

**UNITED NATIONS COMMISSION ON SCIENCE AND TECHNOLOGY  
FOR DEVELOPMENT (CSTD), twenty-first session  
Geneva, 14-18 May 2018**

**Priority theme 1 on the role of science, technology and innovation in  
increasing substantially the share of renewable energy by 2030**

Statement submitted by

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**Tuesday, 15 May 2018**

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## Slide 1

- The key to sustainable development in the least developed countries (LDCs) and to their reaching the Sustainable Development Goals is the structural transformation of their economies. Energy is an important input into most production processes and therefore plays a key role as an enabler of the process of structural transformation, particularly electricity when put to productive uses.
- Least developed countries cannot achieve structural transformation if modern energy is not channeled to productive sectors and to the building of productive capacities. Yet this basic enabler of economic development – access to modern energy – remains an important “missing link” which hampers the development of LDCs.

- For this reason UNCTAD has dedicated *The Least Developed Countries Report 2017* to energy. The Report has the subtitle of “Transformational energy access”.
- The Report shows that at present LDC rely to a large extent on traditional biomass, which generates 59% of these countries’ total primary energy supply. It is used mainly domestically for cooking and heating. Renewable energy, by contrast, contributes only 9% of total primary energy supply. This energy mix brings serious adverse personal and environmental consequences to LDC populations. Moreover, it hampers the capacity of LDCs to engage in the structural transformation of their economy.

## Slide 2

- The household sector accounts for two thirds of energy consumption in these countries. This reflects the weak development of productive capacities in the LDCs, which entail a relatively low demand stemming from productive firms. In developed countries, by contrast, the household sector generates less than 20 per cent of energy consumption, with the bulk of demand stemming from productive and community users.

### Slide 3

- ✓ • The deficits in LDC access to energy are rooted in the installed supply capacity of energy in LDCs. At present the electricity generation capacity per capita in the least developed countries is only one fiftieth of that in developed countries.
- ✓ • The low generating capacity has serious adverse consequences for the economic performance and social outcomes of LDCs.
- ✓ • Across LDCs as a whole, 42 per cent of enterprises identify electricity supply as a major constraint. Power outages cost LDC companies on average 7 per cent of the value of their sales.

## Slide 4

- Yet electricity for productive uses can transform the economies of LDCs. It can increase productivity, and allow new processes, new products, the deployment of production technologies and the emergence of new economic sectors. These are all features of the process of structural transformation of LDC economies.
- Energy plays a fundamental role in productivity growth. The introduction and scale-up of electrical energy can strongly enhance the productivity of agriculture, the sector which employs almost two thirds of the LDC labour force. Access to irrigation through electric pumps, for instance, can reduce the dependence of LDCs on rain-fed agriculture and lessen their vulnerability to weather and climatic shocks. The availability of electricity can also allow the establishment of the cold chain, which strongly reduces post-harvest losses.

Thereby, it raises agricultural labour productivity and rural labour earnings.

- SDG 7 foresees ensuring “access to affordable, reliable, sustainable and modern energy for all”. This is usually understood as granting universal access to households. However, in order to reach the SDGs, access to energy needs to be ensured not only to households, but also to economic producers in agriculture, industry and services, as well as to public and community spaces such as streets, schools, hospitals, etc. These institutions need energy – especially electricity – that is affordable, efficient, reliable, accessible and available at the required scale. Such access to energy will be an enabler for several of the other SDGs.

## Slide 5

- Productive use of electricity can also help to provide the demand needed for investments in electricity infrastructure to be viable. This operates in two ways. First, the expansion of commercial and industrial firms creates electricity demand which is not only large-scale, but also solvent, given firms' capacity to pay for modern energy. Second, the expansion of productive activities which leads to structural transformation generates additional employment and, hence, additional demand for electricity. This again helps make additional investment in the energy sector viable.
- This two-way relationship between energy use and structural transformation – which the Report terms the **energy-transformation nexus** – is central to sustainable development. The twin pursuit of structural transformation and SDGs in



LDCs will require a truly universal access to energy.

### Slide 6

- Rural economic transformation will hinge on rural communities and on rural firms and farms having access to reliable, affordable, modern and sustainable energy. In national contexts, where extending access to grid in rural areas is cost prohibitive, the best option may be to deploy off-grid solutions such as mini and pico grids, powered by renewable energies. New technologies have rendered these solutions economically viable. LDCs such as Nepal and Senegal have adopted rural electrification programmes, based on renewable energies in that regard.

## Slide 7

- However, the major challenges to the rapid and widespread adoption of renewable energy technologies in LDCs are, first, the high upfront investment cost required by them and, second, access to these new technologies, given that the international community has not yet developed an efficient mechanism of technology transfer to LDCs. ✓
- In order to harness the energy-transformation nexus, LDCs need to adopt a system-wide approach to energy planning and investment. This approach, as articulated in UNCTAD's LDC Report 2017, suggests four priorities for LDCs: ✓
  - First, becoming early followers of new energy technologies;
  - Second, diversifying the power generation mix. In particular, renewable energy technologies and decentralized generation. They offer an unprecedented opportunity to bring ✓

electricity even to the remotest areas. Generation mixes should be based not only on cost effectiveness but should reflect sustainability, inclusivity and structural transformation concerns;

- Third, strengthening grid flexibility and upgrading monitoring and control capabilities;
- Fourth, adopting system-wide approaches to electricity markets including energy efficiency practices and demand-side management.

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