

A 100 percent greener outlook for cities in Turkey

December 23 2015, by Sorina Buzatu

Endowed with renewable resources, such as wind, sun, geothermal and hydro, the country is still relying on coal and other fossil fuels to produce its energy. Forward-looking public policies could make the difference and lead to sustainable and less polluted urban areas in the coming decades

Turkey's energy production for [urban areas](#) could be 100% based on renewables within 30 years if appropriate public policy is implemented.

This is the opinion of Baha Kuban, a senior consultant at Demir Enerji in Istanbul, an engineering firm specialising in energy efficiency solutions and management. Baha has been actively involved in policy issues on renewable energy, particularly solar electricity, and is the founding member of Turkey's National Photovoltaic Platform.

Energy efficiency is a global challenge and therefore concerns Turkey. Could you describe the situation in the country's towns and cities in this respect?

A peculiarity of Turkey's cities is their very high demographic growth rate: between 200 and 250,000 people migrate to Istanbul from the countryside every year. This is a relatively recent phenomenon, which started in the eighties. About 80% of the Turkish population is now living in cities.

City councils are struggling to provide even basic services such as drinking water and waste collection. Energy efficiency in buildings needs a lot of cash and does not rank high on council agendas.

Energy supply is regulated in a specific way in Turkey. Energy assets were privatised in the mid-nineties. Supply was the prerogative of the central government, and only recently has local government been involved in energy production and distribution. However central government remains in charge of energy efficiency policies, regulates the sector and gives incentives to stakeholders in the field.

Most of our energy efficiency laws were drafted and implemented thanks to our candidacy to the European Union. With 90% of its energy coming from coal and natural gas, Turkey is over-reliant on [fossil fuels](#).

Some inroads have been made in wind, but nothing compared to the country's potential. Turkey is fantastically endowed with renewable energy resources. According to many studies, energy production in Turkey could almost be 100 % based on renewables: [wind](#), solar, geothermal, hydro. This goal could be reached within 30 years, but of course, it depends on government policy.

The use of solar collectors is very widespread in Turkey. The existing local manufacturing industry keeps the prices down. Our installation capacity for solar collectors ranks second in the world, after China.

What are the difficulties and barriers when attempting to transform cities into low energy and zero emissions urban areas?

A huge problem is that city councils are mainly concerned with meeting the basic needs of a growing population. Opportunities do, however,

exist. For instance, the urban transformation law enables local government to demolish old and dangerous buildings in cities, and build more energy-efficient districts instead. This is a very useful mechanism for making the current urban building stock more sustainable in terms of energy consumption.

The flipside is the risk of it becoming a source of income for local government and building contractors. This is because they may choose to focus on demolishing buildings in the more affluent districts, and on using public real estate and valuable green belts to build new up-market areas. But overall, the urban transformation plan is a positive move and it has strong backing from the financial sector.

Do you think that citizens are ready to fully cooperate towards the goal of reducing carbon emissions and energy consumption?

It's really hard to say, as citizens are not homogenous! Middle classes with high disposable incomes are enjoying the benefits of the consumer society and they are the ones filling the shopping centres. They don't want to hear about climate change and are impervious to the rhetoric.

The use of cars is encouraged as the government charges a high price at the pump, and reaps over 60% in tax. Overall, the economic dynamics are not oriented towards developing low carbon solutions. We need to show both local government and citizens that living in a city doesn't only mean driving a car, but also walking in a nice green pedestrian area. It is a difficult task to fulfil and there is a cultural aspect to it. I don't think it will change before the next generation.

Do you foresee Turkey's clean renewable sources of energy gradually replacing fossil fuels?

Unfortunately I don't. Government policy is more inclined to use fossil fuels, meaning it wants us to rely more on local resources such as coal, instead of petroleum or natural gas which have to be imported. The government also plans to build 80 more [coal](#) plants, which are huge carbon emitters.

To counteract this, city councils would do well to set up their own companies to produce energy from [renewable resources](#). Central heating using biomass or solar-assisted cooling could be interesting solutions, especially during summer, when there are power disruptions due to the excessive use of the air conditioning systems.

Waste is not properly collected, but there are many cities where this resource is used for [energy production](#). Bursa, Antalya, Izmir and Istanbul are among them. So, opportunities abound, the cost of renewables is decreasing and it is basically a matter of vision. We need a pioneering local government to break all the rules and start building low carbon energy supply systems for their urban populations.

What are the infrastructure challenges of Turkey's cities?

Infrastructure is a big black hole in Turkey; it is the prerogative of the central government. These are big projects that need a lot of money, but the finances can be leveraged. Unfortunately, local government is not visionary enough to provide low carbon infrastructure.

They are on the lookout for infrastructure solutions but these are from another age. If they could only look a bit further, then they would realise many energy and cost-efficient solutions are actually within reach.

What means would you plan in order to encourage

investors to put their money into innovative technologies for developing smart cities?

Public-private partnerships have only worked in the construction sector so far. In other areas, such as transport or low carbon infrastructure, they don't exist. There is a need for new regulations to shape the low carbon future in the construction sector in the long term.

You are working on two European smart city projects, CItYFiED and REMOURBAN. What bearing will they have on how Turkey turns its cities into smart cities of the future?

We are learning a lot from these two projects. We have come across many different problems - financial, technical and legal. The best practices we can use in the future are mainly related to reducing energy consumption and using renewables.

The heating systems using waste as well as the regional and district heating installations are quite beneficial. Renewable sources, especially biomass, could be used in the building heating architecture. We need more regional and local planning for heating options. We also want to implement the REMOURBAN project's long-term vision about mass transit in cities, in order to reduce the number of trips taken and distances travelled by citizens.

Photovoltaic energy is little used in Turkey, but I hope that, via our demo site, we will be able to highlight the sustainability of this measure along with the benefits of power produced at competitive costs.

What do you expect from these projects?

I expect to technically demonstrate the feasibility of low carbon measures for the building stock and the efficiency of integrating more than one source of energy supply. I also hope that local government will be able to provide support and manage the [energy](#) flows, for the benefit of the population.

Furthermore, the social aspects of working in international teams and managing large complex projects will offer synergies and the opportunity to learn from one another. It could also help empower local government when drawing up valuable plans for the future.

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