FROM PARIS TO MARRAKECH – FROM COP21 TO COP22: ANY IMPLICATIONS FOR RENEWABLES AND THE GEOTHERMAL SECTOR?

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ABSTRACT

The international climate change conference (Conference of the Parties = COP21) which took place in Paris in Dec. 2015 brought together global leaders of 195 countries. Discussion outcomes clearly showed that transitioning rapidly to a future fueled by renewable energy is the most effective way to decarbonize economies. The paper presents the COP21 achievements, the Paris agreement leading towards the decarbonisation of economies, initiatives kick-started in Paris, the role of geothermal energy and of the International Geothermal Association.

1. INTRODUCTION

The COP21 (Conference of the Parties) was a major milestone towards the global energy transition. Renewable energies (RE) were on top of the agenda during many plenary sessions, meetings and workshops. As a result of the intense discussions, the Paris Agreement outlines a roadmap for the decarbonisation of economies and emphasises strategic challenges which countries can only overcome if they adhere to certain principles. The Paris Agreement was agreed upon by state leaders on the final day of the COP21, on 12th December 2015. A few months later, state representatives were invited to an official signing ceremony in New York City on Friday, 22 April 2016. During the event, officials from 175 countries signed the Paris Agreement on climate action signalling a crucial milestone in international efforts to combat climate change. The number of signatories set a new record for an international United Nations accord. UN Secretary-General Ban Ki-moon emphasised that the next step was to ensure that the landmark deal would enter into force as quickly as possible.

Origins of the COPs go back to the Earth Summit in Rio de Janeiro, Brazil, in 1992. With the signing of the United Nations Framework Convention on Climate Change (UNFCCC) a crucial step was made in international climate negotiations. With the formation of the UNFCCC an official recognition of the interrelationship of climate change and human responsibility for this phenomenon became clear. Subsequently, in 1997, the Kyoto Protocol was adopted aiming to set quantifiable greenhouse gas (GHG) emission reduction targets for developed countries for the first time. The Kyoto Protocol initially entered into force in 2005 for the period 2008-2012.

1. FROM COP21 TO COP22

1.1 Achievements of the COP21

Country representatives and climate change negotiators concluded that the climate discussions came to a turning point in Paris. With the Paris Agreement, 195 countries agreed to limit global warming to well below 2 degrees Celsius. Specific signals showing that a major milestone was reached in Paris are the following facts:

- Intended Nationally Determined Contributions (INDCs): A majority of countries committed to scaling up renewable energy and energy efficiency through their INDCs. Out of the 189 countries that submitted INDCs, 147 countries mentioned renewable energy and 167

countries mentioned energy efficiency. Renewable energies are now established around the world as mainstream sources of energy (REN21, 2016). Countries representing more than 90% of the global economy submitted pledges in the form of INDCs to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) prior to the COP21. With the INDCs they demonstrated their intention to reduce national emissions and mitigate climate change. The INDCs also reflect the countries' agreement to a transparent framework in which numbers and quota are made publically available. Individual states are now 'at the heart of the deal'.

- Global awareness on RE cost effectiveness: The awareness was reached globally that renewable energy costs decreased dramatically over the last five years and are cheaper than fossil fuels in the long-run. IRENA's report 'Renewable Power Generation Costs' (2014) and subsequent studies contributed valuable data and analysis results into this discussion.
- Global renewable share: By the end of 2014, renewable energy provided an estimated 19.2% of global final energy consumption. Growth in capacity and generation continued in 2015 and 2016 (REN21, 2016).
- Private sector involvement in RE: Over the last years, the private sector increased commitments to renewables. International companies such as google, IKEA, Commerzbank, Deutsche Bank, SAP, Walmart, apple, etc. express an interest and commitment for RE and use them in their corporate strategy.
- Bank interest/ new financial instruments: Increases occurred in the number of banks active in the renewable energy sector and an increase in loan size. Also, new investment vehicles, like i.e. green bonds, crowdfunding and yieldcos expanded during the year.
- Politics as major challenge: A common awareness was also reached during the COP21 that technical, financial and other barriers can be overcome and that politics is the driving force in decarbonizing economies and stopping climate change.
- Strategic alliances: The COP21 showed that strategic technology focused alliances and North-South/ South-South alliances can help to overcome technical, financial and other barriers. Alliances include i.e. the Global Geothermal Alliance, the Global Alliance for Buildings & Construction (60 groups, 16 countries), the African Renewable Energy Initiative (300 GW 2030 target), the International Solar Alliance, Divest for Paris (500 institutions moving away from investing in fossil fuels).

Figure 1: Outside the COP21 venue in Paris in December 2016

On 7 December 2015, the Energy Day was celebrated in Paris. The Director General of the International Renewable Energy Agency (IRENA) and the President of Iceland officially launched the IRENA Global Geothermal Alliance, an alliance that aims to achieve major milestones in geothermal

growth in the future. On the same day, the Renewable Energy Alliance (REN Alliance) showcased practical case studies from around the world how renewable energy technologies can work together with other technologies and complement one another. REN Alliance partners include the following entities:

- International Hydropower Association,
- World Bioenergy Association,
- International Solar Energy Society,
- World Wind Energy Association, and
- International Geothermal Association.

The REN Alliance works towards 100% renewable energies and advises national decision makers, leaders and politicians to enhance renewable-friendly framework conditions and state instruments. REN Alliance work input also includes political dialogue and advisory on potentials and scenarios for renewables, sustainability assessments, carbon funds, policies and other related fields. The International Geothermal Association (IGA) closely collaborates with the REN Alliance and IRENA and thereby addresses policy and investment challenges in order to rapidly expand geothermal resource use. On Energy Day in Paris, the REN Alliance held a practice-oriented side event to inform the public on how RE can work together 'in a symphony' and use synergies.
Both events on the Energy Day in Paris clearly showed that the voice of geothermal energy supporters is brought to the attention of UN decision makers, ministers and the wider community. Geothermal energy plays an important role in the energy transition due to its diverse uses for heating/ cooling, electricity generation, agricultural drying processes, balneology, etc.

Figure 2: REN Alliance side event during the COP21 in Paris on 7 December 2016

Figure 3: The launch of the IRENA Global Geothermal Alliance in Paris

1.2 Process from COP21 to COP22

The Paris Agreement outlines the framework for the transparent recording of the INDCs at UNFCCC. The Agreement also sets targets for mobilizing climate finance, technology development and transfer. Within the document, guidelines are set for ensuring developing countries' support, capacity building a transparency framework and enhanced action prior to 2020. The Paris Agreement is open for signature and ratification by all parties at the UN headquarters in New York until 21 April 2017. On 19 Aug. 2016, Climate Action informed that 57 countries, accounting for 57.88% of global emissions, have already ratified the Paris Agreement, or promised they will by the end of 2016 (Climate Action, 19 Aug. 2016).
If these countries keep their promises, the Paris Agreement will become an international law. Climate Action envisages that the target could be reached by 7 October 2016, which would enable the

agreement to be in place before COP22 in November 2016, in Marrakech, Morocco. Once the treaty is in place, all countries will be bound to it for four years.
IRENA confirms in their 'Roadmap for a Renewable Energy Future' (2016) that doubling the share of renewables is possible, cost-effective, economically viable and beneficial, even as global energy demand grows.

Figure 4: Earth day, 22 April 2016 - Oscar winner and environmental campaigner Leonardo DiCaprio: 'The world is now watching. You will either be lauded by future generations or vilified by them.'

1.3 Expectations to COP22

The 22nd session of the Conference of the Parties (COP22) will be hosted in Marrakech, Morocco from 7-18 November 2016. According to Moroccan Foreign Minister Salaheddine Mezouar, Moroccan initiatives cover sustainable agriculture, food security, renewable energy and land use and are designed to support Morocco's targets for COP22.
Hilary Chiew (Third World Network, 2016) designates the COP 22 in Marrakech as an 'implementation COP', facilitating a dialogue to enhance the mitigation ambition and the provision of financial resources by developed countries. Presently, the French Presidency supports in mobilizing more Parties to sign and ratify the Paris Agreement before COP22 in November.
Another axe of the roadmap to Marrakesh concerns consolidating the mobilization of non-state actors and governments involved in the Lima-Paris-Action Agenda. The program is an essential driver for action and innovation.
On 28 April 2016, the Moroccan Presidency expressed its determined to develop a clear and detailed action plan for mobilizing $100 billion dollars by 2020 and project finance funds with priority given to adaptation projects through the review of projects by country, type and funding source. According to the COP22 website, the 'Moroccan Presidency will be welll mobilized so that a large number of countries announce their adaptation plans during COP22' declared the Special Envoy for Mobilization and Minister Delegate in charge of the Environment, Hakima El Haité (COP22, 2016).

The international climate change negotiations also support geothermal energy. Even though the discussions evolve around renewable energy technologies in general, all RE are seen as vitally important for the global energy transition. The role of the global energy technology associations is thus to emphasise the advantages of their individual technologies and show that synergies between the different technologies can be used ('symphony of renewables').

2. GEOTHERMAL ENERGY AND THE ROLE OF THE IGA

Over the last few years, the IGA has strengthened its collaboration with UN entities, development banks and other international political advisory bodies. The strategic collaboration with the Renewable Energy Alliance (REN Alliance), the Renewable Energy Policy Network for the 21st Century (REN21) and IRENA facilitated interdisciplinary theme-oriented collaborations and the use

of synergies. Since the foundation of the IGA, advisory services were continuously provided to international organisations and donor agencies such as the World Bank, the International Finance Cooperation, the Interamerican Development Bank, the German Development Bank (KfW) and others.

The **International Geothermal Association** (IGA), founded in 1988, is a scientific, educational and cultural organization established to operate worldwide. It has nearly 5,000 members in over 65 countries. The IGA is a non-political, non-profit, non-governmental organization with special consultative status to the UN. The objectives of the IGA are to encourage research, the development and utilization of geothermal resources worldwide through the publication of scientific and technical information among the geothermal specialists, the business community, governmental representatives, UN organisations, civil society and the general public.

In 2015, the IGA received the official UN observer status and liaises closely with the UN Economic and Social Council (ECOSOC). The IGA regularly attends UNFCCC COP events and shows its presence with side events and a booth with the REN Alliance partners. In April 2016, the observer status to the Green Climate Fund (GCF) was granted to the IGA allowing the IGA to attend the GCF Board meetings and provide strategic advice on geothermal energy topics. The GCF is particularly important as it provides large amounts of project financing to countries to mitigate and adapt to climate change.

On this international agenda roles of the IGA are:

1. Advocacy: The IGA represents the interest of its members and the geothermal sector in international debates and discussions.
2. Partnerships: The IGA establishes & maintains partnerships with major organizations such as IRENA, the UN, the IEA, multi-lateral banks, etc., both through the REN-Alliance and directly, by representing our technologies in key discussions on climate change, poverty alleviation, and energy security.
3. Projects: Collaborations evolve during meetings. Various projects were drafted with stakeholders during international events.
4. Networking platform: The IGA provides opportunities to engage with businesses, professionals, and decision makers through international/ regional conferences, ongoing policy and educational programs.
5. Awareness raising: The IGA raises awareness through side events and press releases.

3. RESUME

In the last few years, the IGA enhanced its strategic collaborations with policy stakeholders, development banks, globally operating funds, UN, other renewable energy associations and renewable energy policy entities. With the IGA efforts on these platforms, the awareness for geothermal energy has been enhanced and facilitated concrete projects to start. With these enhanced efforts, direct benefits were also generated for the IGA membership and IGA partners. The COPs are major milestones which generate further financing options and political decisions which influence project developers on a national scale. COPs are thus important for the promotion of geothermal energy use.

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