



COP 22 Report

Outcomes of the U.N. Climate Change Conference

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1 COP 22: From Agreement to Implementation

The landmark Paris Agreement reached in December 2015 marked a key milestone in the global climate movement, establishing a framework to combine national efforts with multilateral cooperation and promote increasing ambition over time. The Paris Agreement saw a historically rapid entry into force. The requisite threshold – formal acceptance by 55 countries accounting for at least 55 percent of global emissions – was met by October 4 and the Agreement took effect on November 4. By the close of the Marrakech conference, it had been ratified by 111 countries representing more than three-fourths of global emissions.¹

From November 7-18, 2016, delegates from around the world gathered in Marrakech for the twenty-second session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP 22), as well as the first session of the meeting of the Parties to the Paris Agreement (CMA 1). Negotiators from almost 200 countries arrived in Marrakech, ready to focus on the technical details of a path forward. Over 22,500 participants in total, including government officials, industry representatives and civil society organizations joined in either as part of the negotiations or the surrounding events.²

Marrakech was an important turning point in the history of international climate change negotiations. COP 22 was to be the “implementation” COP, transitioning from the many years of negotiations that came to a head in Paris last year to a new phase of negotiations focused on translating the higher level commitments contained in the Paris Agreement into a detailed blueprint for action. It was perceived to have two main goals: to write the “Paris Rulebook”³ and to preserve the momentum of the global climate movement.

Expectations regarding progress at COP 22 were heightened by the Paris Agreement’s rapid entry into force and raised further by the perceived need to send strong signals of unity and determination, given the uncertainty caused by the US election results. And while there are certainly reasons to celebrate at COP 22, including the Parties’ agreement to finalize the Paris Rulebook by 2018 – a year earlier than many envisioned in Paris – and many announcements of funding and action by state and non-state actors, few of the loose ends left by the Paris Agreement were completely tied up in Marrakech. That said, there was no expectation heading into Marrakech that all issues would be resolved there. Rather, the goal was to better understand and define the issues at stake, outline the types of documents and workshops that would be required to make sense of them by the 2018 deadline and develop a clear roadmap to meet that deadline – goals that were largely achieved. All in all, the [UNFCCC team](#) felt that the

¹ This number has now risen to 114. http://unfccc.int/paris_agreement/items/9444.php

² <http://www.iisd.ca/download/pdf/enb12689e.pdf>

³ This refers to the technical work of delineating the rules, procedures and guidelines that will make the Paris Agreement implementable.

conference “successfully demonstrated to the world that the implementation of the Paris Agreement is underway and that the constructive spirit of multilateral cooperation on climate change continues”.

2 Negotiation Outcomes

In Marrakech, Parties reaffirmed their commitment to the full implementation of the Paris Agreement and agreed to finalize the detailed rules for its implementation within two years. While the election of Donald Trump as the next US president cast a shadow of uncertainty over the negotiations (since Mr. Trump campaigned on pulling out of the Paris Accord and publicly doubted the validity of climate change science), delegates pushed ahead with determination. Countries rallied behind the messages of UN Secretary-General Ban Ki-moon and UNFCCC Executive Secretary Patricia Espinosa that the global climate movement was [bigger](#) than any one country and forward action was “irreversible” and “unstoppable”. No country stepped back from its commitment to climate action. In fact, Australia, Botswana, Japan, Pakistan and Italy, among others, joined the Paris Agreement after the election of Trump. Some Parties urged that the negotiations proceed at a faster rate to ensure that as much progress on the Rulebook was made as possible, but other Parties emphasized the importance of not being rushed. Overall, there was little evidence that the US election significantly altered any of the negotiation outcomes.

While further decisions are required on a number topics, including mitigation, adaptation, finance, transparency, a new “global stocktake” process, market mechanisms, and implementation and compliance, the following provides a brief description of key discussion points and outcomes.

2.1 Global Stocktakes

Preparations were made for the 2018 facilitative dialogue, which will to take stock of collective progress towards the Paris Agreement’s long-term emissions goal and inform the next round of NDCs.

2.2 Mitigation and Nationally-Determined Contributions (NDCs)

The Paris Agreement calls for further guidance on, for instance, the features of NDCs and the Parties’ accounting of their NDCs. One challenge is that this guidance will need to account for the different types of NDCs Parties have submitted (e.g. absolute emissions targets, intensity-based targets, peak emissions, renewable energy investment or capacity targets, etc.). Some countries argued that certain NDC-related requirements should be different for developed versus developing countries, but others strongly opposed this suggestion. Parties ultimately agreed to submit their views on what features should be included as part of future NDCs within the first five months of 2017. Common timeframes for NDCs will also be dealt with in 2017.

2.3 Adaptation Efforts and Communications

Parties began discussions regarding possible elements of the periodic “adaptation communications” they are encouraged to submit under the Paris Agreement, which would outline adaptation needs and/or efforts, as well as potential links to the global stocktake. Details regarding how to assess the adequacy and effectiveness of adaptation efforts and support must still be determined. Moreover, there are still questions regarding how to recognize developing country adaptation efforts. Within the first five months of 2017, countries are required to submit their views on the adaptation communications.

2.4 Finance

Countries were urged to continue scaling up their financial contributions towards the 2020 goal of \$100 billion.

There was much discussion regarding the need to balance mitigation and adaptation funding, with particularly vulnerable countries fighting for stronger wording on this to ensure adaptation efforts are supported.

Many delegates, including Canadian negotiators, discussed the need to simplify climate financing and attempt to combine both mitigation and adaptation funds under one roof (i.e. the Green Climate Fund). However, the Parties ultimately decided that the Adaptation Fund, a body that was originally set up to serve the Kyoto Protocol, should serve the Paris Agreement. Notably, Belgium, Germany, Italy, and Sweden together pledged \$81 million in new contributions to the Adaptation Fund, surpassing its fundraising target for 2016.

The Paris Agreement requires developed countries to provide biennial reports on financial support provided or mobilized through “public interventions” and on projected levels of future support. In Marrakech, Parties began considering how to account for public finance; for instance, whether the accounting should apply only to flows from developed to developing countries or to broader flows of public finance. Note, however, that with a Trump administration less likely to contribute to the \$100B goal, the onus on private investors to fill the finance gap will be even heavier.



2.5 Loss and Damage

Countries also approved a five-year workplan for the Executive Committee of the Warsaw International Mechanism (WIM) on “loss and damage” associated with impacts of climate change. The workplan will start in 2017, under which countries will start to formally address topics such as slow-onset impacts of climate change, non-economic losses (e.g. culture and identity) and migration.

2.6 Gender

The Parties agreed to extend and enhance the Lima work program on gender for another three years. The Canadian delegation went into the negotiations with a strong stance on gender and reported that countries agreed to hold regular workshops to discuss and share information on their work to integrate gender perspective under the UNFCCC and Paris Agreement, as well as domestically. The decision also encourages Parties to recognize importance of women’s grassroots efforts and supports a gender action plan.

2.7 Future Negotiations

Fiji will be the president of COP 23 but the negotiations will take place in Bonn, Germany due to capacity issues. Poland expressed interest in hosting COP 24 and COP 25 will likely be held in Latin America or the Caribbean.

3 Conference Highlights

3.1 Countries

To demonstrate unwavering commitment to the full implementation of the Paris Agreement and help to achieve the goals set out therein, countries took ambitious parallel action outside of the negotiation halls. For instance:

- The UNFCCC and the Parties to the Convention announced their reaffirmed resolve for international climate action with the release of the [Marrakech Action Proclamation](#). The Proclamation is a celebration of the momentum of political commitment on climate change and the mobilization of non-state actors. As this COP was nicknamed the “implementation” COP, the document concludes with an emphasis on this being the time for action.
- Parties to the UNFCCC also announced the establishment of a new fund called [the Capacity-Building Initiative for Transparency \(CBIT\)](#). As its name suggests, the trust fund with US\$50 million pledged will go to strengthening the capacity of developing countries to meet the enhanced transparency requirements of the Paris Agreement. Pledges have been made from countries including Australia, Canada, Germany, the United Kingdom and the US. The first set of approved projects will take place in Costa Rica, Kenya and South Africa.
- Another outcome was the [announcement](#) of the [UNFCCC’s 2050 Pathways Platform](#). In accordance with the Paris Agreement, Parties should express long-term, low-carbon development strategies and the platform is meant to facilitate the sharing of resources, knowledge and experiences of deep decarbonization planning. At least 22 countries, 15 cities, 17 states and 196 businesses have committed to doing this, with the [US](#), Mexico, Germany and [Canada](#) having already released their strategic documents.
- Meanwhile, the [Climate Vulnerable Forum](#) (CVF) was assembled. The CVF is a global partnership of 48 of the least-developed and low- and middle-income developing countries—all of which are disproportionately affected by the consequences of climate change. They will “strive to meet 100% domestic renewable energy production as rapidly as possible”, among host of other commitments. The CVF was also formed to hold industrialized countries accountable for the consequences of climate change.
- Finally, the launch of the [NDC Partnership](#) brought together 33 countries and 9 international institutions to accelerate climate action on the ground and advance sustainable development.



Canadian Minister of the Environment and Climate Change, Honorable Catherine McKenna (middle) speaking at the conference

3.1.1 China

According to sessions led by Climate Analytics' and Shanghai Environment and Energy Exchange, China:

- has decreased coal consumption for more than three consecutive years, indicating that this reduction is not a one-off event but is instead becoming a trend;
- is increasing renewable energy rapidly;
- is supporting electrification of mobility, specifically EVs;
- is on track to peak its CO₂ emissions by 2025-2030 (though other emissions, such as methane, are not predicted to peak any time soon); and
- will launch a national carbon market in 2017, linking with the various local carbon markets that are already in place.

Many were concerned that the political uncertainty around the US's climate commitments would cause China to pull out of the Paris Agreement. But China has not shown any indication that it is backing down on climate action. Rather, Vice Foreign Minister Liu Zhenmin [stated](#) that China will continue the fight against climate change "whatever the circumstances".

3.1.2 The United States

In the days following COP22, the Obama Administration made a host of [announcements](#). The following are highlights of their progress towards supporting clean energy development, finance and innovation:

- The [Overseas Private Investment Corporation](#) (OPIC) committed \$125 million to finance renewable energy projects to El Salvador and India. OPIC also launched the US-India Clean Energy Finance facility to address the financing gap in the Indian distributed solar market.
- The US Department of Energy's [SunShot Initiative](#) launched their Solar in Your Community challenge. Its aim is to expand access to solar electricity, specifically to low- and moderate- income households, governments and nonprofits. They hope to accelerate the development of new and innovative financial and business models. The aim is to reduce the barriers of entry for non-rooftop solar users such as community solar by cutting the cost of solar-generated electricity by 50% between 2020 and 2030.
- The National Community Solar Partnership – a collaborative effort between many US departments and stakeholders – shared that their partnership has grown to 155 companies, organizations and universities from 36 states. The Partnership is working to improve the access of community solar for households and businesses that are renters and do not have access or adequate roof space for solar systems.
- The US Department of Energy (DOE) updated its [Best Practice Guidelines for Residential PACE Financing Programs](#). In brief, Property Assessed Clean Energy (PACE) is a financing program for household retrofits that reduce energy and water consumption.
- Finally, the creation of a [Clean Energy Compact](#) between the DOE and Historically Black Colleges and Universities (HBCU) with the goal of engaging the HBCUs and their communities by providing energy education and awareness, solar deployment, building energy efficiency, job creation and job skills training. The hope is to provide the low- and moderate-income communities that tend to surround HBCUs with the economic and social opportunities presented by low-carbon energy technology.

In the impending absence of US leadership, many looked for signs that other Parties such as China or the EU might step up. Canada worked hard to help fill this gap, confirming that the election of Trump wouldn't cause it to change course on its carbon pricing plans, being one of the few countries to release its [Mid-Century Long-Term Low-GHG Development Strategy](#), contributing to the [US\\$23 million](#) committed to the Climate Technology Centre and Network to support technology transfer in developing countries and [announcing](#) that it would invest nearly \$1.8 billion to significantly leverage private-sector investment focused on clean and renewable energy solutions. Nevertheless, many felt that Canada was sending mixed messages, as these announcements were made simultaneously with discussions surrounding potential pipeline approvals and expansion of fossil fuel projects within our borders.

3.2 Cities, States and Regions

Subnational jurisdictions also play an important role in climate action and the reduction of global emissions and, with the US election result, the world will be looking to cities, states and regions to act on climate now more than ever. The strong resolve shown by certain US jurisdictions and the many coalitions and alliances subnational actors have formed worldwide demonstrate that subnationals will continue to play a leading role:

- Two of the largest economies in the US – [California](#) and [New York](#) – have both signed onto ambitious climate goals and have assured their constituents that Trump’ victory will not cause them to back down on the fight against climate change.
- Near the close of COP 22, mayors from 10 US cities announced that they were joining the [City Energy Project](#), a united effort to address their largest source of energy use and climate pollution: buildings. By the year 2030, the 20 participating cities have the power to achieve significant collective impact by taking action at the local level, with the potential to save more than \$1.5 billion annually in energy bills and reduce carbon pollution by more than 9.6 million metric tons, equivalent to taking 2 million cars off the road for a year.
- Beyond the US, coalitions such as the [Climate Group’s States & Regions Alliance](#), a network of 38 governments from six continents which collectively account for 368 million people, 12% of global GDP and 2.9 gigatons of CO₂ emissions are driving the clean energy revolution and sending strong signals to national governments that they are moving forward with climate action.
- The [Under2 MOU](#) brings together states and regions willing to commit to reducing their GHGs. A coalition of 165 jurisdictions, representing 33 countries and more than a third of the global economy, they have agreed to reduce their GHG emissions 80-95%, or limit to 2 metric tonnes of CO₂e per capita, by 2050.
- The newly formed [Global Covenant of Mayors for Climate and Energy](#) is the “world’s biggest urban climate and energy initiative, bringing together thousands of local and regional authorities voluntarily committed to implementing EU climate and energy objectives on their territory. The three pillars of the strengthened Covenant are mitigation, adaptation, and secure, sustainable and affordable energy. New signatories now pledge to reduce CO₂emissions by at least 40% by 2030 and to adopt an integrated approach to tackling mitigation and adaptation to climate change. In a [recent statement](#), Bloomberg remarked that if the Trump administration does withdraw from the Paris accord, he would recommend that the 128 US mayors who are part of the Global Covenant of Mayors seek to join in its place.
- Finally, [C40](#) is also a growing network of 40 cities from over 50 countries that leverages their collective power to access partnership resources including technical and financial support.

3.3 The Private Sector

Private and publicly traded companies also have a big role to play in advancing the climate agenda – both in terms of supporting government action and moving forward with mitigation and adaptation responses on their own:

- In a [letter](#) addressed to Mr. Trump, 365 companies and major investors including Kellogg, Nike, Dupont, Intel, Levi Strauss and Starbucks [urged](#) the President-elect not to abandon the Paris climate deal, saying that a failure to shift to a clean economy would endanger American prosperity. Signatory companies emphasized their “deep commitment to addressing [climate change](#),” and demanded that Trump leave in place low-emissions policies in the US. Levi Strauss Vice President for Sustainability [stated](#) that “building an energy-efficient economy in the US will ensure our nation’s competitiveness and position US companies as leaders in the global market”. Even the World Coal Association (WCA) issued a plea to the soon-to-be President to try to reduce greenhouse gases.
- At COP 22, we heard that least [517 companies](#), including Google, Walmart and Shell are already using an internal price on carbon as an accounting and risk management tool and an additional 732 companies are considering whether to follow suit. Notable companies that have implemented this approach include Nestle and Michelin. The practice is present in [developing economies as well](#), as India’s private sector has emerged as a leader in this space.
- In the final days of the climate conference, the [Science Based Targets initiative](#) announced that 200 companies, representing US\$4.8 trillion in market value, have committed to set emissions reduction targets. Under this initiative, big names such Walmart, Coca Cola Enterprises, Mars Inc., Proctor and Gamble, General Mills, and Sony, to name a few, agree to have their commitments verified by the independent party. The Science Based Targets initiative is a partnership between CDP, UN Global Compact, WRI and WWF.
- The [We Mean Business](#) coalition was again active at this year’s COP. This coalition works with businesses and investors to accelerate the transition to a low-carbon economy. They have the expressed commitment of 673 companies and investors with over US\$8.1 trillion and US\$20.7 trillion in total revenue and assets under management respectively. These include Apple, Bank of America, General Motors, AstraZeneca, Google and Unilever.
- Finally, [RE100](#) is a collaborative, global initiative of influential businesses committed to 100% renewable electricity, working to massively increase demand for - and delivery of - renewable



energy. Companies joining RE100 are encouraged to set a public goal to procure 100% of their electricity from renewable sources of energy by a specified year. Eighty-three RE100 companies have made a commitment to go 100% renewable. Committed companies include Ikea, BMW Group, Bank of America, Facebook, Johnson & Johnson, Microsoft, Nike and Starbucks, among others.

3.4 Investors

During COP 22, many noted that the role of investors and shareholders is even more important in light of the current political reality. A new [study](#) released by the Global Adaptation & Resilience Investment Working Group (GARI) found that over 70% of private investors surveyed see both risk and investment opportunity from the impacts of climate change. The conference was a chance for investors to showcase the actions they have taken since Paris to manage climate risk and seize low-carbon opportunities.

- The [Global Investor Coalition on Climate Change](#) is a joint initiative of four regional climate change investor groups from Europe, North America, Asia and Australia/New Zealand. They released the [highlights](#) of actions taken by investor in 2016. These included engaging with companies on carbon-reducing strategies, the deployment of capital to low-carbon assets, the decarbonization of investment portfolios and engaging with policy makers on climate policies.
- Since Paris, coalitions of investors with \$10 trillion of assets under management have combined efforts and used shareholder resolutions to push for better disclosure of companies' climate-related strategies—particularly in the fossil fuel industry. For instance, such shareholder resolutions were passed at the 2016 annual meetings of Anglo American, Glencore and Rio Tinto.
- An international coalition of asset owners with investments of over \$100 billion is developing a public tool that will make it possible for institutional investors to track whether company business strategies are aligned with pathways associated with governments' nationally determined contributions to emissions reductions or the broader global goal to limit global temperature rise to below 2°C. This new '[Transition Pathway Initiative](#)' is due to be launched before the end of the year.
- Investors will continue to provide more examples of low-carbon and decarbonizing investments in the [Low Carbon Investment Registry](#), the first public, online database showing examples of global low carbon investments made by institutional investors.
- At COP 22, a managing Director for Environmental, Climate and Risk research at S&P Global Ratings discussed the tools and benchmarks they create to help increase transparency and aid liquidity in the market to scale up funds that go towards ESG investing. These tools look at the transparency and governance of a bond to make sure that proceeds go to the right projects add to the systemic decarbonization of the economy. They also ensure that the 'green impact' is ranked in a relevant way so that as an investor you can know where to get the bang for your environmental buck.

- A managing director at the Bank of America Merrill Lynch discussed the difference between resilient investment (i.e. infrastructure proofed against water stress) versus resilience investment (i.e. products or services that help deliver benefits to companies around risk management, like remote sensing). As a bank, their focus is on the latter and they have created new financial products to meet these needs such as micro-insurance, green bonds, or resilience toolkits.

3.5 Communities, Youth and Gender

COP 22 showcased various initiatives hosted by a number of community groups and also showed the sustained leadership from youth representatives to continue driving forward on climate action. In fact, [Article 6](#) of the UNFCCC is specifically targeted to education, training, and public awareness climate change. Youth participation at the conference included youth-led side events, such as the [Intergenerational Inquiry on Climate Change](#) where they discuss the role of youth in the UNFCCC process. Another notable [side-event](#) was one ran by the research project on Climate Change, Agriculture and Food Sustainability where they discussed the worldwide gender gap in agriculture. Women tend to have less access to productive resources financial capital, and advisory services. Furthermore, they recognize the lack of incentives for youth to be involved in agriculture while identifying youth as an important source of innovative ideas. On behalf of the C40 Cities initiative, the mayor of Paris launched the Women4Climate initiative for women leadership tackling climate change. Women4Climate aims to recognize the unique contribution of women mayors as well as other leaders in securing the Paris Agreement and its delivery in the years to come. Some other notable gender related initiatives included:

- [GenderCC](#)'s "Gender into Urban Climate Change Initiative" (GUCCI) that assessed the relationship between climate change, gender and cities to understand the potential for tackling inequality and climate issues with well-designed urban spaces. GenderCC also developed the Gender Assessment Method for Mitigation and Adaptation ([GAMMA](#)).
- Women in Enviro and Development Organization ([WEDO](#)), a global advocacy organization, brought a number of key demands into Paris Agreement negotiation process. At COP22, their women and gender constituency raised several [more action areas](#) to including:
 - Greater coherence of efforts to implement gender-responsive climate policy
 - Guidelines and capacity building to ensure that gender is integrated into NDCs
 - Progress on women's full and equal participation in decision-making
 - Collaborative efforts to ensure that climate finance is gender-responsive[Winners included](#) initiatives involved strategies that provided solar cookers to preserve forests, community based sustainable water management, and strengthening women's ancestral and artisanal fishery to preserve mangrove resources.

- Asia Pacific Forum on Women, Law and Development's (APWLD) work on climate justice recognizes that women are more severely affected by natural disasters, and extreme weather events. They hosted the Gender Just Climate Solutions Awards' [initiative](#). This goal of this award is to raise awareness on gender responsive and equitable solutions for just climate action. The three categories were: technical climate solutions, non-technical climate solutions, and transformation climate initiatives.
- Women in Euro for a Common Future ([WECF](#)) hosted an interactive [event](#) to highlight the institutionalized barriers to women's participation at all levels of decision making from household, to international levels. Another activity of theirs is to implement women's participation through clear gender strategies such as board of directors' quotas (statute states that min 40% of positions should be aiming for 50%).

3.6 Technology

Despite changing political tides, leaders at COP 22 urged that technological advancements will continue to move us forward even where policy fails and that we are now in a technology-driven, low-carbon transition. Some of the advancements in technology and technology investments include:

- [Mission Innovation](#) is a global initiative to accelerate public and private clean energy innovation to address climate change, make clean energy affordable to consumers, and create green jobs and commercial opportunities. At COP 22, Finland and the Netherlands joined Mission Innovation, increasing the total member country count to 23, including the European Union. The member governments represent more than 80 percent of global clean energy investment, and have pledged to double their clean energy research and development funding over five years to around \$30 billion (USD) per year in 2021. Also at COP 22, Mission Innovation countries [launched](#) seven Innovation Challenges, including:
 - Smart Grids Innovation Challenge
 - Off-Grid Access to Electricity Innovation Challenge
 - Carbon Capture Innovation Challenge

- Sustainable Biofuels Innovation Challenge
- Converting Sunlight Innovation Challenge to create storable solar fuels
- Clean Energy Materials Innovation Challenge
- Affordable Heating and Cooling of Buildings Innovation Challenge

Through these Innovation Challenges, Mission Innovation members aim to encourage increased engagement from the global research community, industry, and investors, while also providing opportunities for new collaborations between Mission Innovation members.

- Investors are also funneling funds into renewable energy technology in emerging markets. For instance, Caisse de dépôt et placement du Québec, a major Canadian institutional investor, set up an India office and committed to invest [\\$150 million in India renewable energy projects](#) in next three years. The initiative is CDPQ's first emerging market clean energy investment.



3.7 Adaptation and Resilience

While the focus of COP 22 was unsurprisingly on emissions reductions, climate adaptation and resilience is top of mind for those nations most vulnerable to the impacts of climate change. Since climate adaptation and [resilience is inherently capital intensive](#), discussions on this important topic often center around the deployment of capital resources and financial mechanisms for these types of projects.

- There were [several announcements](#) of non-state initiatives to mobilize financial mechanisms to fund adaptation and resilience projects. One such product is the Marrakech Investment Committee for Adaptation (MICA) Fund, the first ever private adaptation and investment vehicle of its kind. The \$500 million MICA Fund is a combination of concessional finance and private investment capital from The Lightsmith Group, BeyA Capital, the Global Environment Facility (GEF), the Government of Morocco, and GARF private investors. Aside from its work with MICA, [GEF](#) has also leveraged \$87 million more for adaptation projects in developing countries.
- Munich Re has launched its [Munich Climate Insurance Initiative \(MCII\)](#), which pioneers innovative risk management, insurance and related risk transfer solutions in combination with other approaches to manage climate-related risks. The MCII also seeks to support policy-making processes to protect the livelihoods of vulnerable communities against climate and weather-related risks.

- Investors are buying up green bonds at [record levels](#) and substantially more issuances are expected going forward in light of the key role of green infrastructure investment in tackling climate change. Over \$65 billion of green bonds were issued through early November, a 50% increase from about \$42 billion in 2015. A managing Director for Environmental, Climate and Risk research at S&P Global Ratings said that the green bond market is increasingly being directed towards adaptation projects. For instance, he noted that the US municipal market is seeing more and more adaptation bonds being issued.
- With input from investors and [Ceres' Investor Water Hub](#) members, the Climate Standards Board approved new, ground-breaking criteria for climate-resilient water bonds, “providing investors with a verifiable, science-based screening process to evaluate bond investments for financing sustainable water-based infrastructure projects”.
- Finally, the [African Development Bank](#) (ADB) presented a concept note on [Adaptation Benefit Mechanisms](#) (ABM), which aim to create a business model to encourage private sector investment in adaptation. Through the mechanism, Adaptation Benefit Units – which represent the verified outcomes or outputs of adaptation projects – would be bought and sold. The ADB is currently looking for partners to help pilot some of the first ABM-related projects.

3.8 Engineers

In this next stage of climate action, where we rely more on private sector and technology-driven change, focus on regional and local-level government initiatives and move from agreement to implementation, engineers will play an increasingly important role. Throughout the conference, we continued to hear that engineers must not wait for ready-to-use climate change solutions to fall on their laps. Instead, engineers must actively engage with climate scientists and policymakers to develop pragmatic solutions for climate change mitigation and adaptation. Engineers' systems thinking approach can help translate the emissions reduction and resiliency goals contained in nationally-determined and national adaptation plans into action and general discussions of climate goals into practical applications for organizations. Engineers' technical expertise will be called upon for projects ranging from the technical details of monitoring and verification systems to larger-scale controversial techniques such as geoengineering and solar radiation management.

At the Low Carbon Emissions Solution Conference, held alongside COP 22, engineers were mentioned multiple times as needing to set coming technology trajectories and work with climate scientists to implement solutions. These types of mentions were increasingly common, with some private sector companies detailing the challenges they have had to get “engineers on board” with considering climate change impacts.

Engineers can help take the longer-term science and ensure it is properly considered and weighted in decisions made on the ground today and in the future. We encourage

WFEO and its partners around the globe to push towards this type of innovative and pragmatic guidance.

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