THE GLOBAL CHALLENGE OF PROVIDING UNIVERSAL ACCESS TO ELECTRICITY

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The challenge of securing access to affordable, reliable, sustainable and modern energy is one of the world's most crucial imperatives. Some considerable progress has been made since we at the International Energy Agency have been tracking the situation, over the span of two decades. In 2017, the number of people without electricity access fell below 1 billion for the first time, with an additional 99 million people gaining access in that year alone. This is testament to strong policy action, particularly across Asia, where over 900 million people have gained access to electricity since the turn of the century — raising access rates from 67 per cent to 91 per cent. India's progress, underpinned by a clear national strategy of village electrification, is notable, alone accounting for over 60 per cent of Asia's progress in electricity access. Progress has also been strong across Southeast Asia, where over 170 million people have gained access to electricity since 2000. The majority of the 65 million people that remain without access are concentrated in Indonesia, the Philippines, Myanmar and Cambodia; all these governments are taking serious measures to improve the situation, and we project that they will successfully reach their target of universal access to electricity by 2030.

One region that remains a concern on this issue is sub-Saharan Africa. While 200 million have gained access to electricity here since 2000, this number is less than the rate of overall population increase, and there remain 600 million people across the region who are unconnected. Furthermore, the efforts to improve the situation have been somewhat uneven, with around 60 per cent of the progress since 2011 accounted for by just four countries (Kenya, Ethiopia, Tanzania and Nigeria).

While no two countries or regions are entirely the same, the lessons from one can be extremely useful to another. Electrification initiatives in Indonesia, for example, show the need to adopt a pragmatic approach to technology that can be deployed under particular circumstances. In densely populated areas, extending grid access is often the least-costly approach, but in more sparsely populated areas, like Papua, a mixture of off-grid and mini-grid systems can prove highly cost effective. Furthermore, the ongoing reduction in the cost of renewables-based electricity generation means that many of these mini-grid and off-grid systems can be fed with either solar PV or wind generated electricity. In Indonesia, for example, small-scale renewables provide the least-costly options for over one-third of the connections necessary to bring the country towards universal access. The challenge in Africa will be similar, in that it will involve ensuring access for the rapidly urbanising population, while at the same time bringing new connections to more remote parts of the continent, again necessitating a pragmatic all-fuels, all-technology approach to the problem. Without a significant increase in efforts in sub-Saharan Africa, there will still be 600 million people without electricity access in 2040 (despite a doubling in the number of those with access). If the world wants to stand a chance of achieving Sustainable Development Goal 7, this needs to be remedied.

The issue of access is not restricted to electricity; over 1.7 billion households across the world have electricity supply, but still rely on polluting sources for cooking. Nearly 2.7 billion people still lack access to clean cooking facilities, instead relying on biomass, coal or kerosene as their primary cooking fuel. This takes a tremendous toll on health, with the negative implications weighing heavily particularly on women and girls, who are often responsible for cooking. Encouragingly, in the last year, we have seen for the first time a gradual decrease in the number of people worldwide without clean cooking access. In Asia, more than 525 million people have gained access to clean cooking since 2011. This is largely thanks to aggressive government initiatives, for example in India, where there was a 14 percentage point reduction in the share of the population relying on biomass and kerosene between 2011 and 2015. Since 2015, 50 million additional free LPG connections have been made through the PMUY scheme. In China, the build-out of residential natural gas infrastructure has helped reduce the use of biomass and kerosene, and the access rate has reached over 70 per cent, natural gas.

As with electricity access, sub-Saharan Africa poses the most acute challenge. Less than 20 per cent of the population has access to clean cooking, with around 900 million people reliant on gathering biomass as a fuel. Furthermore, strong population growth means that, unlike in Asia, the number of people lacking access has actually grown by 275 million since 2000. Apart from the toll on health, this has led to significant deforestation, with the region losing 13 per cent of its forests between 1990 and 2015. There are, however, instances that provide hope. 68 million people gained access since 2000, mostly as a results of initiatives in Ethiopia, Ghana, Kenya, Nigeria, South Africa and Sudan. But much more needs to be done, as the current trajectory of plans and policies means that by 2040 there will remain 1.8 billion people across the world without access to clean cooking, with the biggest burden falling on Africa and Asia. ■