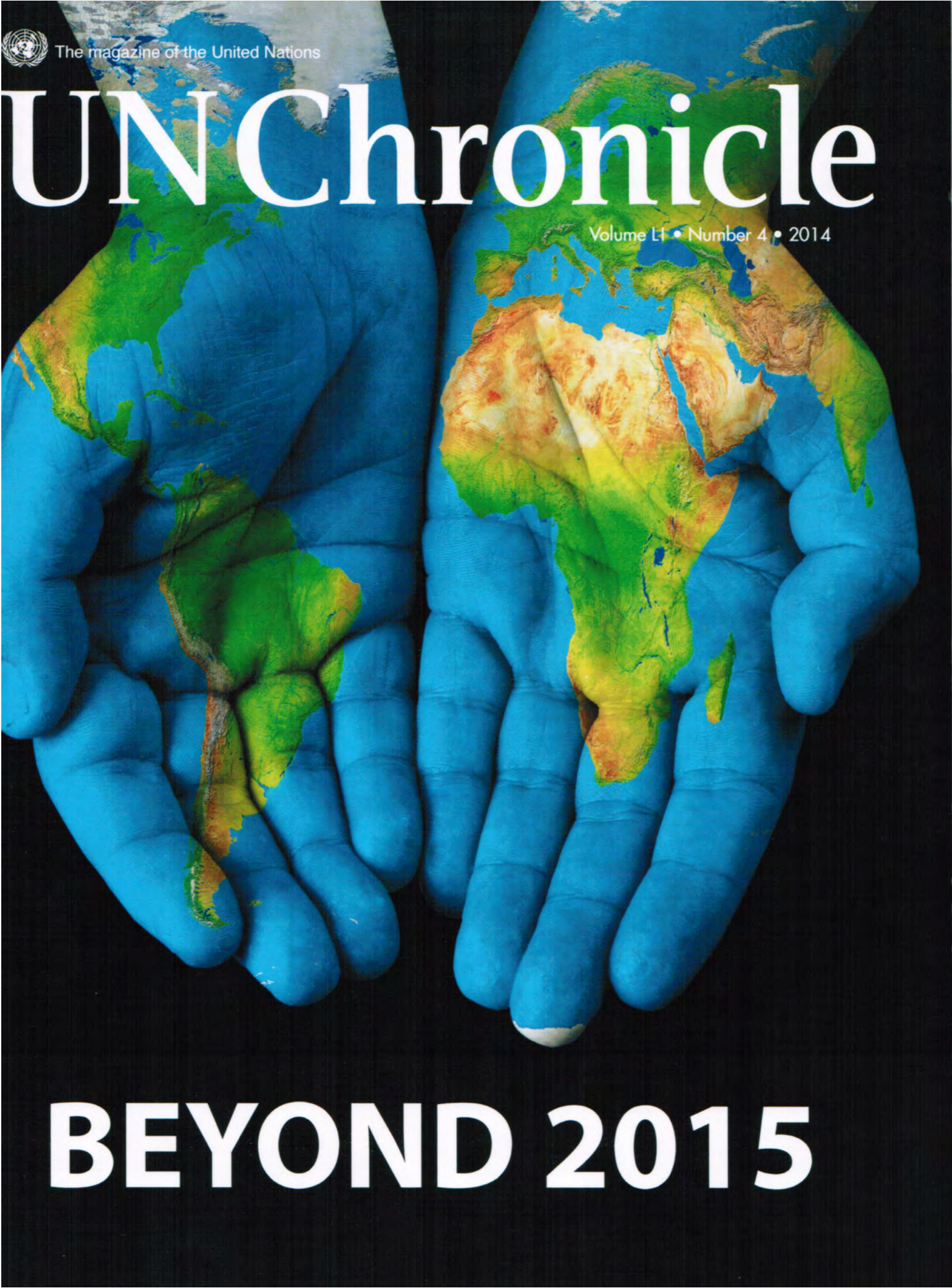

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GOAL 7

Ensure access to affordable, reliable, sustainable and modern energy for all

By JIANGUO WU and TONG WU

The sustainable development goals (SDGs) proposed by the Open Working Group of the General Assembly of the United Nations recognize the importance of the natural environment and its resources to human well-being. As a whole, it is definitely a worthy charter for the twenty-first century, as it addresses the diverse challenges that we face as a global community. SDG 7—to "ensure access to affordable, reliable, sustainable and modern energy for all"—is a challenge confronting every country, that touches everyone. To understand the necessity of meeting this goal, and what is required to do so, we should unpack the statement of the goal itself. The four dimensions of SDG 7 are affordability, reliability, sustainability and modernity. These different dimensions are not mutually exclusive. They overlap, and in some cases even entail each other.

Consider what it means to have access to affordable energy. The heterogeneity of energy use across the world is due largely to different natural resource endowments and purchasing power. For example, a country with large coal deposits will likely make wide use of this resource to industrialize its economy. The people living within this country will likely use it as the primary means of power generation. On the other hand, people living in places without ready stocks of fossil fuels may rely on more primitive methods of combustion, such as wood fibers or perhaps even animal dungs. Indeed, this is the condition that prevailed for the vast majority of humankind throughout its history, and continues to be the condition for many parts of the developing world. For instance, approximately 2.7 billion people (about 40 per cent of the world's population) now rely on traditional biomass fuels for cooking.[1] Such low-quality fuels can be a major source of indoor air pollution. Even with the expansion of energy accessibility and economic development, the annual death toll from indoor air pollution will still be over 1.5 million people—a higher rate than that from both malaria and tuberculosis.[2]

As globalization continues to bind the world in deeper networks of trade, countries can augment and diversify their energy endowments by import. However, if the development level of a country is low and the costs of energy—which are increasingly determined by global financial forces—are high, then people will lack access to energy no matter how large or diverse its country's endowment. Thus, an essential condition of affordability is raising income levels (and hence purchasing power) and controlling the impacts that impersonal economic forces operating at global levels have on the costs that people face on an everyday basis.

Affordability is meaningless, however, if energy provision is unreliable. In many parts of the developing world,

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energy sources are often scarce and their supply intermittent. Today, 20 per cent of the world's population still lacks access to electricity, and a larger share suffers from persistent power failures.[3] In 2012, the massive, nationwide blackout that struck India affected nearly 700 million people, paralyzing transportation and communication systems and causing an unknown number of fatalities.[4] This disaster was caused not just by supply issues, but also by mismanagement and an underdeveloped energy infrastructure. Thus, basic economic activity depends on a steady supply, robust governance, and an efficient and stable distribution system. There are multiple socioeconomic dimensions of energy reliability.

Electricity, automated transportation and information technology are essential to economic development. They are also basic features of modern society, and thus energy sources and systems that meet these needs reliably and affordably can be considered as "modern". Population growth will continue in India, sub-Saharan Africa, and other parts of the developing world. Per capita economic consumption will also increase, creating much greater demand for the services described above, and consequently for access to modern energy. Over the next quarter century, about 90 per cent of the growth in energy demand will come from countries that are not members of the Organisation for Economic Co-operation and Development (OECD), i.e., countries outside of the rich Western economies and Japan.[5] Meeting this rising wave of energy demand will be one of the paramount challenges of the twenty-first century, and is a reason why it occupies such a central place in the SDGs. It also brings us to the final dimension of SDG 7: sustainability.

Energy should generate a consistent stream of power to meet basic human needs, maintain and improve social functioning, and advance living standards. It should also fulfill these functions as sustainably as possible—that is to say, the power generated by energy use should be much greater than the resulting waste and pollution. All sustainable energy must be modern, although not all forms of modern energy are sustainable. Coal is perhaps the most important case in point. Historically, coal has been indispensable to industrialization and the advancement of human well-being. If more of the world's people enjoy previously unimaginable living standards today, it is in large part because of coal. Offsetting its many virtues—for instance, abundance, wide distribution, and ease of use—is a long list of serious problems, however. In an age of population growth and environmental decline, this list is still growing.

Today, coal still provides about 40 per cent of the world's electricity and nearly the same fraction of global carbon emissions.[6] Coal is also inefficient, with a low mass-to-energy ratio, and creates enormous pollution. Thus, coal is neither sustainable at the global scale because of its contribution to anthropogenic climate change, nor at the local scale because it is a threat to public health and ecological conditions (in addition to the polluting by-products of combustion, the process of coal mining creates myriad environmental problems). Given the scale of the use of coal, and the emergence of a global economy powered largely by fossil fuels, what can be done?

These are challenges that require a pragmatic, multifaceted approach. Solutions need to be found at the global scale, where Governments and agencies must work together. International climate change agreements are the most visible fruits of such efforts. The SDGs have also helped set the tenor for cooperation and contributed to an emerging consensus on priorities. In terms of policies, the transfer of clean energy technologies to developing countries is an important example. Indeed, international climate change agreements—such as the clean development mechanism (CDM)—explicitly provide for such transfers. This is not enough, however. Solutions must also be developed locally. There is evidence that benefits from CDM, while necessary and net-positive generally, do not always reach the local level, particularly in impoverished rural areas.[7] Development should be sensitive to local conditions, and identify unintended consequences of energy policies. The heedless pursuit of biofuels at the global and regional levels may result in unintended yet severe environmental degradation. The countless acres of land deforested for palm oil undermine local well-being, and provide a stark reminder of the complexity of the energy problems that we face.

Access to affordable, reliable, sustainable and modern energy is integral to global development in the twenty-first century. Not all the solutions needed to meet this challenge are yet available, and those that are may not be apparent. Figuring out these solutions and aligning them across scales will be difficult. Yet the task is achievable if international organizations have sufficient vision, if Governments can work together, and if communities and individuals are offered the right incentives and the necessary means. SDG 7 is, at the very least, an important step in that direction. unc

Notes

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SUSTAINABLE DEVELOPMENT GOALS
AS PROPOSED BY THE OPEN WORKING GROUP OF THE GENERAL ASSEMBLY

Goal 1. End poverty in all its forms everywhere

Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Goal 3. Ensure healthy lives and promote well-being for all at all ages

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal 5. Achieve gender equality and empower all women and girls

Goal 6. Ensure availability and sustainable management of water and sanitation for all

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal 10. Reduce inequality within and among countries

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 12. Ensure sustainable consumption and production patterns

Goal 13. Take urgent action to combat climate change and its impacts

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

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