OLIVIER APPERT

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I was asked to discuss biogas, which is one part of the solution to the climate change issue. Most of the attention today is focused on solar and wind, thanks to their spectacular expansion and cost reduction. However, if you step back and consider the whole energy system, and you will find another picture. Modern bioenergy is playing the dominant role. Why? It is simple. Electricity only accounts for less than 20% of total energy consumption worldwide, and bioenergy is the only renewable source that can provide energy for all end use.

The contribution of modern bioenergy is particularly important in heat. Two-thirds of that heat goes to industrial applications and the rest is consumed in buildings, with a very small remaining fraction in agriculture. As a result, at the end of 2017, modern bioenergy accounted for half of renewable energy consumption. This is as much as hydropower, wind, solar, and all other renewables combined and four times the amount of wind and solar combined.

I wish to underline that all these numbers concern just modern energy and exclude traditional use of biomass, for example for cooking in developing countries which is causing indoor air pollution and premature deaths. The dominant role of modern bioenergy is often overlooked. This is why we consider it a “blind spot”, the overlooked giant of renewables. This is not to undermine the role of electricity of course. It is just that bioenergy has many more competing options.

In order to reach a sustainable development scenario, the IEA considers that renewables would contribute to one-third of greenhouse gas emission reductions compared to the New Policy Scenario. You are familiar with this figure. The bioenergy contribution will represent 7.5% of the gap by 2040. You may also note that bioenergy can be combined with CCUS in order to provide negative emissions, and I hope that we will come back during the debate on the issue of CCS and CCUS.

I will focus now on biomethane, as it will play an important role. In just seven years, biomethane production has increased by a factor of seven. Most of the growth has occurred in Europe, but every region is participating in the global growth. As of 2017, 720 biomethane production plans are in operation in the world, compared to only 173 in 2010. They are spread over 34 countries and there are 1,020 projects to upgrade operational plants, which are under construction or planned.

As I said, European production is booming. Europe represents two-thirds of the current production. Germany and the UK are the leaders, but this sector is booming everywhere. According to the report Gas for Climate, production may reach 95 BCMs in 2050, of which 62 are from anaerobic digestion. Outside Europe, biomethane is developing very rapidly in the United States, driven by support to advanced bio-fuel. It is a way to reduce methane emissions from waste. This development is strongly supported by regulations, renewable fuel standards, volume obligations and certificate markets. 82 projects are under construction or planed at this time. You have to note that the US is the world leader for bio natural gas vehicles and bio LNG.

China will become the giant as well in the biomethane market. In China, this market is just emerging, with only 40 units at the end of 2017. But in 2015, China launched 200 large-scale projects. This policy aims at ensuring security of gas supply, fighting against local pollution and developing rural areas. A three-phase policy of industrialization has been decided, with an objective of producing 30 BCMs by 2030, based on financial incentives and green gas quotas.

Let us move to the conclusion. In summary, there are promising developments all around the world. In Europe, the use of biomethane is spreading all across the continent, with a huge potential of 95 BCMs in 2050. In North America, there has been surging production in the recent period, propelling the US to the first rank in the world for the use of biomethane in vehicles. There is a significant potential of 30-40 BCMs, mostly from waste.

In Asia, we have to note the recent adoption of the biogas upgrading technology by China and India. This is a game changer. I refer to the objective of 30 BCMs for China in 2030. It is less clear for India. There are also projects elsewhere. Developments in biomethane are linked in every country to subsidies, to cost reduction thanks to industrialization, and also to sustainable resources. Thank you.

Nobuo TANAKA

Thank you, Olivier. Why did you pick biomethane this time? Is it because it is ignored as such?

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It is becoming very popular in Europe, for example. In the context of zero carbon, carbon neutrality in 2050, the share of natural gas in the energy mix is challenged. One solution is to develop alternatives to fossil fuels: biomethane is one of those.