IRENA
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Note of the Director-General

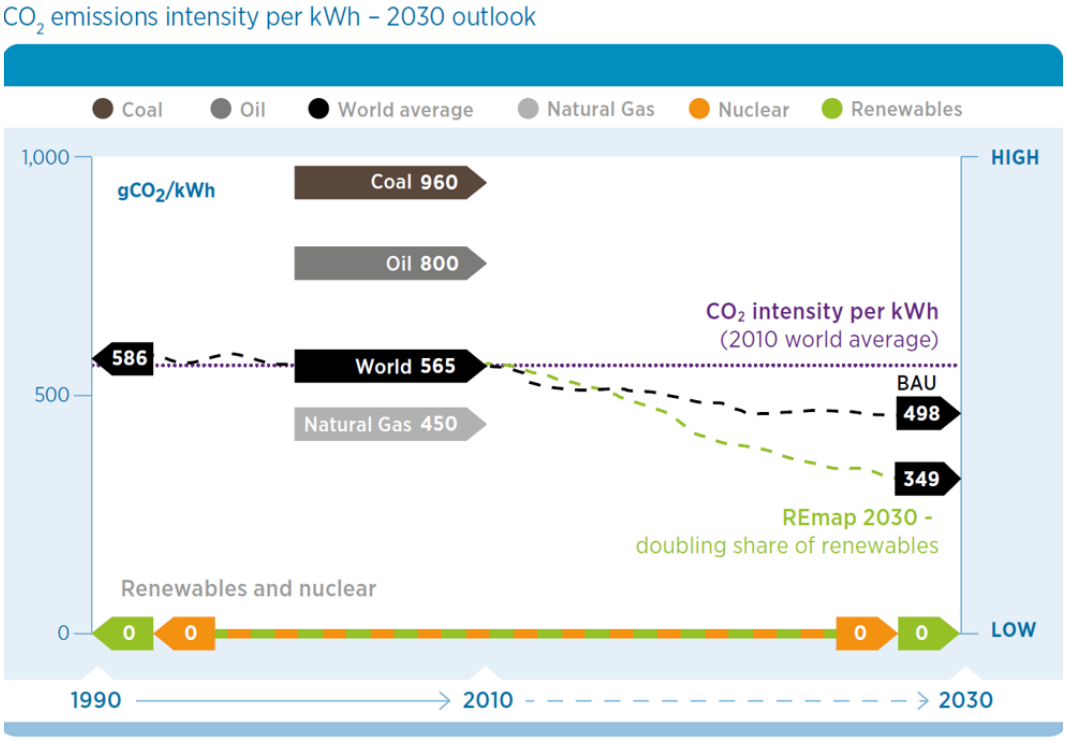
Renewable Energy and Climate Change on the Road to Paris
IRENA input to COP 21

This note is submitted to provide an update on the progress in programmatic activities and strategic considerations with respect to the Agency's work on climate change and preparations for the COP21.

I. Introduction

1. The mitigation of negative effects of climate change is today at the forefront of the global agenda. With over two thirds of global emissions derived from energy, it is evident that climate action will increasingly focus on finding solutions to climate change mitigation and adaptation in this sector. The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) underlines that renewable energy technologies, together with energy efficiency improvements, provide a viable solution to decarbonizing economies and a key means to achieving the objective of keeping atmospheric concentrations of carbon dioxide below 450ppm, a level considered to be consistent with the 2 degrees Celsius temperature goal. The Fifth Assessment Report further highlights that renewable energy technologies have demonstrated substantial performance improvements and cost reductions in recent years, and that a growing number of them have achieved a level of maturity to enable large-scale deployment.

2. Today, majority of countries have national level targets related to renewables, representing various policy designs and implementation of renewable energy technologies. IRENA's renewable energy roadmap, REmap 2030, shows that under current policies and national plans (business as usual case), average CO2 emissions will only fall to 498 grams per kilowatt-hour (g/kWh) by 2030. This level of emissions reduction is insufficient to keep atmospheric CO2 levels below 450 ppm. According to REmap 2030, doubling the share of renewable energy in the global energy mix by 2030 compared to the 2010 level, coupled with energy efficiency, could help mitigate climate change by reducing the global average emissions of CO2 to 349 g/kWh – equivalent to a 40% intensity reduction compared to 1990 levels, as seen in the figure that follows.



Source: IEA, 2010[1] and IRENA, 2014[2]

3. To achieve REmap ambition, countries will have to consider policies and measures to support environments that are favorable to investment and innovation in renewable energy. In particular, a predictable long-term policy framework is necessary to attract investments, develop expertise, drive technology innovation, and upgrade existing capacities to build a competitive industry.

4. IRENA's work, in all of its facets, contributes to the global efforts to transition to a low carbon energy future. However, as the focus on renewable energy as a means to mitigation increases, the Agency has made specific efforts to explicitly link renewables and action on climate change. In 2014, IRENA led the efforts on renewable energy in the context of the UNSG's Climate Summit. Building on the Agency's work before the Climate Summit, and benefiting from the momentum and partnerships created at the Summit, IRENA continues to advance three renewable energy initiatives: the Africa Clean Energy Corridor, the Global Geothermal Alliance and the SIDS Lighthouses. In addition to these initiatives, a range of IRENA programmes contribute to the climate efforts. For example, Renewable Readiness Assessments, a country driven process to assess key policies, potentials and technologies for scaling up renewable energy deployment, has been initiated in 26 countries, 20 of which are completed or in progress[3]. REmap analysis, a roadmap to doubling the share of renewable energy has been

[1] IEA, 2010, CO_2 emissions from fuel combustion, IEA Statistics, www.oecd-ilibrary.org/energy/co2-emissions-from-fuel-combustion-2010_9789264096134-en
[2] IRENA, 2014, Remap 2010: A Renewable Energy Roadmap, IRENA, Abu Dhabi
[3] Djibouti, Fiji, Gambia, Ghana, Grenada, Kiribati, Mauritania, Mongolia, Mozambique, Nicaragua, Niger, Oman, Peru, Philippines, Republic of Marshall Islands (RMI), Senegal, Swaziland, Tunisia, Vanuatu, and Zambia. The RRA processes in Antigua and Barbuda, Bahamas, Egypt, Pakistan, Tanzania, and Zimbabwe have been initiated in the first half of 2015.

conducted in 26 countries with 13 new countries either under development or discussions[4]. These analyses provide an overview of the present status of renewables, highlighting resource potential and key barriers to deployment, and provide recommendations on overcoming obstacles and harnessing opportunities. The results are informing policy-makers and enabling concrete action that contributes to global climate change goals and enable renewable energy investment.

5. In the coming months, efforts will be made to further develop a momentum on renewable energy for the upcoming COP 21. In this context, the French Syndicate for Renewable Energy (SER), the European Commission (EC) and IRENA are planning to co-host an event dedicated to renewable energy at the COP21. With the participation of renewable energy leaders and champions in public and private sector, the event will showcase renewable energy, raise awareness on its potential to decarbonize energy systems and demonstrate progress made in the deployment of renewables in different settings. It is envisaged that the event outcome would be presented in the framework of the High Level segment of the COP 21.

II. IRENA's activities related to climate change

6. In the lead up to COP 21, IRENA continues to engage with governments, industry and other stakeholders to promote renewables deployment as one of the drivers of climate action towards a sustainable energy future. Key activities include:

a. Action to accelerate the deployment of renewable energy

7. Africa Clean Energy Corridor (ACEC). Significant progress has been made in advancing ACEC, including the completion of preliminary zoning to identify high resource potential areas in all ACEC countries, the development of a framework for regulatory support to ACEC countries, the development of a least-cost planning methodology for power generation, and a series of capacity building activities for zoning and planning. To advance the ACEC in preparation for the COP 21, the following is envisaged:

- Establishment of the **ACEC Policy Consultative Forum** to facilitate a strategic policy dialogue among key stakeholders, including governments, utilities, regulatory bodies, project practitioners and development partners.
- Provision of **Technical Assistance and Advice** to support stakeholders in zoning; design and implementation of policy, regulation and institutional frameworks; capacity development; and sharing of best practices, experiences and lessons learned.
- Development of a **Project Facilitation Platform (PFP)** to connect projects, project developers and project owners; financiers and investors; and service and technology providers in a virtual market place. The core of the platform will be an actively operated and facilitated web-based online tool, a virtual market place, which will make the projects and relevant stakeholders visible, easily identifiable and approachable, and, in this way, increase the transparency and liquidity of the renewable energy project market in the region. The PFP will be closely linked to IRENA existing tools and databases, notably the Project Navigator which provides tools and templates for project developers, as well as relevant country level data already available on the

[4] The initial 26 countries include Australia, Brazil, Canada, China, Denmark, Ecuador, France, Germany, India, Indonesia, Italy, Japan, Malaysia, Mexico, Morocco, Nigeria, Russia, Saudi Arabia, South Africa, South Korea, Tonga, Turkey, Ukraine, United Arab Emirates, United Kingdom and the United States. The new 13 countries are Argentina, Belarus, Belgium, Colombia, Dominican Republic, Egypt, Ethiopia, Iran, Kazakhstan, Kenya, Poland, Sweden, and Uruguay.

ACEC countries. For instance, the zoning and resource assessments will be easily available for all market participants interested in renewable energy projects in ACEC countries.

- The PFP seeks to establish close engagement of private investors and public finance entities to facilitate access to financial instruments and facilities. This builds on collaboration with international financing institutions (IFIs) and donors already active in the region in order to facilitate efficient utilization of respective instruments and facilities. The PFP is currently in the development phase with the focus on technical, operative and strategic level design, developed in cooperation with stakeholders. It is envisaged that PFP would be launched at the COP21.

8. The SIDS Lighthouses. The SIDS Lighthouses initiative aims to mobilise USD 500 million over the next five years that would include 100 MW of new solar PV, 20 MW of wind, and significant additional capacity in other renewable energy technologies. The initiative has five main objectives: to develop and implement a structured approach to island power sector transitions to high shares of renewable energy; accelerate renewable energy transitions through identification of needs and gaps; strengthen knowledge base and building of institutional capacity; facilitate development of enabling frameworks for investment; and identify funding opportunities and facilitate matchmaking between project developers and funding organisations.

9. As a first step, IRENA is working with partners to develop a comprehensive overview of knowledge and information on the SIDS power sector, best practice on renewable energy development and deployment, and energy sector transformation issues. With partner support, this overview is already starting to bridge the gap between studies and concrete action to accelerate deployment. A number of SIDS have made specific requests for technical and other support and IRENA, in collaboration with partners and with the support of voluntary contributions, has been able to respond to these requests. IRENA is also working with a number of other partners to advance the initiative, including on a workshop in Martinique in June 2015, which will be followed by a workshop in Bangkok. Furthermore, a joint US/SPC/IRENA workshop on capacity building in the Pacific will be held. ENEL, a private sector partner, is also contributing its knowledge products to the initiative. The number of partners is growing, with new expected to join and contribute in the coming months, so that concrete progress can be demonstrated at the COP 21 and set a solid foundation for the coming years.

10. The Global Geothermal Alliance (GGA) was first introduced during the Abu Dhabi Ascent meeting in May 2014. The GGA Joint Statement and Action Plan were announced by Bolivia, Chile, Colombia, Fiji, France, Iceland, Kenya, Nicaragua, and the Philippines, together with the International Development Bank (IDB), ESMAP/World Bank and IRENA during the Climate Summit. Since, an interest in, and support for the Alliance has grown not only from geothermal resource rich countries, but also development partners, regional organization, financial institutions, and the private sector.

11. The alliance aims to contribute to the scaling up of geothermal energy deployment for the purpose of both power generation and non-power applications. In preparation for the COP 21, the GGA is concentrating on providing concrete contribution to initiatives already underway, to benefit from synergies and partnerships in such efforts like the ACEC and the SIDS Lighthouses.

III. Information and knowledge products

12. To raise awareness on renewable energy and enhance knowledge on the possibilities it offers in the climate change efforts, IRENA is developing a number of knowledge products. The second edition of the *Renewable Energy Roadmap to 2030 (REMAP 2.0)* will provide an overview of the developments since REMAP was first launched in 2014, complemented by in-depth analyses of selected technologies and key details emerging from country reports for 13 additional REMAP countries.

13. *REthinking Energy: Climate Edition* will highlight the policy imperative for renewable energy as a key strategic contribution to climate action. Aimed at the COP 21 stakeholders and audiences, it will

summarize recent trends and developments, map out priority investment strategies for the coming years and showcase concrete examples of the impact of renewable energy on decarbonisation and beyond.

IV. Technical advice and support

14. IRENA is collaborating with the UNFCCC to provide information and advice on renewable energy through it processes, specifically in the context of the Technical Examination Meetings (TEM). Furthermore, in support of countries' efforts to develop ambitious Intended Nationally Determined Contributions (INDCs), IRENA is organizing two workshops on the potential and opportunities, as well as possible policies and measures to advance renewable energy in Africa.

15. In the course of the year, IRENA will also provide a set of *policy briefs* drawing on work undertaken by the Agency on renewable energy and climate change to demonstrate the potential, opportunities and benefits of renewable energy as integral parts of countries' climate change strategies.

V. Strategic partnerships on Climate Financing

16. IRENA is collaborating with key climate actors, with the aim of advancing support to renewable energy in the context of climate action. Many of these actors have emerged from, or are linked to the UNFCCC processes. A dialogue with *The Climate Technology Centre and Network (CTCN)* on the development of a memorandum of understanding is underway, to agree on the framework for engagement. Furthermore, a number of dedicated multilateral finance institutions for climate finance have been established, and IRENA is exploring optimal levels of cooperation to advance the deployment of renewables through these channels. Possible partnerships include:

17. Global Environment Facility (GEF). The GEF is an operating entity of the financial mechanism of the UNFCCC with over 20 years of record in environmental funding. Within the GEF, a funding envelope for the Climate Change Focal Area of USD 1.26 billion has been allocated for climate change, deforestation, and land degradation. GEF also has an active Small Grants Programme (SGP) that provides direct grants, including for project development.

18. IRENA is working with the GEF through the United Nations Development Programme, which is one of the implementing agencies of the GEF. This includes co-financing the projects funded under the IRENA/ADFD Project Facility and project development grant funding for the Facility's candidate projects. Furthermore, options for collaboration on the ACEC project facilitation platform are being explored.

19. Climate Investment Funds (CIFs). The CIFs were established in 2008 and are administered by the World Bank, but operate in partnership with five partner multilateral development banks (ADB, AfDB, EBRD, IDB, WBG). The CIF finance programmatic interventions in selected developing countries with the objective of improving understanding of how public finance is best deployed at scale to assist transformation of development trajectories. Pledges since 2008 amount to a cumulative USD 8.1 billion and USD 796 million is pledged toward the Program for Scaling-Up Renewable Energy in Low Income Countries (SREP). Discussions are underway on possibilities for IRENA's programmatic support to the SREP and on collaboration on renewable energy data collection and dissemination.

20. Green Climate Fund (GCF). The GCF was established in 2011 as an operating entity of the financial mechanism of the UNFCCC, to mobilize and channel the financial resources required to enable a shift towards low-emission and climate-resilient pathways in developing countries. With pledges of USD 10.2 billion made to GCF in 2014, the Fund is focusing, drawing on its implementing entities, on the first set of project activities before the end of 2015. Half of the GCF's resources have been programmed to be used for climate change mitigation, with renewable energy and energy efficiency playing an important role.

21. Supporting countries to access resources from the GCF is a strategic priority. In this context, the Readiness and Preparatory Support Programme has been established to build on ongoing initiatives to strengthen developing country capacity to make effective use of climate finance. The Programme is aimed at empowering developing countries to both engage in the work of the GCF, and to develop initial pipelines of programme and project proposals. This programme is driven by recipient country governments through their National Designated Authorities (NDAs).

22. IRENA has held initial discussions on possible options for collaboration with the GCF but, until now, there has been no formal engagement with the Fund. There are different possible avenues for engagement:

a. Delivery partner to support countries and national stakeholders

23. Building on its programmatic activities, and by using IRENA tools and methodologies such as RRAs and the Project Navigator, IRENA could work with countries to strengthen their ability to receive GCF funds for renewable energy projects. This would be of particular importance to countries seeking direct access to the GCF through national implementing entities and could be part of GCF's Readiness and Preparatory Support Programme.

b. Advice to the GCF Secretariat

24. IRENA could also support the GCF secretariat by providing advice and expertise on the programmatic basis for renewable energy project planning and management. This could include providing an input to, and commenting on draft programming documents that establish the business plan for the Fund, and advising on the criteria and metrics for project selection and results monitoring and evaluation.

c. Implementing entity with 'fit-for-purpose' accreditation to provide programmatic and technical support

25. With the fit-for-purpose accreditation, IRENA could be an implementing entity with a limited scope focused on programmatic and technical support to support countries and implementing entities to advance renewable energy projects and programmes. This would entail support at all stages of the process; from programming, building the knowledge basis and network, to actual implementation. Work would be done in close collaboration with the financial intermediary that would be in charge of the financial transactions.

26. As the institutional framework of GCF evolves, IRENA will have to decide on what type of engagement would be optimal, considering respective mandates, strengths and potentials. Furthermore, IRENA will continue to consider how the existing and emerging climate finance instruments could be best utilized to leverage private investment and accelerate the deployment of renewable energy.

VI. Questions:

- What further activities should IRENA consider in its support to COP 21?
- Are there other entities that IRENA should be engaging with on the climate issues?
- What are the priorities for IRENA's engagement with climate financing entities?