IRENA
International Renewable Energy Agency

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Note of the Director-General
Increasing the share of renewable energy through the Nationally Determined Contributions (NDCs)

1. Renewable energy, coupled with energy efficiency, has been widely recognised as the most technically feasible and economically viable solution to decarbonise energy, build a climate-resilient future, and avoid catastrophic climate change. IRENA estimates that the share of renewable energy can be increased from around 15% of primary energy supply in 2015 to around 65% in 2050, and this, together with additional energy efficiency efforts, could keep the global temperatures increase to well below 2°C[1].

2. In the lead-up to COP21 in Paris, all but one of the 195 Parties to the UN Framework Convention on Climate Change (UNFCCC) submitted their intended Nationally Determined Contributions (NDCs) – national plans outlining each Party's efforts to reduce greenhouse gas emissions and adapt to the impacts of climate change. The Paris Agreement entered into force on 4 November 2016. As of 15 October 2017, the number of ratifying Parties reached 168. As Parties ratified the Agreement, they submitted their first formalised NDCs, usually confirming their intended NDC.

3. As part of its continuous efforts to promote the widespread adoption and sustainable use of renewables, IRENA has analysed the renewable energy components of the NDCs, and has estimated the investments needed to implement such components. The study found that most of the NDCs refer to renewables in one way or another, including as a means of transitioning to a low-carbon economy and increasing climate resilience. Specifically, 145 of the 194 Parties that submitted NDCs[2] refer to renewable energy as part of their contributions to climate change mitigation. 109 of these provide quantified renewable energy targets.

4. The analysis has found that renewable energy targets outlined in the NDCs are not always aligned with national renewable energy strategies and plans. For instance, results indicate that the unconditional targets[3] set by African countries, will amount to less than 40 GW of renewable energy power generation capacity by 2030. This level of deployment comes in much lower than what has been foreseen in existing national energy plans, estimated to be above 110 GW. Even when conditional targets are taken into consideration, the pledges in the NDCs are still not aligned with the existing national targets, reaching less than 95 GW.

[1] With 66% probability.

[2] The data presented in this note is based on formalized NDCs for countries that ratified by 15 Oct. 2017 and utilizes intended NDCs for those that had not.

[3] NDCs typically contain a combination of conditional and unconditional contributions; while conditional contributions are implemented subject to the availability of international support for their implementation, unconditional contributions are those that countries intend to implement regardless of international climate assistance.

5. The misalignment of these two sets of targets could send mixed signals to investors, and hence slow down the scaling up of renewable energy investment. The close interaction between climate and energy officials and the involvement of all relevant stakeholders are critical for setting and updating renewable energy targets and for mobilising the capital needed to ensure that they are met.

6. Furthermore, it is important to note that in most countries, the targets set in both the NDCs and in national energy plans do not come close to exploiting the cost-effective renewable energy potential. For instance, the additional 110 GW of renewable energy foreseen to be developed in African countries is almost three times lower than the cost-effective potential of renewables for the region by 2030, which IRENA estimates to be 310 GW. From this comparison, it becomes apparent that there is a significant potential for increasing the share of renewables in the NDCs.

7. Implementing NDCs provides a unique opportunity to mobilise public resources, for instance in the form of climate finance, to leverage private investment in renewables. The targets identified in the study conducted by IRENA are estimated to create almost 1.3 TW of additional renewable energy capacity by 2030 worldwide. To implement such targets, IRENA estimates that a total investment of at least USD 1.7 trillion would be needed. In order to mobilize such investment, an effective use of public resources is required. An indicative estimate suggests that public finance ranging between USD 65 billion and USD 555 billion would be required to leverage the required investment volume from private or other public sources.

8. The investment mobilized for the implementation of NDCs can be a driver for the acceleration of renewable energy deployment. Given the significant benefits of the energy transition, for instance in terms of higher economic growth, increased employment and improved welfare, there is scope to increase the renewable energy targets in the NDCs. At the same time, the NDC process can also help to consider benefits across other sectors including water, health, and agriculture.

9. Enhanced renewable energy development can furthermore represent an adaptation solution, as it can help countries build resilience to climate change impacts. While most NDCs include renewables as a key mitigation solution, currently only 43 Parties recognize their potential for adaptation explicitly in their NDCs.

10. An opportunity for increasing the shares of renewables in the NDCs is provided by the "ratchet mechanism" built into the Paris Agreement, designed to steadily increase the ambition of NDCs over time to advance the objective of keeping mean temperature increase well below 2°C. This mechanism will start with an initial stocktake of implementation progress in 2018 during the Facilitative Dialogue to inform the next round of pledges in 2020. NDCs will subsequently be revised every five years.

11. At present, the level of detail contained in the NDCs differs from country to country with little in-depth analysis of renewable energy resources and potentials, and limited quantitative information about their role in realising targeted GHG emissions. In preparation for the 2018 Facilitative Dialogue, IRENA intends to leverage its existing work on renewable energy potentials, socio-economic benefits of renewables and its robust data portfolio, to develop a comprehensive NDC analytical framework to inform the revision of the renewable energy targets included in NDCs and ensure their alignment with other national plans.

12. Furthermore, IRENA's work on renewable energy policy and finance can support future analysis, covering policy frameworks to advance implementation. It can also support consideration of financial structures and mechanisms (e.g. lending facilities, risk mitigation instruments and venture capital funds) to leverage additional investment, as well as on the role of market-based mechanisms (e.g. carbon markets, taxes and other credit trading schemes) in meeting the renewable energy targets in NDCs.

Objective of the session

13. The purpose of this session is to discuss the potential of increasing the share of the renewable energy in NDCs, in line with the "ratchet mechanism" built into the Paris Agreement. The session will focus on how to support the implementation and revision of NDC-based renewable energy targets, ensure their alignment with other national plans and strategies, and facilitate the mobilisation of climate finance and other sources of finance towards renewable energy projects. Given that climate actors alone cannot guarantee the successful implementation of NDCs, the discussion will also cover the institutional structures and stakeholder engagement required to implement existing renewable energy targets and achieve more ambitious NDC-based renewable energy targets over time. Finally, the session will provide an opportunity to discuss the role of renewable energy deployment as a means of adapting to the impacts of climate change.

Guiding questions

- How can IRENA, together with international partners, support countries in the implementation and revision of their NDC-based renewable energy targets?

- How can information on current renewable energy deployment, existing national energy strategies and plans, and the cost-effective potential of renewables help the formulation of future NDCs?

- What national processes and actors are required for an integrated approach to the implementation and revision of NDC-based renewable energy targets?

- What role can renewable energy play in adapting to the impacts of climate change, and how can renewables help countries to build resilience to climate change impacts?