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Session IV:

Public-private partnership (PPP) for development and promotion of sustainable energy solutions and clean technologies

Keynote speech

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Colleagues, ladies and gentlemen, good morning!

It is a pleasure for me to be here with you today, making the opening remarks at this session on “Public-private partnership for development and promotion of sustainable energy solutions and clean technologies”.

One of the challenges that we face in any discussion of “Public-Private Partnerships” is that there is a certain confusion about what exactly we mean by the term. It is very important to remind ourselves that the term PPP can cover many different forms of partnership. For this reason, I would like to use my remarks to review the most important types of PPPs and how they might be used in the case of sustainable energy solutions and clean technologies. I hope that this will clarify the ensuing discussions.

Let me start with the type of PPP which is briefly described in the agenda. I think the description given there encapsulates well what it is that we are talking about: voluntary, collaborative relationships between various parties, which can be both public and private, in which the parties agree to work together to implement a project or programme and, as mutually agreed, to share risks and responsibilities, resources and benefits of implementation. The parties can include government, business and industry, academia, non-governmental and intergovernmental organizations.

Why should these kinds of PPPs be pursued? What is their advantage over other, more traditional approaches to project and programme implementation? One answer was clearly given in the SDG document, where the signatories declared that, [quote] “The scale and ambition of the new Agenda requires a revitalized Global Partnership to ensure its implementation. ... This Partnership ... will facilitate an intensive global engagement in support of implementation of all the Goals and targets, bringing together Governments, the private sector, civil society, the United Nations system and other actors and mobilizing all available resources.” [unquote] This message is taken up again in Goal 17, “Strengthen the means of implementation and revitalize the global partnership for sustainable development”. In brief, the challenges highlighted by the SDGs are of such scale, of such magnitude, of such complexity, that only a joint cooperative effort, bringing together all the actors, can hope to overcome them.

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This message is certainly being taken up by the UN System as well as by bilateral development aid agencies; these types of PPP are becoming increasingly popular in development aid projects and programmes. On the one hand, development agencies see the skills and specialized knowledge which private partners can bring to a project or programme, as well as their financial inputs (in cash or in kind), as increasing the impact and value added of development aid and helping to implement the SDGs. On the other hand, private partners recognize that development agencies – both bilateral and multilateral – can have access and connections in a country which it is difficult for them to have. The agencies can also better ensure that their inputs maximize the overall development impacts for a country. And finally, private partners sometimes prefer to work with development agencies because of the better “brand value” this gives the project in the eyes of their stakeholders.

As a development agency, UNIDO is involved, and has been involved for at least twenty years, in such PPP projects. One, which I happen to have been involved in when I was UNIDO’s Regional Director in Bangkok, was a PPP between the Cambodian Government, UNIDO, KOICA, and Samsung. Its aim was to create employment opportunities among unemployed youth in Cambodia in the recycling of mobile phones, supporting them to start small businesses in this new sector. Samsung brought its technical expertise in the recycling of mobile phones to the project, UNIDO brought its skills and knowledge in designing and implementing a technical skills development and entrepreneurship development project, KOICA brought funding – and had brokered the initial agreement between UNIDO and Samsung – and the Government of Cambodia ensured that the legislative and regulatory context was conducive to this kind of economic activity in the future. I would say that this is a fairly typical PPP for development aid projects, and this kind of structure could be used for any development aid project or programme – actually, any project or programme – promoting sustainable energy solutions or clean technologies.

The growing realization that many of the world’s challenges are multi-faceted, have multiple stakeholders, requiring therefore multiple inputs from multiple actors means that countries are also bringing these kinds of PPPs to bear on national challenges. So, for instance, city-level PPPs are being used, which bring together the skills, knowledge and financial support of a whole spectrum of public and private partners to work cooperatively on such challenges as sustainable transport or smart cities.

What makes this kind of PPP work? Well, as mentioned in the report “Engaging with the Private Sector in the Post-2015 Agenda”, prepared by UNIDO and the UN Compact in 2014, [quote] “transparency, trust and dialogue are extremely important to achieve a successful partnership. Partners must also show what they expect in return and make their own objectives clear within the partnership.” [unquote]

Let me now turn to a second broad type of PPP, which we find used in the area of research and development, R&D. The use of public private partnerships in the field of R&D is certainly not new. For many decades now, certain types of R&D have benefited from formalized agreements between private parties – universities, research institutions, as well as the industrial end users of the expected innovations – and public parties – Ministries of Education, Defense, Science and Technology, and so on.

Again, why use PPPs to support R&D rather than use other, more traditional, approaches? The main reason often given is that a PPP model can normally drive R&D faster and further than might otherwise be the case. This is seen to be particularly relevant for R&D which is considered of strategic importance to a country and/or invested with a certain urgency. PPPs can do this because they can more successfully overcome one of the major hurdles in all R&D: how to successfully navigate the so-called “valley of death”, that period which lies between the fundamental R&D required to initiate an innovation, and which is almost always funded with public funds, and applied R&D, when promising innovations are developed further into commercial applications, and which is almost always funded by private parties. Many promising innovations die after the initial R&D because governments believe that the R&D risks should now be shouldered by the private sector, while the private sector views these innovations as still too risky. PPPs give a mechanism which allows this zone of risk to be successfully traversed. To the extent that sustainable energy solutions, or more broadly clean technologies, are seen to be of strategic importance for meeting the ever more urgent climate change related goals or other environmentally-related goals (water stress, for instance) then it can be argued that they are good candidates for this kind of R&D-related PPP.

Many countries are using the PPP approach to implement R&D on sustainable energy solutions and clean technologies. For instance, the EU currently has eight so-called contractual Public-Private Partnerships (cPPPs) for R&D. Three of them are explicitly about various types of sustainable energy solutions or about clean technologies: Energy-efficient Buildings; European Green Vehicles Initiative; and Sustainable Process Industry. Contractual-type agreements have been signed between the European Commission and a private entity representing the interested industry sector. Among other things, these agreements lay down the levels of funding being committed to the R&D not only by the EU but also by industry, with industry normally committing to higher levels of funding.

The US is also implementing a good number of R&D-focused PPPs with sustainable energy solutions at their core: the Energy Efficiency Building Hub, the Joint Center for Energy Storage Research, the Photovoltaic Manufacturing Consortium, and the Smart Grid Interoperability Panel.

In Japan, the use of PPPs in R&D has a long history. As such, this approach has seen use in the country’s R&D related to sustainable energy solutions. Collaborative R&D between the public and the private sectors is ongoing in the following programme areas: fuel cells/hydrogen energy, new energy, energy conservation and environment-friendly energy. The New Energy programme comprises the themes Smart Community, Rechargeable Batteries, Solar Cells, and Fuel Cells and Hydrogen. Research on co-generation is also ongoing.

Most of the R&D-related PPPs I have just mentioned focus on sustainable energy solutions in one or other of its forms. PPPs have also been formed to focus R&D on the search for clean technologies. Steel-making is an example. As you are no doubt aware, steel-making is one of the major industrial emitters of CO₂. There is the Ultra-Low CO₂ Steelmaking (ULCOS) consortium, which is a co-operative R&D programme run by a consortium of 48 European companies and organizations from 15 European countries. The consortium consists of all the

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major EU steel companies, energy and engineering partners, research institutes and universities. 40% of its financing comes from the European Commission. The aim of the programme is to reduce the CO₂ emissions of today's best technologies by at least 50%. Japan also has an R&D PPP on steel making, COURSE 50, which brings together the government and five of the country's largest steel makers. The aim of COURSE 50 is to reduce CO₂ emissions by approximately 30%, both through suppression of CO₂ emissions from blast furnaces as well as capture of CO₂ from blast furnace gas and its long-term storage.

Let me now turn to the last type of PPPs I want to touch on. To use a definition given by the World Bank, these are PPPs which are [quote] "*a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance*" [unquote].

Since electricity-producing renewable energy projects such as a hydropower complex, a wind farm, a large-scale PV array, and so on, are typical infrastructure, this kind of PPP can, and indeed is, used to promote renewable energy. It can also be used to promote the second pillar of sustainable energy: energy efficiency. For instance, a PPP can be used to improve the energy performance of government-owned buildings. The Heating, Ventilation and Air Conditioning, or HVAC, systems of these buildings may not be operating efficiently, or the building envelopes may be energy inefficient. Governments can enter into contracts with Energy Service Companies, or ESCOs, to have the latter make their buildings more energy efficient. Since the energy-related assets are already all in place – the buildings have already been built and HVAC systems installed – contracts in these cases more often than not simply take the form of an Energy Performance Contract. However, if the HVAC systems are old or very inefficient, or if there is a need to install products and equipment to upgrade the building envelope, then a PPP contract can be envisaged. Can this type of PPP be used to promote clean technologies more generally? To the extent that a public asset includes clean technologies, then yes.

Once again, I ask the question: why use this kind of PPPs to promote sustainable energy solutions and clean technologies, rather than the more traditional approaches such as public procurement?

Let me look at this first from the perspective of the public party in a PPP – governments.

Increasing fiscal space is very commonly given as the reason why governments adopt this kind of PPP over alternatives. In other words, it is believed that PPPs can allow governments to raise more capital than they might otherwise be able to within their budgetary constraints. However, this is also among the most debated motivations. Governments are often focusing on raising private **financing** for constructing infrastructure projects, while forgetting the need to ensure sufficient **funding** during the operation of the projects for serving private operator debts and rewarding equity holders. We have to remember that the commitment of private finance will always require funding over time, to recover and remunerate that private finance. User fees can be one main source of such funding, but governments have to be aware that payments out of their budgets will often also be another main source of funding. Therefore, governments need to take great care that PPP contracts do not overextend their future payments to the project.

Carefully managing fiscal risk is another important issue. Governments need to ensure that they do not end up taking on significantly more fiscal risk under a PPP project than they had expected. For instance, the private party often demands that the government provide guarantees on such risks as level of demand for the services being offered or exchange rate fluctuations. These risks can be considerably greater than initially envisioned by the government because of the influence of optimism bias on project decision-making. Such bias has been found to be pervasive in infrastructure projects. Every PPP contract will also present implicit contingent liabilities. For instance, liabilities can arise from the need to preserve the project in case of the private party's bankruptcy, or result from public expectations that must be satisfied. In addition, if the private party perceives that the government cannot afford to let the PPP project fail, they may then force a renegotiation of the PPP contract to obtain a tariff revision or to force the government to shoulder the cost of an unexpected event.

Where PPPs have been shown to have a definite advantage over more traditional public procurement modalities is in greater efficiency during construction and during operation, although even here one must be careful in one's analysis. For instance, it is true that PPPs have been found to reduce construction time and cost overruns for new infrastructure assets compared to traditional public procurement. But PPPs' complex contracting process means that they can experience delay at an earlier stage in the process, so that overall the time to start of operation may be no different than in the case of standard public procurement. With respect to the operational phase, available evidence suggests that private sector participation can improve service delivery and management efficiency, compared to government-run infrastructure services. However, this depends on the government effectively structuring, procuring, and managing the PPP project over its lifetime, so as to achieve the competitive tension, the real transfer of risk, which ensures that anticipated performance improvements actually materialize in practice. Where the capacity of the public sector is low and governments lack the necessary resources and skills – often the case in developing countries – this result can be difficult to achieve.

Looking at it now from the perspective of the private parties, why should they prefer PPPs over more traditional arrangements with the public sector? Or indeed, why prefer PPPs over arrangements which remain within the private sphere? Here, I want to refer to a report published in 2011 by e8 (now the Global Sustainable Electricity Partnership) and UN Energy. The report is titled "Strengthening Public Private Partnerships to Accelerate Global Electricity Technology Deployment". A couple of intriguing points emerge from the report. The first is, that while public parties may be looking to contractual type of PPPs to raise private finance, private parties – at least for Renewable Energy assets – are looking to the public parties to allow them to gain access to finance. So in the case of renewable energy, at least for the time being, private parties see PPPs as a mechanism to get the public party actively involved in helping, promoting, supporting the raising of the necessary finance. A second point raised by the report is that as much as public parties should seek to shift much of the risk of the asset construction and operation onto the private party, the private parties, again in the specific case of renewable energy, are interested in PPPs only where the government reduces their contextual risks, specifically where the government publicly and credibly commits to the development of

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renewable energy by establishing a specific, transparent and consistent legal framework and energy planning process friendly to renewable energy.

So those are the three broad types of PPPs which can be used to develop and promote sustainable energy solutions and clean technologies. I hope my remarks are helpful in creating the context in which the remainder of the discussion can take place. I believe that in principle all three types of PPPs could be used in the CSI countries. I will leave it to the panellists and to you, the audience, to discuss under which specific circumstances they could most profitably be used in these countries.

I thank you.