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Regulatory and policy dialogue addressing barriers to improve energy efficiency

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Background paper on overcoming barriers to investing in energy efficiency – conclusions and recommendations¹

Note by the secretariat

I. Background information

1. Energy efficiency is widely viewed as one of the most effective ways to achieve multiple economic, social and environmental benefits and is at a core of making significant progress towards Sustainable Development Goals (SDGs). It is also recognized that significant progress is being made in energy efficiency. However, the improvements are not fast enough to reach the rate necessary for limiting global temperature rise to no more than 2 degrees Celsius (and preferably 1.5 degrees) by 2050 as stated in the Paris Climate Agreement.

2. Increasing amount of investments in energy efficiency are necessary to reach a Sustainable Energy for All (SEforALL) objective of 2.6 percent annual improvement rate of energy efficiency. These investments are increasing globally and have reached over USD 220 billion in 2015, constituting 12 percent of total energy investments. However, they are not

¹ This background paper has been prepared by the ECE secretariat based on the outcomes of research undertaken in the framework of the United Nations Sabbatical Programme by Oleg Dzioubinski at the Copenhagen Centre on Energy Efficiency in close cooperation with Senior Advisor, Vice Chair of the Group of Experts Tim Farrell, other staff members of the Copenhagen Centre on Energy Efficiency, other members of the Bureau of the Group of Experts, staff members of the ECE Sustainable Energy Division, and other energy efficiency experts.

happening on the scale necessary to achieve a breakthrough in energy efficiency improvement (including reaching the SDG7 target 7.3 to double the global rate of improvement in energy efficiency by 2030) and goals of the Paris Agreement.

II. Main objective of the study and brief description of methodology

3. The study looks into barriers to investing in energy efficiency and ways to overcome them. A vast body of research on the topic of energy efficiency investments and barriers that prevent the energy efficiency potential to be fully realized exists. However, it is often the perception of those who work in the field of energy efficiency as a practitioner that may provide additional and valuable insights on the challenges and solutions for overcoming barriers to energy efficiency investments. To obtain this input, a survey that looks into various aspects of the problem was developed and widely distributed among energy efficiency experts representing governments, private sector, financial institutions, international and intergovernmental organizations, non-profit organizations, academia, and independent experts.

4. The United Nations Economic Commission for Europe (ECE) Committee on Sustainable Energy and its Group of Experts on Energy Efficiency have been actively engaged in the regulatory and policy dialogue addressing financial, technical and policy barriers to improve energy efficiency. At its third session in October 2016 in Baku, the Group of Experts supported a policy analysis on overcoming barriers to investing in energy efficiency to be conducted jointly with the Copenhagen Centre on Energy Efficiency.

5. The survey on overcoming barriers to investing in energy efficiency was conducted over the period 10 January -7 February 2017. The survey was posted on the ECE website and sent to the Group of Experts on Energy Efficiency, the Committee on Sustainable Energy, the network of experts of the Copenhagen Centre on Energy Efficiency, networks of other relevant organizations, and to other experts in the areas of energy efficiency and sustainable energy. The survey was available in English and Russian. Based on the responses received and follow-up correspondence and conversations with selected experts, the analysis of barriers to investing in energy efficiency and ways to overcome them has been prepared.

6. The primary geographic focus of the survey is the ECE region comprising its 56 member States. The survey was conducted globally and its results cover also countries outside the ECE region. Total number of valid responses globally is 339 from 85 countries. Of these, 230 responses were received from experts representing 47 ECE member States. Approximately one quarter of respondents are women. Data for individual countries were analyzed when the number of responses per country was eight or higher.

III. Conclusions on the status of energy efficiency financing and barriers to investing in energy efficiency

7. Globally and in the ECE region, there is a high or reasonably high potential for energy efficiency investments. However, this potential in many countries remains largely untapped. There is a significant gap between investment opportunities for energy efficiency and the level of investments in energy efficiency in most of the countries.

8. Most countries in the ECE region have framework legislation for energy efficiency and many have other supporting legislation, programmes and policies. In the sub-region of Western Europe and North America, essentially all components of the regulatory framework are in place and are considered relatively effective but not always providing very strong

support and enabling energy efficiency investments. In other parts of the ECE region, the situation varies. Some countries lack by-laws, norms and standards, and specific programmes and policies.

9. In general, there is a good correlation between the existence of the regulatory framework and how well it supports and enables investments in energy efficiency. For example, Germany possesses strong regulatory framework that ensures strong support for investments. In Azerbaijan and the former Yugoslav Republic of Macedonia, the regulatory framework is considered weak and it provides little support to investments. Belarus, Kazakhstan and Ukraine mostly have regulatory framework in place but the support it provides for energy efficiency investments is not considered strong, particularly in Ukraine.

10. Institutions at the national level responsible for developing and implementing policies that support investments in energy efficiency projects exist in the countries of the ECE region. However assessment of their effectiveness differ among individual countries: strongest in Germany and Switzerland, and weakest in Albania, Azerbaijan, and the former Yugoslav Republic of Macedonia. Outside the ECE region, India and Mexico are viewed as having effective national institutions to promote energy efficiency.

11. Among the various levels of government, national authorities are generally considered to be providing the highest level of support for developing and implementing energy efficiency projects compared to regional (provincial) and local (municipal). A few exceptions include Canada and the United States, where authorities at the provincial and state level respectively are providing more support than the national and local levels. In Ukraine, authorities at the local level are viewed as providing more support than at the national and regional (oblast) levels.

12. International assistance is viewed as moderately effective in increasing the level of energy efficiency investments in most of the countries of South-East Europe, Eastern Europe, the Caucasus, and Central Asia. It is viewed as most effective in Albania, Armenia, Belarus, Croatia, and Ukraine, while in Azerbaijan and the former Yugoslav Republic of Macedonia its effectiveness is assessed relatively low. Among the analyzed countries outside the ECE region, effectiveness of the international assistance is highest in India and Mexico and lowest in Brazil.

13. Financial environment is not very favourable for investments in energy efficiency. Familiarity of financial institutions with financing energy efficiency projects and measures is relatively low in many countries of the world, including developed countries and countries with economies in transition in the ECE region. Financial institutions view financing of energy efficiency projects significantly riskier compared to other types of business projects. Conditions for repayment and servicing energy efficiency loans with savings generated from improved efficiency are considered generally more favourable for projects in the public sector than for projects in the private sector but in most cases they are not too favourable.

14. Generally, the price of energy provides some but often insufficient incentive for improving energy efficiency. However, situation with the energy pricing differs significantly among countries. In the ECE region, it provides a rather strong incentive in Ukraine and Armenia, a moderate incentive in Germany and Albania, and a very weak one in Croatia and Switzerland. Among the selected countries outside the ECE region, the strongest incentive from energy prices is in Brazil and the weakest is in India.

15. Both globally and in the ECE region self-financing remains the most widely used type of financing energy efficiency projects followed by direct financing from public budgets and debt financing. At the same time, situation varies significantly both between and within sub-regions. In the Caucasus and in Ukraine, donor funds is the most important type of financing. In Croatia, the major role is played by Energy Efficiency Funds. Financing through ESCOs is important in North America.

16. Low awareness about the multiple benefits of energy efficiency projects is viewed as the main barrier to increasing investment and financing flows to energy efficiency projects. Next important factors are lack of understanding of energy efficiency financing by banks and other financial institutions; administrative barriers and bureaucracy; and low energy prices. Some countries have identified one or two barriers as particularly important: in Azerbaijan, it is lack of specific policies and legislation and low energy prices; in Belarus – difficulties with obtaining commercial loans and other types of financing; in Kazakhstan and Switzerland – low energy prices; and in Canada and Germany – low awareness about the multiple benefits of energy efficiency projects.

17. Tax incentives and low-interest loans for energy efficiency projects are viewed as the most important factors that can lead to increasing energy efficiency project investment viability in particular countries. They are followed by stricter energy efficiency standards; training and awareness programmes; improved legislation; and de-risking of investments through Government support programmes. Specific factors are identified in particular countries as the main ones: in Armenia, Belarus, Croatia, and Ukraine – low-interest loans for energy efficiency projects; in Azerbaijan – improved legislation; in Kazakhstan – improved access to commercial financing; in Germany – tax incentives; in the former Yugoslav Republic of Macedonia, two main factors are tax incentives and implementation of energy management systems in industry; and in Switzerland also two main factors – implementation of energy management systems in industry and carbon pricing.

IV. Recommendations for overcoming barriers to investing in energy efficiency

18. Countries should pursue higher effectiveness of the existing regulatory framework, with an emphasis on further developing, improving, implementing and enforcing secondary legislation, norms and standards, and targeted programmes and policies for energy efficiency. Those countries where certain pieces of regulatory framework are missing should consider adopting them taking advantage of experience of other countries where they exist and are successfully applied.

19. Countries should provide necessary resources to specialized institutions responsible for developing and implementing policies that support investments in energy efficiency projects. Such institutions have been shown in many cases to be effective in promoting such investments.

20. International assistance and use of donor funds for energy efficiency should continue in close cooperation with recipient countries to ensure that they are used for leveraging rather than crowding out private investments, improve knowledge of domestic financial sector in energy efficiency financing, and take into consideration multiple benefits of energy efficiency.

21. Significant efforts are required to make financial institutions more aware of energy efficiency financing and reduce perception of their high risk. Specific national policies are desirable for this to happen.

22. As there are no one-size-fits-all solutions, countries should take into account their specific circumstances when implementing policies and measures to increase investment in energy efficiency. However, using existing successful experience from other countries can be beneficial by applying best practices and avoiding mistakes.

23. Price of energy can become an important driver for energy efficiency investment. Countries where energy prices do not provide a sufficient incentive for energy efficiency should take this into consideration.

24. Raising awareness about the multiple benefits of energy efficiency projects can be recommended as one of the most effective measures to increase investment and financing flows to energy efficiency projects. This may require developing a system of assigning value to non-economic benefits, so that it can be properly taken into account when making investment decisions.

25. In the short and medium term, particularly in the countries with economies in transition, tax incentives and low-interest loans for energy efficiency projects should be considered as the most appropriate ways to increasing energy efficiency project investment viability.
