued that whilst most developed countries are starting to increase consumer awareness about energy efficiency, people in Saudi Arabia still believe that their country floats on a river of oil.

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Saudis have been accused of ignoring the truth that although Saudi Arabia is one of the world’s largest oil producers, the country is also amongst the highest in terms of energy consumption. In 2012, the country consumed approximately 3 mb/d (million barrels of oil per day), and it is likely that this will continue to rise, according to EIA figures. Currently, Saudi Arabia is planning to devote billions of dollars and widespread

resources to the development of renewable energies across the country. This is crucial because the current energy efficiency situation in Saudi Arabia is problematic and still neglected. Some Saudi economists argue that the problem of the country’s increasing oil consumption may be solved by re-pricing fuel and electricity, but politicians are cautious about this method, as they want to avoid the kind of political unrest that has occurred in other Arabic countries because of the Arab Spring.

## A challenging energy future

However, renewable energy investment and energy productivity are not the only factors contributing to the maintenance of energy security in the Kingdom; other tasks should be dealt with before switching to renewable energies (although one of the most crucial targets currently faced by Saudi Arabia is the building of renewable energy technologies in order to improve its sustainability status). The Kingdom faces a range of barriers in terms of building a more sustainable future: cars, rather than public transport are the main mode of transportation; the education system is encumbered with weak curricula, dilapidated school buildings, and unqualified teachers; and domestic energy consumption and continuous excessive petroleum usage is increasing at a time when other countries are beginning to control their energy consumption. Furthermore, recycling, conservation, efficiency, and ‘green thinking’ are mostly alien terms in Saudi Arabia. Although there is much research and practical guidance relating to energy efficiency, Saudi Arabia has a long way to go if it is to be regarded as an energy efficient country in the next five years.

Saudi Arabia certainly faces several serious challenges. Some of the key challenges include its heavy dependence on oil export revenue, the massively growing domestic energy demand, the rapid population growth, and the lack of interest in efficiency and conservation. However, the most important of these for Saudi Arabia are: the reduction of uncontrolled demand, production sustainability, and energy pricing. The challenges faced by Saudi Arabia have been summarized by Waleed Al-Rumaih of the National Saudi Transmission Company as ‘diversity away from oil on the one hand, and optimizing the country’s energy consumption on the another’. He also suggested that ‘one of the big challenges in Saudi Arabia is the need to reduce energy without raising the domestic energy price’. The reality facing Saudi Arabia has been summarized by an energy expert from King Abdullah City for Atomic and Renewable Energy (K.A.CARE) in the following: ‘The energy landscape in Saudi Arabia is characterized with reactionism; slow to move, lack of leadership and a continuous gap between where we ought to be and where we are.’

## Important first initiatives

Regarding what is currently happening in relation to energy efficiency in the Kingdom, some important policy initiatives were introduced last year to reduce domestic consumption. These policies tended to focus on installing insulation, and adapting air conditioners and other household electrical appliances. In 2010, the Ministry of Water and Electricity began considering thermal insulation systems. A new set of regulations is now being



implemented and the Ministry of Water and Electricity has announced that it will not issue building licences for new buildings unless they have been installed with thermal insulators.

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In 2013, the Ministry of Commerce and Industry and the Saudi Energy Efficiency Centre (SEEC) focused on air conditioning use, as air conditioners consume 70 per cent of all electricity production in Saudi Arabia (partly due to the fact that local air conditioners have a low energy efficiency ratio). This focus is likely to broaden out to all electrical appliances in 2015. However, there is a major concern that when an SEEC team tries to investigate the extent of energy efficiency awareness among Saudis in Riyadh, they tend to find that most Saudis are unaware of the energy efficiency poster campaign on air conditioners and other home appliances. This illustrates the fact that even with government efforts to reduce domestic consumption, consumers still do not understand the main aim of the energy efficiency campaign. Furthermore, air conditioner traders are selling low-efficiency ACs at lower prices and thus their sales are rising. Such activity, largely resulting from lack of awareness, is illegal.

Introducing energy efficiency measures will help policy makers and energy planners to distribute more appropriate amounts of energy, thereby helping to reduce unnecessary energy waste; this will ensure energy is utilized in shorter bursts during peak times, rather than nonstop.

Whilst the benefits of using renewable energy cannot be disputed, it is unlikely that renewable energies will be used on a large scale in the Kingdom of Saudi Arabia in the near future, due to the absence of a clear institutional and legal framework. However, there is mounting pressure on the government to enhance its efforts to transform Saudi society from being knowledge-poor in relation to energy use to becoming knowledge-based, by following some crucial steps. Firstly, because energy efficiency remains a poorly understood concept in Saudi Arabia, there is an urgent need for an effective approach to the task of increasing public awareness of the need to use energy more efficiently. This approach can only be achieved through education via a curriculum that can address people of all ages about the concept of energy efficiency. Whilst developing such a curriculum will take time, more basic measures can be introduced in the meantime. These measures should include: attempting to change the nation’s behaviour, creating awareness about energy efficiency, improving the nation’s understanding of energy security, subsidy reform, and, most importantly, correcting the misconception that Saudi Arabia’s oil resources are infinite. Such measures can be kick started by launching country-wide campaigns.

**Achieving a sustainable energy mix**

Currently, Saudi Arabia’s main aim is to achieve a sustainable energy mix (a combination of solar, wind, and nuclear power) by 2030. With a sustainable energy mix, the Kingdom’s economic priorities should focus on moving from a natural resources-based market structure to a knowledge-based structure. Although Saudi Arabia is currently lagging in many areas – such as energy efficiency, environmental

concerns, and efficient transportation – there is something positive to take from this: the Kingdom has an opportunity to duplicate developed countries’ best practices and use them to solve its problems. As such, Saudi Arabia does not need to ‘reinvent the wheel’. Innovative ideas are there for the taking, and the country can tailor such ideas to its own circumstances.

It is worth pointing out that increasing public awareness of energy consumption and environmental issues is one of the reasons why energy consumption in many countries has decreased. For example, the UK has seen a dramatic change in energy consumption by the average household. With this in mind, it is essential that Saudi Arabia begins drawing up serious solutions designed to raise awareness of energy efficiency which will ultimately reduce domestic energy consumption. It is unfortunate that this Islamic country has been unable to follow the Prophet Muhammad’s (Peace be upon him) simplest commands, such as ‘Conserve water, even if you reside at the edge of a high-flowing river’.

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The rate of energy consumption growth in the country has exceeded that of most other countries and this is threatening the future of the Saudi Arabian economy. The Kingdom must plan for tomorrow today, and the first step will require a reform of domestic energy prices. Whilst it may appear desirable to allow the Saudi government to continue letting its people live in luxury, it is essential to ensure the safety and comfort of future generations.

