

22 PROJECTS THAT CAN HELP THE PARIS AGREEMENT **SUCCEED**

IN THE LEADING GREENHOUSE GAS EMITTING COUNTRIES



AUGUST 2017

Climate Scorecard Report #12

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22 Projects that Can Help the Paris Agreement Succeed: Climate Scorecard Country Summary Report #12

ACTION ALERT

ACTION ALERT FOR POLICY MAKERS, ENVIRONMENTAL NGOS, RESEARCH CENTERS, BUSINESS LEADERS, AND CONCERNED CITIZENS

Contact your nation's President or Prime Minister, Environment Secretary, and leaders in your states or provinces. Ask them to increase their efforts to reduce your nation's greenhouse gas emissions to help the Paris Agreement succeed. Suggest that they replicate and scale up projects that have been proven successful in other countries. Send them this report that contains specific ideas.

INTRODUCTION

In Climate Scorecard Report #12, each Climate Scorecard Country Manager has filed a brief on projects in his/her country that have the potential to help their country fulfill its pledge to the Paris Agreement. The Projects cover a range of different sectors including: building and construction (Japan, Canada, Russia); land use and forestry (Brazil, France, Indonesia, Thailand); energy (Argentina); holistic urban planning (Australia); cap and trade programs (China, Russia, South Korea); rural electrification (Nigeria, South Africa); and community mobilization efforts (Italy and India).

These projects have been chosen not only because they are an innovative ways to help meet each nation's emission reduction pledge to the Paris Agreement, but also because they are scalable and replicable.

In our previous Climate Scorecard Report #11, we highlighted the worrisome trend of countries that are standing still or falling behind in their commitments to the Paris Agreement. In this Report #12, we highlight efforts that countries can use to further reduce their CO2 emissions.

ARGENTINA

Submitted by Climate Scorecard Country Manager
DUSTIN ROBERTSON



Argentina–The RenovAR Program

In its revised Intended Nationally Determined Contribution (INDC), Argentina pledged to unconditionally reduce carbon emissions to 483 MtCO₂e by 2030. This goal will be met through a series of measures in different sectors including energy, agriculture, forests, transport, industry and waste.

Perhaps the most significant actions so far have come in the domain of renewable energy. Across the country, large-scale wind, solar and other renewable projects are being implemented in an attempt to shift Argentina's energy matrix and reduce emissions. The major thrust behind Argentina's strong turn towards renewable energy has been organized under the Government's RenovAR program that was launched in 2016. At the start of the program, less than 2% of Argentina's energy came from renewable sources, but the country intends to increase that number to 8% in the short term and to 20% by 2025. As the country increases production of renewable energy, it should reduce its reliance on fossil fuels. Energy is Argentina's highest GHG emitting sector accounting for around 43% of total emissions, so action in this domain will have a huge impact and put the country on the right path to meeting its INDC commitments.

So far there are 71 projects underway through the RenovAR program which amount to a total of 3,023 Megawatts of installed capacity. The program capitalizes on Argentina's unique natural and geographical characteristics to reduce the country's dependence on high-emitting energy sources. One of the most important sites of Argentina's renewable energy revolution is Chubut Province in the south where onshore windfarms are already producing 137.7 Megawatts. Jujuy Province in the north is the site of large-scale solar projects that will produce 300 Megawatts when completed. As the RenovAR program continues, renewable energy production will be increased in these regions as well as in other parts of the country.

The RenovAR program is ambitious but could be replicated in any country that makes a serious commitment to increase its renewable energy output.

Learn More

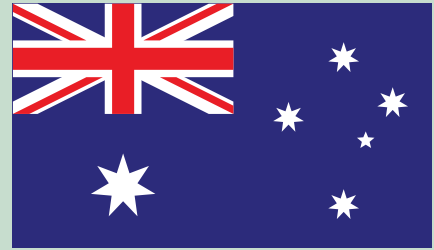
See a map of projects undertaken in rounds 1 and 1.5 of the RenovAR program see https://twitter.com/Renovables_Ar/status/872486792938889217

For full description and analysis of actions under RenovAR program <https://puntoverdeblognet.files.wordpress.com/2017/06/el-mapa-de-las-renovables-en-argentina.pdf>

Read Argentina's revised INDC <http://www4.unfccc.int/ndcregistry/PublishedDocuments/Argentina%20First/17112016%20NDC%20Revisada%202016.pdf>

AUSTRALIA

Submitted by Climate Scorecard Country Manager
HANNAH CAMPI



Australia–The City of Melbourne

The city of Melbourne has strived to become one of Australia's most sustainable cities by creating a comprehensive environmental plan that addresses climate resilience, emissions reduction, livability, and more. The variety of initiatives including community gardens and bike share programs have been well received by residents who cite lifestyle improvements in addition to sustainability as a benefit of the program. This integration and synergy with other aspects of daily life is crucial to the success of any sustainability or climate initiative. With a problem so looming, it can be overwhelming for citizens to integrate addressing climate change into their already busy lives. Melbourne's success comes in part from recognizing this and providing change that is easy for its citizens to adopt, which in turn will increase their stake and support for other less tangible initiatives.

This human-centric approach allows for more involvement from citizens and creates a more comprehensive plan for reaching Australia's Paris Agreement emissions reduction pledge. By allowing cities to address the needs of the community in a way that also reduces environmental impact, they are creating a system that can be sustained long term.

Even prior to the signing of the Paris Agreement, Melbourne had been developing an emissions reduction plan for the city. The city has a self-imposed goal to have Net Zero Emissions by 2020 and has written a plan to achieve this goal. Because this plan was designed on the city-scale, it allows for flexibility and customization that is better suited for the needs of the citizens, which can decrease opposition some may feel to an outside plan such as the Paris Agreement. Designing policies with the people they affect at all scales is critical to success, sustainability, and scalability of emissions reductions strategies.

These municipal plans could help Australia meet its INDC pledge of an emissions reduction of (including LULUCF) 26–28% below 2005 levels by 2030. Without support from the government at lower levels, the Australian federal government will have a much more difficult time in moving the country forward as a whole.

Learn More

<https://www.melbourne.vic.gov.au/SiteCollectionDocuments/zero-net-emissions-update-2014.pdf>

BRAZIL

Submitted by Climate Scorecard Country Manager
LAURA VALENTE DE MACEDO



Brazil–IMAZON (Instituto do Homem e Meio Ambiente da Amazônia)

In 2004, deforestation in the Amazon region reached record levels. In 2009, Pará state accounted for the highest deforestation rate in the country, corresponding to 20% of its territory. It is also a highly conflicted area, where violence and corruption are widespread, and environmentalists have been murdered in recent years. Land tenure and illegal harvesting of timber remain key problems faced by authorities at all levels. Lack of ability to address land use change and forestry is a threat to Brazil's capacity in meeting its commitments within the global climate regime.

In 2008, the Ministry of Environment (MMA) issued a list of the critical areas and cities responsible for deforestation in the Amazon region. Those with the highest rates were included in a "black list" and suffered severe sanctions, such as restricted access to rural credit and embargoes on products from illegally deforested areas. Paragominas was top of the list, and faced action by the federal Public Attorney's office. The municipality decided to act: together with institute IMAZON, the city implemented an initiative to register property owners, legalize and control timber harvesting and cattle ranching in its territory. In 2010, Paragominas was the first municipality to be removed from the deforestation list. With IMAZON's technical support, the coordination of stakeholders such as the mayor, council members, farmers unions, the public attorney's office at state and federal levels, the state environment secretariat, the MMA and others were key to the initiative's success. Together they inspired the Pará government to develop the Green Municipality program. Cities wishing to be removed from the black list or to avoid entering it adhere to a pact to reduce deforestation by 80%. In 2013, Paragominas reported zero deforestation.

Between 2009 and 2013, IMAZON implemented a project called Building Blocks for the Socioenvironmental Management of Pará Municipalities Critical to Deforestation, in partnership with the state government of Pará's program Green Municipalities, and funded by the Amazon Fund (managed by Brazil's national development bank BNDES). The project was built on the Paragominas experience, and encompasses 25,482 sq. miles, including eleven key municipalities in Pará state. The initiative involves stakeholders such as state and federal government officials, the Public Attorney's office, union representatives, the Vale Foundation, and the municipalities. It aims to reduce deforestation and land degradation in the Southeast region of Pará and to increase the number of properties registered in the Environmental Rural Registry (Cadastro Ambiental Rural – CAR in Portuguese). The project also evaluates the potential for implementation of financial mechanisms to promote forest conservation such as REDD+. The project demonstrates its potential for scaling up and replication, through actions focused on stakeholder participation, community empowerment and capacity building, as well as monitoring and control using GIS.

IMAZON's technical support includes digital mapping in 1:50,000 scale using satellite images from RapidEye, as well as building the capacity of municipal staff to use equipment for monitoring and avoiding deforestation, such as geoprocessing and remote sensing. The institute also issues monthly newsletters and provides information online about the project. The project engages the public via high profile events and provides up to date information.

The work of IMAZON should help Brazil implement its Paris Agreement pledge. Brazil officially ratified the Paris Agreement on September 21, 2016, committing to reduce emissions to 1.3 GtCO₂e by 2025 and 1.2 GtCO₂e by 2030 (Government of Brazil, 2015), as stated originally in its INDC (Intended Nationally Determined Contribution). This is equivalent to 37% and 43% below 2005 emissions levels including LULUCF (GWP-100; IPCC AR5).

However, recently IMAZON's monitoring system has detected frequent signs of forest degradation due basically to selective extraction of timber and damage caused by fires, which have intensified in the region. In addition, as of 2016, the federal government has yielded to pressure from rural property owners and revoked protection of important forest areas in the region. Consequences are yet to be determined.

Learn More

<http://imazon.org.br/slide/green-municipalities/?lang=en>
<http://imazon.org.br/programas/?lang=en>

Sources in Portuguese

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<http://www.municipiosverdes.pa.gov.br/>
<https://www.usp.br/mudarfuturo/cms/?p=521>

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<http://imazon.org.br/PDFimazon/Ingles/books/Diagnostic%20of%20Key%20Success%20Factors%20%20Restoration.pdf>



Canada–The Carbon Impact Initiative

The United Nations Environmental has reported that buildings account for 40% of emissions as a result of the construction, operations and maintenance over the life of a building.

The Carbon Impact Initiative (CII) is an industry-wide effort by the EllisDon Corporation (a world leading construction/building firm) to contribute to a low-carbon economy in Canada by providing a strategic direction for future buildings and communities. To launch this initiative, EllisDon reached out to leading contributors in sustainable development and advanced energy technologies in the development of large-scale commercial buildings, energy, communications and infrastructure across Canada. CII seeks to build and retrofit the next generation of buildings and infrastructure to surpass new performance standards; and, in doing so, design and promote an industry systems approach to offset the carbon footprint in current building development, construction, and operations. It currently has 3 pilot projects and there are 15 others in the pipeline.

EllisDon created the CII as a means to engage market leaders across sectors in a response to new priorities. Industry will bear the brunt of the responsibility to meet Canada's commitment to the Paris Agreement to reduce greenhouse gas (GHG) emissions by 30% below 2005 levels in 2030. The public sector needs to rely on industry practices to guide development and carbon pricing. The Carbon Impact Initiative will make an important contribution to this effort.

Learn More about the CII Strategy

Largely adapted from <http://lowcarbonagenda.ellisdon.com/actionplan.pdf> and www.ellisdon.com/sustainable-building

The need for retrofits and net zero new building design <http://policyoptions.irpp.org/magazines/march-2017/constructing-our-future-with-low-carbon-buildings/>

What is needed next from the Pan-Canadian Framework <http://climateactionnetwork.ca/2017/03/21/action-update-canadian-climate-policy-2/>



China–National Cap and Trade Program

President Xi Jinping announced last week that China will push ahead with an ambitious plan to build the world's largest market for carbon emission permits. This national cap-and-trade program will expand from the seven regional pilot emissions trading systems established in the country's 12th Five Year Plan (in 2011). The program designated 5 cities (Beijing, Chongqing, Shanghai, Shenzhen and Tianjin) and 2 provinces (Guangdong and Hubei) where government-set ceilings of pollution were divided into emission permits, issued, and sold to businesses. By selecting polluting industries, participating factories and firms become inclined to lower their emissions—at first to meet their allocated quota, and if successfully done, to sell or save leftover permits at market prices. In this manner, China's government can over time lower the allowed emissions, making permits scarcer and magnifying price pressures on companies to cut pollution. Cap and trade, in effect, generates greater accountability to what is now an economic externality.

Operation and Evaluation of the Seven Pilots:

The seven pilot projects were limited to covering carbon dioxide and, in terms of industry coverage, set to include high polluting industries; firms involved in heat and electricity production, iron and steel, nonferrous metals, petrochemicals, pulp and paper, glass and cement. Each of the pilot schemes were uniquely designed based on local characteristics and were monitored, reported and verified by third party auditors.

The average credit price ranged from \$4.1 USD in Hubei to \$12.4 in Shenzhen. The Chinese pilots encountered similar challenges to global ETS programs, in which low carbon prices and unsatisfactory trading volumes prevent the efficiency of the markets. Although the trading levels were very low, by July 2015, more than 38 million tons of carbon dioxide had been traded on the carbon markets. China Network Television reported in August 2014 that, as a whole, the pilot projects allowed for a 5% reduction in China's carbon intensity in the first six month of that year. Demonstrating the success of the schemes, China's national government projected a reduction of carbon intensity by 40 – 45% from 2005 levels by 2020.

The Chinese pilot programs have provided important insights for the scaling and expansion to a national market, with the trial and error demonstrating that it is possible to implement ETS in low-income environments, while revealing structural deficiencies such as illiquidity and over-allocation.

National scheme: progress and design

While the pilot programs have acted as important test runs for China, implementing a national market proves to add increasingly challenging issues. The National Development and Reform Commission, the government agency preparing the market, decided that instead of launching all eight industries originally planned, the market would first focus on three of the heaviest polluting industries: coal-fired power plants, cement, and aluminum. The narrow range of sectors allows for a more focused approach that will enhance success. Moreover, China's statistics and enforcement regulations could prove to be unreliable and may skew outcomes of the markets.

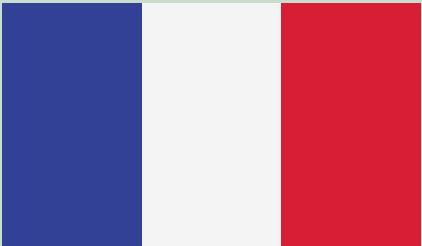
Overall, a successful start to a carbon market will put China in a great position as an international leader for climate action. It should help China fulfill its pledge to the Paris Agreement to reduce CO₂ emissions per unit of GDP by 40–45% below 2005 levels by 2020.

Learn More

<https://www.scientificamerican.com/article/china-will-start-the-world-s-largest-carbon-trading-market/>
<https://www.nytimes.com/2017/06/23/world/asia/china-cap-trade-carbon-greenhouse.html>
<http://thediplomat.com/2015/09/what-you-need-to-know-about-chinas-cap-and-trade-announcement/>
<http://globalsummitryproject.com.s197331.gridserver.com/chinaperspectives/research-memos/chinese-carbon-trading-pilots-progress-and-current-status/>

FRANCE

Submitted by Climate Scorecard Country Manager
ROY ANDRAOS



France–The 4 per 1000 Initiative

The French Government has been promoting different participatory/multi-stakeholder initiatives that can help the country meet its INDC pledge to this Paris Agreement. Following the COP21 (cf. the Lima-Paris Action Agenda), France has clearly shown its interest in and commitment to developing agro-ecology in order to ensure sustainable soil management and reduce atmospheric CO₂ emissions. Among the key/supported initiatives, the National Institute of Agricultural Research (INRA) launched the 4 per 1000 initiative ("L'Initiative 4 pour 1000"), as a participatory/private-public approach that encourages farmers to enhance their economic and environmental performance by increasing carbon sequestration in soil. France's commitment is to ensure that more than 50% of its agricultural holdings will have implemented the agro-ecology initiative/approach by 2020.

The 4 per 1000 initiative, launched during the 2015 COP21, aims to demonstrate the crucial role agricultural soils can play in improving food security and limiting climate change. The scientific theory

underlying this initiative states that a 4% annual growth rate of the amount of carbon stocked in the soil (cf. carbon sequestration) would make it feasible to limit and even halt the annual increase in atmospheric CO₂.

The positive impact is twofold: on the one hand, the increase in carbon stocks in the soil would lead to halting the increase in atmospheric CO₂ (and, therefore, reducing GHG) and; on the other hand, this increase would also lead to more fertile agricultural soils and an improved ability to cope with climate changes. So far, the combat against climate change has mainly focused on the restoration/protection of soils and forests. The above-described initiative focuses on covering soils as a means of making them richer in organic materials, i.e. richer in Carbon. The 4 per 1000 initiative addresses three key/global issues that include, the degradation of soil (threatening 40% of the dry land in the world), the threats to food security and the extreme events resulting from/amplified by climate change (e.g. drought). Simulating the effects of this initiative on a global scale shows that increasing Carbon sequestration in the first 40 cm of the soil by +0.4% would lead to an anthropogenic equilibrium of CO₂ and the halting of emissions due to land use change. Applied to the surface of soils, i.e. to an equivalent stock of 860 GtC (Gigatons of Carbon), the annual 4% target would translate into a 3.6 GtC of additional Carbon stock that would counter-balance the increase in atmospheric CO₂.

The potential behind this initiative is significant on a global scale, i.e. 570 Million farms and more than 3 Billion people living in rural areas could implement these practices. The fact that environmental actors started promoting this initiative only recently (following the COP21 in 2015) makes it difficult to measure and evaluate on a large/national scale. Nevertheless, there are examples that show the replicability of this initiative at the EU/International level. The Portuguese Carbon Fund, for instance, estimated the Carbon storage/stock resulting from the rehabilitation of degraded grasslands at 1 Million Tons (e.g. using appropriate fertilizers, adapted forage plants, etc.). This initiative's contribution to meeting France's INDC pledge is, therefore, twofold: on the one hand, implementing the initiative nationally will result in the above-described benefits. On the other hand, the replicability of this initiative at the international/EU level will help the EU reach the 40% GHG emission reduction target by 2030.

Learn More

<http://4p1000.org/>

<http://www.gouvernement.fr/cop21-les-engagements-nationaux-de-la-france-3403>

<https://mediterranee.cirad.fr/recherche-en-partenariat/quelques-projets/systemes-d-elevage/mediterranean-livestock-farming-systems>

<https://inra-dam-front-resources-cdn.brainsonic.com/ressources/afile/312559-2a97f-resource-4-pour-1000-4-pages-version-francaise.html>

<http://climatescorecard.org/wp-content/uploads/2016/04/Top-25-Greenhouse-Gas-Emitter-Paris-Pledges.pdf>

GERMANY

Submitted by Climate Scorecard Country Manager
MARY NTHAMBI



Germany–The German Climate Action Plan 2050

In its INDC pledge to the Paris agreement, Germany proposed reducing greenhouse gas emissions (GHGs) by 40% by 2020 and up to about 95% in 2050, as compared to 1990 levels. To achieve this aim, Germany drafted a policy known as the Climate Action Plan 2050, which provides the exact target measures of greenhouse gas emission reductions in individual sectors including energy, industry, buildings, agriculture and transport among others. Action Plan 2050 is a product of a coalition agreement reached in 2013 by the Christian Democratic Union (CDU), Christian Social Union (CSU) and Social Democratic Party (SPD) to define the emission reduction targets with a final target of 80 to 95 % in comparison to 1990 by 2050. The policy entered into force on 4th November, 2016.

Germany is the strongest economy in the EU and its individual emissions are higher than the EU average. It is also worth noting that Germany also meets its emission reduction goals under the European Emissions Trading Scheme (ETS) and the EU Effort Sharing Decision (ESD) mechanism used to chart EU compliance with the Paris agreement. A sector breakdown of emission reduction targets in the German Climate Action Plan 2050 is provided below.

Sectoral emissions reductions targets in Germany

Area of action	1990 (in million tonnes of CO ₂ equivalent)	2014 (in million tonnes of CO ₂ equivalent)	2030 (in million tonnes of CO ₂ equivalent)	2030 (%reduction compared to 1990)
Energy sector	466	358	175-183	61-62%
Industry	283	181	140-143	49-51%
Buildings	209	119	70-71	66-67%
Transport	163	160	95-98	40-42%
Agriculture	88	72	58-61	31-34%
Subtotal	1209	890	538-557	54-56%
Other	39	12	5	87%
Total	1248	902	543-562	55-56%

Source: www.bmub.bund.de (Federal ministry for Environment, Nature conservation, Building and Nuclear Safety)

Climate Action Plan 2050 has contributed to success stories with regards to emission reductions in different sectors in Germany. For instance, in the transport sector, the Climate Action Plan 2050 has limited emissions to 65-68 g CO₂/km by 2025 and up to maximum of 50 g CO₂/km for passenger cars and light commercial vehicles in 2030. By 2020, it intends to produce 1 million e-cars that are expected to help reduce targeted emissions from the transport sector.

Also, in the agriculture sector, Germany intends to reduce the utilization of nitrogenous fertilizers by moving from the conventional crop production to organic agriculture and limiting fertilizer utilization by 70 kg N/ha by 2032. In addition, the Climate Action Plan 2050 reinforces existing policies to ensure buildings attain a climate-neutral stock state by 2050.

However, to achieve major success stories on emission reduction in Germany from the perspective of the Climate Action Plan 2050, a number of gaps need to be addressed more precisely. For example, Action Plan 2050 proposes the reduction of meat consumption which accounts for the largest greenhouse gas emissions footprint per kilogram, but it does not give precise ways for doing this; nor to cut the 40% emissions; nor does it describe how and when coal-fired power plants should stop generating electricity.

Learn More

http://www.bmub.bund.de/fileadmin/Daten_BMU/Download_PDF/Klimaschutz/klimaschutzplan_2050_kurzf_en_bf.pdf

<http://www.dw.com/en/a-close-look-at-germanys-climate-action-plan/a-36386077>

https://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/WWF_Assessment_of_Germany_s_Climate_Action_Plan_2050

INDIA

Submitted by Climate Scorecard Country Managers
RANJAN PANDA



India–The Jal Kranti Abhiyan (Water Movement Initiative)

Drought is nothing new in India. However, with changing climatic conditions, both the frequency and impact of it is increasing. The monsoon season that provides 80 per cent of the rainfall in the country, is witnessing a disturbing change, according to a 2014 study by the Stanford Woods Institute of Economics. According to this study, there is substantial variability within the monsoon season, including fluctuations between periods of heavy rainfall (wet spells) and low rainfall (dry spells). "These fluctuations can cause extreme wet and dry regional conditions that adversely impact agricultural yields and water resources. Sixty per cent of the population depends on agriculture, and monsoons script people's lives." Tapping the rainfall during the monsoon days is therefore the most resilient effort that Indian farmers, most of whom have small farms, can do to adapt to climate change.

The western region of Odisha State has been a resource-rich region and also a region with a long history of good and sustainable practices to manage these resources. One can easily find that one of the prime reasons for increasing frequency of drought is the neglect of the region's traditional water-harvesting structures.

An initiative launched about a decade and half ago by Water Initiatives Odisha (WIO), a leading network of voluntary organizations, farmers and concerned citizens, is helping thousands of villagers restore their traditional water bodies in an ecologically sustainable approach. The initiative revives traditional rainwater harvesting structures and systems that are helping farmers in many villages to successfully fight drought. Hence, they are building resilience against climate change induced drought. About 95% of the world's farms are small-scale and two billion people depend on small farms for their livelihood. Small farmers of the world are always under tremendous pressure. They have taken to themselves a daunting task of feeding the world despite being poor themselves. Small land holding does not make them count as sufficient units to get necessary support from their respective governments, and nature's vagaries affect them the most. To fight climate change, therefore, building resilience of the small farmers is most important. This initiative in Odisha is exactly doing that.

The Government of India has taken up several initiatives to fight drought and build climate resilience through promotion of water security in the villages. One such effort is Jal Kranti Abhiyan (Water Movement Initiative) that is helping to scale up initiatives being promoted by WIO and other civil society groups. Jal Kranti was launched by the Ministry of Water Resources in 2015. This initiative aims at converting one water scarce village in each district of the country into a water surplus village through a holistic and integrated approach that adopts conservation techniques. Activities proposed under this include rainwater harvesting, recycling of wastewater, micro irrigation for using water efficiently and a mass-awareness program. The goal is to build resilience through revival of traditional rainwater harvesting systems and ecological approaches related to them.

India's INDC sets a goal of 175 gigawatts (GW) of generating renewable power capacity by 2022. The goal is to increase its share of non-fossil-based power capacity from 15% today to about 40% by 2030. This commits India to reduce its emissions intensity per unit of GDP by 33% to 35% below 2005 by 2030, and to create an additional carbon sink of 2.5 to 3 billion tonnes of carbon dioxide through additional tree cover. It also prioritizes several efforts to build resilience to climate change impacts. The above efforts will contribute to the adaptation efforts through rainwater harvesting and help create carbon sinks through enhanced green cover. Most important, its components are replicable in the entire central highlands and hence it has the potential to contribute greatly to meeting India's INDC pledges.

Learn More

The Key to a Food-Secure World : Small Farmers and Traditional Sustainable Practices, by Ranjan K Panda, TerraGreen Delhi, February 1, 2015.

How much wetland has the world lost? Long-term and recent trends in global wetland area, by Nick C. Davidson, Marine and Freshwater Research, CSIRO PUBLISHING 2014.

Kharamal – A Green Spot in a Brown Belt, by Ranjan K Panda, Yojana, July 2010.

Simple solutions to big water problems in Balangir; Ranjan K Panda, 'InfochangeIndia', November 2009.

Traditional Water Harvesting, the answer to western Orissa's perennial drought woes; Ranjan K Panda, 'The World Prout Assembly', 2006

The Myth of Kalahandi, Richard Mahapatra and Ranjan Panda, 'Down to Earth', 30th March 2001.

INDONESIA

Submitted by Climate Scorecard Country Manager
TRISTAN GRUPP

Indonesia–Badan Restorasi Gambut (BRG)-The Peatland Restoration Agency

The president formed the Peatland Restoration Agency (Badan Restorasi Gambut) to restore 2.4 million hectares of degraded peatland by 2020. Last year's fires released 1.2 billion tons of CO₂. The target for 2017 is to restore 400,000 hectares of fire-vulnerable land. Half of this destroyed land is in concessions. Nazir Foed, president of BRG, stated that about 10% of that work has been completed. This slow start is largely due to BRG's current focus to map Indonesia's peatlands to improve management and planning as well as the logistical difficulties of working during the wet season, due to flooding and challenges in moving equipment. The seven priority provinces of the BRG are Riau, Jambi, South Sumatra, West Kalimantan, Central Kalimantan, South Kalimantan and Papua. BRG is also carrying out peatland inventory and hydrological mapping in these provinces. BRG's mission statement also includes reviewing permits and licensing on peatland management or on concessions built on peatlands which do not properly control peatland degradation and/or fire. The Indonesian government is also pushing concession owners to contribute to peatland restoration by implementing BRG's practices in their concessions.

BRG uses canals and water blocking to control water flow to restore the waterlogged conditions of peatlands so their carbon-rich soil is not vulnerable to burning. The waterlogged condition is also necessary to allow the land to continue to accumulate peat when the forest is restored, preventing decomposition of plant litter to be released as GHGs. These canals keep water levels stable, preventing fires. BRG plans to build 20,000 blocking canals, working with communities and local governments. In 2016, 16,000 canal-blockings were built. Preventing peat degradation and oxidation will significantly curb Indonesia's emissions. If BRG concentrates efforts on reforestation of mangroves, these peatland ecosystems can begin to recover. The recovery of mangrove forests on peatlands will ensure the land remains waterlogged, preventing oxidation. Mangroves also provide the forest litter necessary for peat buildup. Forestation projects to develop mangroves will sequester carbon and help Indonesia reach its pledge.

The Pastaza-Maranon swamp in Peru is among the largest peatlands in the world. There are also significant peatlands in Colombia and Brazil. There is an estimated 30 billion tons of carbon in Cuvette

Centrale peatland in between the DPRC and the Republic of the Congo. This is the world's largest tropical peatland. There are also significant African peatlands in Niger inland delta, Okavango and Sudd. Many of these tropical peatlands, which have the highest rates of peat build up, are threatened by degradation from land use change. BRG's restoration efforts could be applied in many of these countries. Even countries with a non-tropical climate could learn from the BRG; Finland has drained half of all of its peat bogs. Many countries could adopt BRG's practices to restore their degraded peatlands. BRG's efforts focus on dam and canal construction.

Indonesia's INDC pledge includes a unilateral reduction target of 29% below BAU emissions of GHG, including LULUCF, by 2030, plus a conditional 41% reduction target with sufficient international support. The LULUCF sector has contributed an average of 60% of total emissions over the last ten years, based on national data. By 2030, under the Indonesian Government's official BAU, emissions from LULUCF would be about one-third of GHG emissions.

The BRG could be significantly scaled up to help Indonesia reach its INDC pledge. It addresses the greatest barrier reducing GHGs in Indonesia; preventing the destruction of carbon stocks. Substantial funding should be awarded to BRG as it proves its ability to restore peatlands and mangroves.

ITALY

Submitted by Climate Scorecard Country Manager
MARTA MORELLO



Italy

As part of the Paris Agreement, the European Union, of which Italy is part, committed to abate GHG emissions by 40% by 2040 from a 1990 baseline. Emission reduction targets for individual countries are still being developed by the European Commission, but Italy has already demonstrated leadership by meeting its 2020 renewable energy goals early. In fact, already in 2014, the country reached its renewable energy sources share set by the EU. Today, over a third of Italy's current electricity needs are met by renewable sources for a total capacity of 54,000GW, mostly solar energy.

Part of the Italian success in installing renewable energy capacity lies within its innovative energy cooperative model. This model allows for the production and consumption of renewable energy at the local scale: a few citizens can form a cooperative that invest in one or more small scale, renewable energy plants and use the energy produced to satisfy their thermal and electric energy needs. Moreover, they are allowed to distribute excess capacity via local, smart grids either to nearby consumers or to energy storage facilities. Cooperative members become "prosumers" which means they are both producers and consumers of renewable energy. This model grants cooperatives energy independence and autonomy while paying lower energy bills. It is a true success story with significant environmental and economic impact.

The model of energy cooperatives per se is not new. Since the early 1920s small mountain communities took advantage of the cooperative format to access reliable energy supply that utility companies were not able to provide in remote locations (see cooperative of E-Werk Prad for example). Nowadays, with the diminishing cost of all renewable energy sources as well as energy storage options, the energy cooperative model is very appealing not only to isolated mountain villages but to towns of all sizes and types. Thanks to technological advances, it is much easier today to manage systems where renewable energy plants are connected to the electric and thermal demands of different user profiles, while minimizing transmission losses and allowing for energy storage. Innovation also allows for renewable energy mixes to occur (hydroelectric energy, wind, solar, biomass, and geothermic). The integration of different smart systems across users allows energy producers to slash costs and abandon inefficient fossil fuel systems.

This model is easily replicable and scalable as demonstrated by energy cooperatives thriving across the country and the rest of Europe. In Italy, over 3,000 municipalities produce more electric energy than they produce, thanks to renewable sources. Among them, 40 are considered 100% green where renewables satisfy both electric and thermal energy needs. Moreover, another 10 municipalities with a population over 100,000 inhabitants are also able to satisfy all electric needs through a mix of renewables. Examples are Parma, Ravenna and Foggia.

Learn More

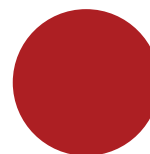
A recent report on green municipalities https://www.legambiente.it/sites/default/files/docs/comuni_rinnovabili_2017.pdf

A report on new models for renewable energy https://www.legambiente.it/sites/default/files/docs/energie_libere_quaderno_legambiente_legacoop.pdf

Read more about one of the historical cooperative here (Italian or German language) <http://www.e-werk-prad.it/>

JAPAN

Submitted by Climate Scorecard Country Manager
KENTA MATSUMOTO



Japan–Tokyo Metropolitan Cap and Trade System

In Tokyo, there is a successful cap and trade system that will help meet Japan's INDC pledge to the Paris Agreement, which is to achieve a 26% reduction in GHG emissions by 2030 compared to emission levels in 2013. This is the first urban-type emission trading system in the world. It was enacted in 2010 and now targets over 1,300 companies that consume more than 1,500 kiloliters of energy (converting into crude oil). Each company is required to reduce CO2 emission up to a certain amount. To achieve

each CO2 reduction target, companies participate in an energy saving trading system and trade their emission credits.

This system was made because metropolitan Tokyo seeks to be an environmentally friendly city with the smallest environmental pollution level in the world. To be such a city, it was necessary to raise the minimum level of GHG reductions from big companies and to reduce the total CO2 emission in the Tokyo metropolitan area.

Statistics show that the cap and trade system in Tokyo is successful. In five years (2010-2014), all participating companies achieved their given CO2 reduction targets, and about 1.4 million tons of CO2 was reduced as a whole. This represented a reduction of CO2 emissions by 25% compared with CO2 emission of companies in 2009.

The Tokyo Metropolitan cap and trade system is replicable and scalable because it is not a very complicated system and does not require any special technologies. If the system can be expanded to cover all of Japan, it could significantly increase the government's ability to comply with its INDC pledge to the Paris Agreement.

MEXICO

Submitted by Climate Scorecard Country Manager
RAIZA PILATOWSKY GRUNER



Mexico–La Trinidad–Community Managed Forests

If you had known La Trinidad—a settlement of 704 people in the middle of the Northern Mountain Range of Oaxaca—during the 1960's, you might have thought they were surely heading to an irreversible path of deforestation and loss of species. Managed by a paper mill, the forests of La Trinidad did not suffer only from environmental degradation and loss of carbon sinks. The community faced high rates of unemployment, bad labor conditions, and the impossibility of using and managing their own territory.

Fast-forward to today, and you will see a completely different picture: the forest is communally owned and managed, and the community determines its use and how the profits should be spent. This scheme has allowed them to set sustainable logging regulations, promote reforestation practices, and preserve forest resources. Moreover, the businesses derived from this context, like furniture carpentry and eco-tourism enterprises, provide employment opportunities that promote productive diversification, the improvement of public services and infrastructure, and are thought to be related to the low rates of migration from this region.

Through its struggle against the paper mill during the 1980's and returning to the communal management of resources, the community of La Trinidad was able to achieve forest conservation and reduction of deforestation, even before the inclusion of mitigation strategies in national policies. Their work has been recognized in recent years as both national and international institutions from the government, civil society and private enterprises have partnered with them to develop projects and ensure that this trend keeps going.

Like La Trinidad, most of the forest cover in Mexico (around 80%) belongs collectively to 8,500 communities that usually follow similar conservation schemes. This is reflected in the national reduction of greenhouse gas (GHG) emissions from land conversion and use that went from 13.4% in 1998 to 6.3% in 2010, being the only sector that has achieved mitigation at a national scale. This positive trend sets Mexico on the way to achieve its Paris Agreement National Determined Contribution (NDC) pledge of 0% rate of deforestation by the year 2030. This will also contribute to its meeting its unconditional Paris Agreement commitment of reducing 22% of GHG emissions by the same year using a Business As Usual scenario of emission projections based on economic growth in the absence of climate change policies starting from 2013.

Communal management of forests is not unique to Mexico, but it is common practice in several countries of the Global South, and it is a model that can be copied to reduce emissions due to deforestation in other countries.

Learn More

About La Trinidad.

In Mexico, forests deliver for jobs and climate commitments: <http://www.worldbank.org/en/news/feature/2016/05/10/in-mexico-forests-deliver-for-jobs-and-climate-commitments>

Emigración en reversa: de Estados Unidos a hacer muebles en Oaxaca (Spanish): <http://www.worldbank.org/en/news/feature/2016/08/31/reverse-migration-furniture-forests-oaxaca>

En La Trinidad, explotación racional del bosque (Spanish): <http://www.jornada.unam.mx/2016/07/05/sociedad/036n1soc>

An Analysis of Forest-Based Offset Production in Oaxaca, Mexico Based on Critiques of the Forest Carbon Market: <https://pdfs.semanticscholar.org/2681/d1cf45e19f917b93ba08ca5a42b51aef265f.pdf>

Emissions in Mexico

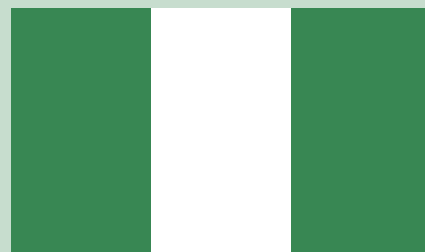
Mexico's Fifth National Communication to the UNFCCC (Spanish, Executive summary in English): <http://unfccc.int/resource/docs/natc/mexnc5s.pdf>

Mexican Report on Climate Change. Volume 3. Greenhouse Gas Emission and Mitigation (Spanish): http://www.pincc.unam.mx/libro_reportemex/reporte_mexicano_vol_III.pdf

Mexico's INDC for the Paris Agreement: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Mexico/1/MEXICO%20INDC%2003.30.2015.pdf>

NIGERIA

Submitted by Climate Scorecard Country Manager
CHIUDO EHRIM



Nigeria–Nigerian Rural Electrification Policy–2005

The Nigerian Rural Electrification Policy–2005 aims to achieve rural access to electricity through the cost-effective use of grid and off-grid approaches as well as standalone systems (GLZ, 2015). The Federal Government of Nigeria, in recognition of the potential for renewable energy sources to facilitate extension of electricity services, has installed more than 115MW of off-grid solar-based and PV/wind hybrid systems across the country (GLZ, 2015). The Power Africa project of the United States Agency for International Development is providing support to 14 Greenfield photovoltaic projects totaling over 1125 MW of power (USAID, 2017). Also, initiatives such as Solar Nigeria supported by United Kingdom's Department for International Development have powered more than 180,000 homes since mid-2015 (Thisday, 2016).

The Federal Ministry of Environment initiated a Renewable Energy Program as part of its national strategy to fulfill its obligation to the United Nations Framework on Climate Change and meet its Paris Agreement greenhouse gas emissions reduction targets. Through the program's rural energy access project, solar-based and biomass-to-energy projects are planned for several states in Nigeria (Federal Ministry of Environment, 2014).

Nigeria made a commitment to the Paris Agreement to reduce its greenhouse gas emissions by 20% (unconditional) and 45% (conditional) compared to a business-as-usual (BAU) scenario. A key measure that the country identified in its Intended Nationally Determined Contribution (INDC) to meet its mitigation objectives is to generate 13,000MW of electricity by means of off-grid solar PV, and to expand rural electrification services through decentralized, cost-efficient renewable energy solutions. This strategy has the potential to reduce the country's greenhouse gas emissions by 31 million tonnes per year by 2030 (UNFCCC, 2015). An important objective of the Nigerian Rural Electrification Policy (NREP) and its National Rural Electrification Implementation Strategy and Plan–2014 is to decentralize rural electrification and use renewable energy options wherever cost-effective and feasible to increase rural access to electricity; hence the NREP will contribute substantially toward meeting Nigeria's INCD Pledge.

The Nigerian Rural Electrification Policy–2005 can be replicated and scaled in other parts of Sub-Saharan Africa. This is because of the similar power challenges experienced by countries in the region as well as similar socioeconomic/cultural attributes and climatic conditions. Renewable electricity generation is financially attractive for the region and particularly so for households that are not connected to the national electricity grid. There is also the potential for many small and medium scale entrepreneurs to find work in the sector (UNFCCC, 2015).

Learn More

Nigeria's Intended Nationally Determined Contributions is available here: http://www4.unfccc.int/ndcregistry/PublishedDocuments/Nigeria%20First/Approved%20Nigeria%27s%20INDC_271115.pdf

More information on rural electrification in Nigeria can be found at: <https://www.giz.de/en/downloads/giz2015-en-nigerian-energy-sector.pdf>

More information on USIAD Power Africa projects in Nigeria can be found here: <https://www.usaid.gov/powerafrica/nigeria>

The news article on Solar Nigeria is available at: <http://www.thisdaylive.com/index.php/2016/09/08/92000-nigerian-homes-electrified-with-solar-power-in-six-months/>

More information on the Renewable Energy Programme of the Federal Ministry of Environment is available here: <http://renewableenergy.gov.ng/projects/>

RUSSIA

Submitted by Climate Scorecard Country Manager
VERONIKA KOZLOVA



Russia

There are currently 17 emission trading schemes and more than 40 different carbon compliance units in Russia. Nevertheless, there exists certain organizational constraints and obstacles that prevent a smooth carbon trading system, such as risks of double counting and a lack of transparency in emission trading exchanges.

There also has been no common platform that could unify different carbon exchanges. To address this issue, the Russian company, "Russian Carbon Fund," has created a blockchain platform for carbon trading.

Blockchain technology is noted for its security since data are stored on hundreds and thousands of computers connected to one network. In order to crack the system, access is required to all of the linked computers, not just one. Moreover, blockchain guarantees transparent transactions as each action is recorded and stored in the system. The technology also reduces transaction costs and reduces time per transaction.

Russia's environmentally focused blockchain platform is called the Decentralized Autonomous Organization–Integral Platform for Climate Initiatives (DAO IPCI). DAO IPCI is "decentralized and a fully independent public blockchain ecosystem based on smart contracts for any kind of environmental assets and liabilities."

The basic design of the DAO IPC ecosystem is presented below.

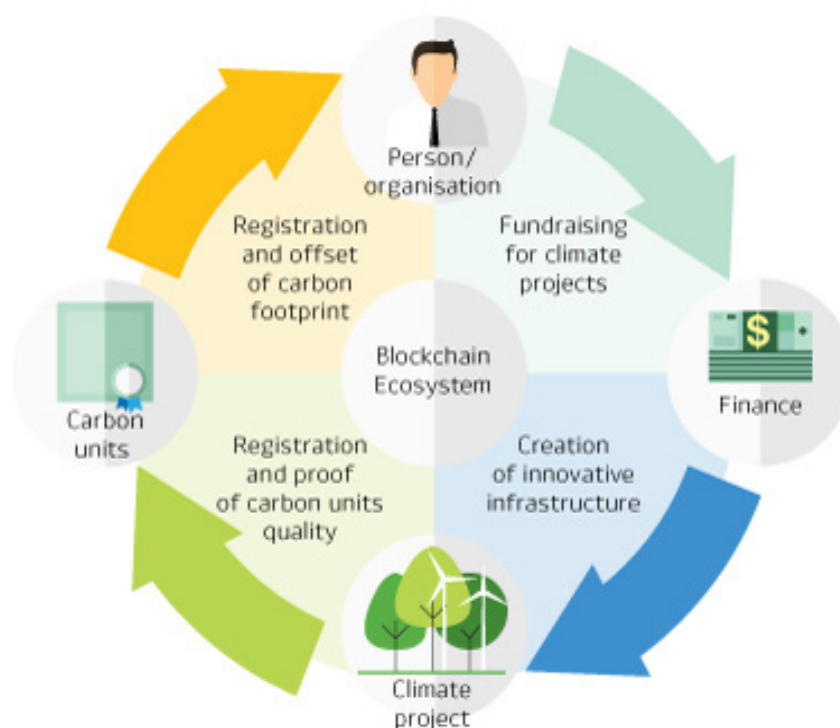


Figure 1: DAO IPCI Ecosystem

The DAO IPCI is a unique platform that ensures integrity and transparency of the process of carbon trading and excludes the risks of double counting of carbon units. DAO IPCI simplifies the process of carbon trading. This attracts investments in environmentally friendly technologies.

The DAO IPCI blockchain technology platform should be replicable by other countries. This project has drawn significant attention from the international community and it won an international Planet Tech competition. It has also been presented at the international conference 'Collision' held in New Orleans.

In March 2017, the first world carbon credit transaction was conducted using blockchain DAO IPCI. The Russian Carbon Fund purchased carbon credits from the African focused Aera Group. The acquired credits are intended to offset Russia's carbon footprint.

The Russian Federation's INDC proposes that by 2030 it will reduce its GHG emissions by 25% to 30% below its 1990 level (UNFCCC, 2015). The DAO IPCI blockchain technology platform will help Russia achieve this goal.

Learn More

Russia Carbon Fund official website: <https://russiacarbon.org/>
Decentralized Autonomous Organization «Integral Platform for Climate Initiatives»: <http://ipci.io/>
<https://russiancarbon.org/o-fonde/press-centr/dao-ipci-pobedil-v-mezhdunarodnom-konkurse-planet-tech>
<https://aera-group.fr/aera-and-russian-carbon-fund-pioneer-the-first-worldwide-carbon-credit-transaction-using-blockchain/>

SAUDI ARABIA

Submitted by Climate Scorecard Country Manager
ABEER ABDULKAREEM



Saudi Arabia–Green Saudi Company for Carbon Services

In 2017, the Saudi Electricity Company (SEC) announced a partnership and cooperation agreement with Petroleum, Chemicals & Mining Company Limited, a subsidiary of the Saudi Binladen Group, to establish the Green Saudi Company for Carbon Services.

The company seeks to develop and manage carbon emissions reduction programs and sustainable development mechanism projects. It also aims to support the fight against environmental pollution in accordance with regional and international agreements and protocols as well as local regulations. The Green Saudi Company for Carbon Services is a step forward towards reducing emissions and controlling pollution, and will also help to achieve Saudi Arabia's INDC pledge to the Paris Agreement.

The establishment of a company solely focused on GHG emissions is significant for several reasons. First, the initiative is supported by top senior level policymakers in the Ministry of Energy, Industry and Mineral Resources and other agencies concerned with clean energy. Second, it demonstrates the Saudi government's serious commitment to its role in international carbon-reduction programs in light of the Paris and Marrakech climate conferences. The Green Saudi Company for Carbon Services will implement clean energy and carbon reduction projects that support the Paris Agreement and the United Nations Framework Convention on Climate Change. It will also issue and market renewable energy certificates (RECs) for national companies. This program can be adapted by other oil-producing countries in the Middle East such as Iraq, Iran, United Arab Emirates, and Qatar.

Learn More

Green Saudi Company for Carbon Services Established. 2017. Zawya. February 20. Accessed from https://www.zawya.com/mena/ar/story/%D8%A5%D9%86%D8%B4%D8%A7%D8%A1_%D8%A7%D9%84%D8%B1%D9%83%D8%A9_%D8%A7%D9%84%D8%B3%D8%B9%D9%88%D8%AF%D9%8A%D8%A9_%D8%A7%D9%84%D8%AE%D8%B6%D8%B1%D8%A7%D8%A1_%D9%84%D8%AE%D8%AF%D9%85%D8%A7%D8%AA_%D8%A7%D9%84%D9%83%D8%B1%D8%A8%D9%88%D9%86-ZAWYA20170220040349/

Green Saudi Company for Carbon Services to Focus on Emissions Reduction. 2017. Gulf News Journal. March 2. Accessed from <http://gulfnewsjournal.com/stories/511086310-green-saudi-company-for-carbon-services-to-focus-on-emission-reduction>

Taha. Sharif. 2017. Saudi Electricity Company Signs a Pact with PCMC to Reduce Carbon Emissions. Arab News. February 22. Accessed from <http://www.arabnews.com/node/1058011/saudi-arabia>

SOUTH AFRICA

Submitted by Climate Scorecard Country Manager
LEE-ANN STEENKAMP



South Africa–The Renewable Energy Independent Power Producer Procurement Programme (REIPPP)

The Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) is a climate change flagship program that was introduced in 2011. Jointly launched by the Department of Energy, the National Energy Regulator of South Africa (NERSA), and state-owned power utility Eskom, the REIPPPP aims to encourage private investment to help further develop the renewable energy sector within South Africa.

The country has plenty of sun and wind throughout the year. This, together with the availability of large open tracts of land, provides South Africa with a huge potential to take advantage of renewable energy. The national renewable energy target is for 18,800MW to be supplied by renewable energy by 2030. In just four years, the REIPPPP alone has already delivered 5,243 MW throughout 79 different projects, which accounts for over a quarter of the target. The REIPPPP covers a variety of renewable energy technologies: onshore wind, solar PV, concentrated solar power, landfill gas, biomass, small hydro and biogas.

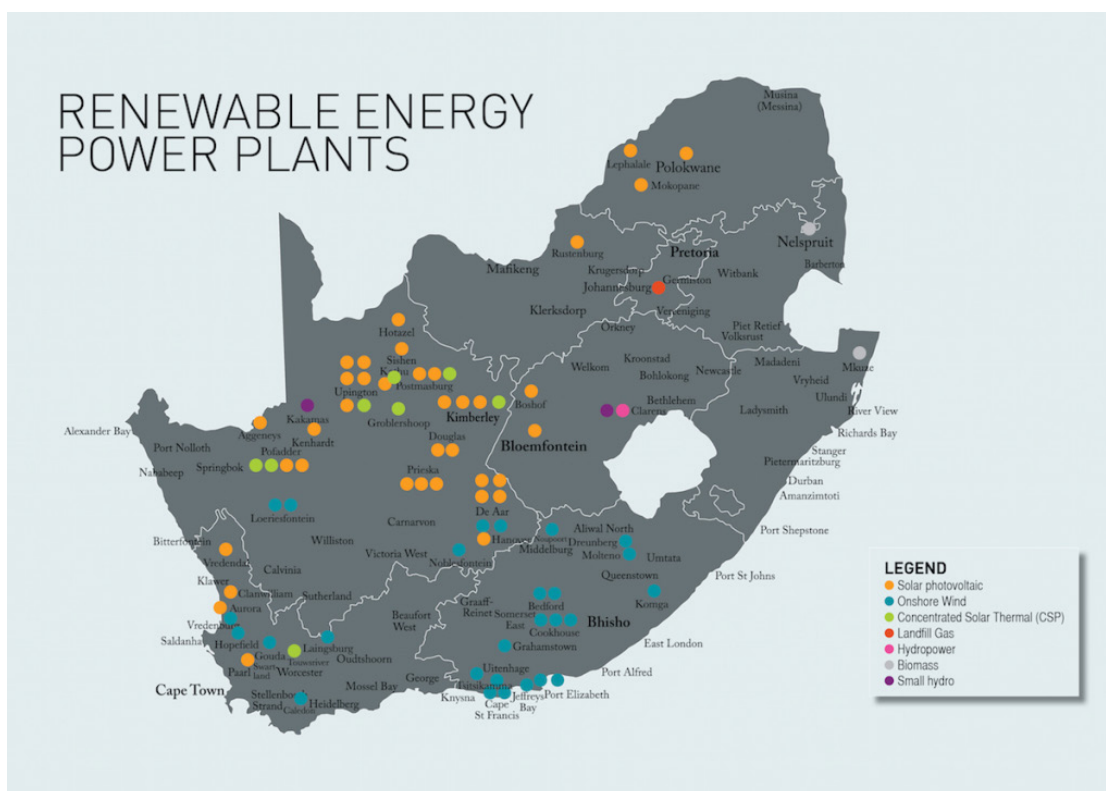


Figure 1: Renewable Energy power plants in South Africa

(Source: <http://www.energyintelligence.co.za/reipp-all-you-need-to-know/>)

REIPPPP provides a grant-based mechanism for encouraging renewable energy production. The main evaluation criterion for the bid selection process is pricing, which carries a 70% weighting. Other factors, such as job creation, local content, and black economic empowerment, weights 30%. This encourages joint ventures with local renewable energy companies, as well as a number of foreign firms to set up local factories that cater for export. Funding is provided through a variety of foreign private equity, local private equity, and large commercial and development banks.

All winning bidders get a 20-year power purchase agreement with Eskom, backed by government guarantees that already total more than R200 billion (approximately Euro 14 billion). The government guarantees are crucial to the success of the program because they make the projects automatically bankable and fundable.

The REIPPPP is lauded by many as one of the most successful independent power producer programs in the renewables space globally. Moreover, it is designed to develop socio-economic and environmentally sustainable growth.

South Africa's INDC Paris Agreement pledge aims at reducing GHG emissions to between 398 and 615 MtCO₂e (including LULUCF), over the period 2025 to 2030. This is consistent with its pledge under the Copenhagen Accord, which proposes emissions reductions below business-as-usual levels by 34% in 2020 and 42% in 2025. Because the REIPPPP is aimed at stimulating the renewable energy sector in South Africa, it can greatly contribute towards decarbonizing the country's economy and reaching the Paris Agreement commitments.

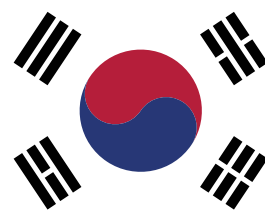
Learn More

Guide to the Independent Power Producer process: <http://www.eskom.co.za/Whatweredoing/Pages/GuideIPP.aspx>

How this Public-Private partnerships works: <http://www.energy.gov.za/files/WOESA/2015/northwest/Perspectives-on-the-REIPPPP-and-the-investment-and-business-opportunities-it-offers.pdf>

SOUTH KOREA

Submitted by Climate Scorecard Country Manager
EUNJUNG LIM



South Korea

In response to the Paris Agreement at which South Korea (hereafter Korea) pledged its significant reduction of the greenhouse gas emission (37% reduction from the business-as-usual (BAU, 850.6 MtCO₂eq) level by 2030 across all economic sectors), the greenhouse gas emission reduction program has been implemented.

According to the Korea Energy Management Corporation (KEMC), Korea developed its original greenhouse gas emission reduction program, called Korea Voluntary Emission Reduction (KVER). Under KVER the government subsidizes the administrative costs of voluntary greenhouse gas reduction activities by small and medium size enterprises (SMEs). KVER tracks and manages the activities of companies that offer to reduce their energy and greenhouse gas emissions.

As a result of KVER, the Korean economy successfully experienced the withdrawal of unused thermal energy, conversion of fuel, development of renewable energy, installation of energy-savings facilities, and improvements in those facilities. KVER aided companies in withdrawing unused thermal energy (waste heat or steam) that is generated in the industrial facilities and/or utility facilities and helped this energy to be reused as an energy source.

KVER also helped SMEs convert to low-carbon fuels. By installing facilities with high energy efficient equipment, firms were able to significantly reduce their energy use and related greenhouse gas emissions. For example, Samchully Gas achieved emissions of 615 tCO₂ by reducing greenhouse gas emissions through one year of fuel conversion.

The development of this unique greenhouse gas reduction program can be regarded as one good example to show that Korea is trying to stay on track with its emissions reductions pledge to the Paris Agreement. In June 2011 South Korea helped Thailand adapt the KVER demonstrating its replicability. However, there may be some caveats in that there seems to be relatively low incentive for businesses to participate in this program. The initial cost of altering their energy sources and the lack of energy sources in Korea might be potential impediments for this program to be expanded throughout the whole market. The Korean government stopped providing incentives at the end of 2016.

SPAIN

Submitted by Climate Scorecard Country Manager
ANDREA DELMAR-SENTIES



Spain–Basque Region Environmental Framework

The Environmental Framework Program implemented by the Basque region is an example of a policy that has been successfully implemented and shows evidence of helping reduce greenhouse gas emissions. The policy is easily replicable and scalable since Spain is composed of autonomous regions whose governments have the authority to implement such a policy.

The Environmental Framework Program contains a series of objectives: Climate change, air quality, water quality, soil quality, biodiversity, waste generation, consumption, and society. Each one is carefully monitored as the Program includes protocols for constant oversight. Data from program monitoring is then used to develop trends, projections and perhaps most importantly, to provide a basis upon which to reevaluate its current efforts.

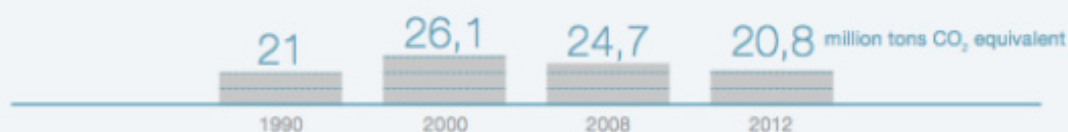
The image below is an outline of the main goals relating to climate change.

G1. Commitment to a low-carbon energy model.	1. Improving energy efficiency and managing energy demand. 2. Giving impetus to renewable energies. 3. Fostering energy efficiency criteria and renewable energies in the urban environment towards "zero-emissions building"
G2. Moving towards zero-emissions transport.	4. Fostering intermodality and means of transport with lower GHG emissions. 5. Replacing the use of oil derivatives. 6. Integrating vulnerability criteria and adaptation criteria into transport infrastructures.
G3. Increasing the efficiency and resilience of the territory.	7. Driving an urban structure that is resilient to climate change, compact and with a mix of uses. 8. Integrating vulnerability analysis and adaptation to climate change in territorial planning.
G4. Making the natural environment more resilient.	9. Fostering the multifunctionality of ecosystems as regulators of geological and biological processes, restoring species and vulnerable habitats. 10. Integrating the climate change variable in the management of coastal zones
G5. Making the primary sector more resilient and cutting its emissions.	11. Fostering local, organic and integrated agricultural production and with lower GHG emissions. 12. Increasing the potential as Basque Country carbon sink. 13. Adapting the practices and managing the primary sector (farming and fishing) to the new climate conditions
G6. Reducing the amount of municipal solid waste generated and zero untreated waste dumping	14. Reducing the generation of municipal solid waste. 15. Increasing the selective collection and sorting ratios and their subsequent reuse, recycling and recovery.
G7. Anticipating the risks.	16. Guaranteeing the long-term water supply for different uses. 17. Ensuring the resilience of the built environment and of the critical infrastructures (energy, water, food, health and ICTs) to extreme events
G8. Driving innovation, improvement and knowledge transfer.	18. Promoting innovation, improving and transferring scientific knowledge. 19. Implementing a system to monitor and follow the effects of climate change.
G9. Exemplary and responsible Basque public administration and which is a benchmark in climate change.	20. Organising training measures to acquire skills and expertise regarding climate change. 21. Awareness-raising, training and informing the general public about climate change. 22. Zero emissions public administration. 23. Consolidating inter-institutional coordination mechanisms for climate action. 24. Positioning the Basque Country on the international stage regarding climate change

The Environmental Framework Program has been successful in lowering greenhouse gas emissions, as illustrated by the image below.

CLIMATE CHANGE: Between 1990 and 2011, greenhouse gas (GHG) emissions dropped by 3%, with a steady downward trend since 2007. Specifically, the total CO₂ emissions from fuel fell by 18% in the Basque Country in the period 2000-2011. In that same period, the GDP rose by 25% and energy consumption by 4%. That implies greater efficiency of the Basque socio-economic sectors (lower energy intensity) and greater environmental efficiency of energy consumption (cleaner energy).

> GHG emissions evolution



As indicated above, the Basque region is steadily decreasing its greenhouse gas emissions, including a nearly 16% decrease between 2008 and 2012. This marked decrease of emissions took place during a time when the federal government was backpedaling on its own environmental conservation efforts with the reasoning that its struggling economy could not afford to maintain them. However, the Basque region reduced its emissions while experiencing a GDP increase of 25%, proving that Spain is capable of combating climate change without having to sacrifice its economic well being.

This decoupling of carbon emissions and GDP are in line with the European Union's recent economic growth and concurring decrease in emissions. The reason for this is that the Basque region and the European Union both see the element of sustainability in the production industry as being a key step in future economic growth. The Environmental Framework Program states that, "Basque companies have successfully grasped that the environment is a factor for competitiveness and differentiation." This break from viewing emissions-reduction and economic growth as being antonymous is what has allowed the Basque region to be so successful, and what will allow it to help Spain implement the European Union's pledge to Paris.

Another way the Basque region and the Environmental Framework Program will help Spain fulfill the pledge is through the development of renewable energies. Spain is using its share of climate finance primarily for renewable energy sources. Objective Two of the Environmental Framework Program is aimed at engaging corporations and investments in the direction of renewable energies and encouraging lower carbon consumption through various measures. Spain has a rich history of promoting renewable energy. The economic crisis halted its developments, but the Environmental Framework Program and the Basque region are committed to looking to renewable energies instead of fossil fuels.

The Basque region and how its government has implemented policies to combat climate change can and should be a model to Spain's other provinces. By following the example of the Environmental Framework Program, Spain's other autonomous governments can pull the collective nation in the right direction.

Learn More

https://www.irekia.euskadi.eus/uploads/attachments/6057/Environmental_Framework_Programme_2020.pdf?1426067174

<http://under2mou.org/wp-content/uploads/2015/05/Basque-Country-appendix-English.pdf>

https://ec.europa.eu/clima/sites/clima/files/eu_progress_report_2016_en.pdf

<http://www4.unfccc.int/ndcregistry/PublishedDocuments/European%20Union%20First/LV-03-06-EU%20INDC.pdf>

THAILAND

Submitted by Climate Scorecard Country Manager
NEEBIR BANERJEE



Thailand–The EcoTipping Point Strategy

One success story in Thailand is about the EcoTipping Point, a term used for describing the combined use of sensible environmental technology and the social organization in place to put these technologies in use. The EcoTipping Point was established by a Thai farmer named Thanawm Chuwaingan and was practiced in the Thai village of Khao Din situated in the Nakhon Sawan province about 225 km north of Bangkok. In the year 1954, Thanawm Chuwaingan migrated to Khao Din village from the Khorat Plateau of Northeast Thailand that was impoverished and lacked natural resources. In the early years after Thanawm Chuwaingan settled in the village, life was going well as the village had abundant natural resources and ample livelihood opportunities for villagers. However, during the period of the 1960s and 1970s, the Khao Din village underwent a rapid transformation. The transformation occurred because the Thai government decided to pursue the Western growth model policy with export-led development as the core objective.

This policy placed a key emphasis on utilizing forests and agricultural production as resources for foreign exchange revenue in order to generate investments in the emerging manufacturing sector. As an outcome, half of the forests, fisheries and agricultural areas were geared towards the international markets. This had an adverse impact upon small-scale marginalized farmers like Thanawm Chuwaingan. In turn, the government wanted such small-scale farmers to modernize and grow cash crops like maize, rice, jute and cassava for export to foreign countries. Similarly, the forests were also divided for the purpose of selling the timber and expanding farmland areas. To do so, the government provided farmers with loans, which were intended for enhancing agricultural productivity like hybrid seeds, chemical fertilizers, pesticides and farm equipment. The farmers also utilized the government loans to purchase radios, motorcycles and other tools. Eventually, the crop prices decreased because farmers were mostly growing the same crops. When the drought season came, crops grown by farmers often failed, which resulted in huge losses of agricultural revenues and increasing debts among farmers. As a result, the livelihoods of small farmers like Thanawm Chuwaingan were filled with hunger, poverty and social marginalization.

From here on, the crisis increased even more as villagers thought they had no choice but to cut down the entire forests to expand the agricultural areas. To describe this crisis, Thanawm Chuwaingan stated, "By that time, there were virtually no trees left on hillsides. It became hotter and drier". There was also large-scale soil erosion, which degraded the soil fertility and reduced crop productivity because of the rapid rainwater runoff along with increased chemical fertilizer application. Because of the crisis, the villagers had no option but to migrate to cities for livelihood opportunities thus resulting in massive out-migration. To emphasize the out-migration that took place, Thanawm Chuwaingan argued, "Unlike in the past when people really cared for one another, everyone was now worried about their own fields

and their own family's problems. For the first time ever, we began to have psychological and social problems. There was little trust and less cooperation". During the onslaught of out-migration, the village communities became completely disintegrated and only the young and elderly remained; and juvenile delinquency became a common feature in the village.

Some hope re-emerged in the Khao Din village during the year 1986 when a team from Save the Children U.S. was sent by the Thai government to visit the Khao Din village. Save the Children helped the villagers develop appropriate strategies to tackle the crisis. At the beginning, the villagers felt suspicious and did not trust the group. The joint discussions and regular meeting sessions between the group and the villagers for developing appropriate strategies increased the level of trust among the villagers and provided them with a sense of hope. Eventually, the villagers came to realize that the root cause of the crisis was the villagers themselves and it was their shared responsibility to respond appropriately to tackle the crisis.

Save the Children served an integral role in developing an ecologically viable strategy for the Khao Din village. The villagers began using a new ecologically diversified agroforestry system in which mixtures of trees and crops were planted. The agroforestry system was used in a manner that resembled the structure of the natural forest. For restoring the damages caused to the forest, the villagers facilitated local community protection and management approaches. Using the agroforestry system thus provided numerous benefits for the villagers like reducing household food costs, decreasing agricultural input costs, increasing the ecological stability of the land, and strengthening year-round food security. Due to the diverse benefits, the use of the agroforestry system became increasingly prominent, not only in Khao Din village but in other villages across the country as well. For instance, around twenty-five villages in Nakhon Sawan province have applied a variety of locally designed forms of agroforestry and sustainable agricultural practices on large plots of lands. Such practices have proved to be beneficial in the long run for preventing soil erosion and degradation generated from the overuse of chemical fertilizers. In recent times, due to the practice of agroforestry systems, the regeneration of natural forests has been massive. This has led to the repair of damaged watersheds, the reemergence of extinct species, and the rapid decrease in out-migration.

This example is replicable in Thailand as well as in other countries worldwide. The reason for this is because the story offers some valuable lessons for all of us. The story proves that human activities are the root cause of environmental damage and it is human beings who have to collectively bare the consequences from environmental degradation. It also highlights that degradation caused to the environment can be recognized if there is a sense of awareness among humans that they are responsible for the wellbeing of the natural environment. From this story, we can also learn that generating awareness among humans towards the environment is an imperative for developing a strong human-environment bond; and for gaining increased community support toward environmental protection initiatives. The example is also scalable to the broader international community as countries worldwide can employ similar environmental practices with respect to the EcoTipping Point method and the agroforestry system approach for preventing environmental degradation. Finally, the story places an emphasis on sustainable resource use that is one of the core principles of Thailand's INDC pledge to the Paris Agreement.

Learn More

To learn more about Thailand's success story about EcoTipping method please visit <http://www.eastwestcenter.org/news-center/east-west-wire/a-thai-villages-ecological-success-story-offers-important-lessons>

TURKEY

Submitted by Climate Scorecard Country Manager
OZLEM DUHAN



Turkey–Climate Policy Package

Turkey is expected to put into practice the “Climate Policy Package” which involves three policy instruments:

1. Carbon taxation
2. Use of carbon tax revenues for electricity generation from renewables by means of a renewable energy investment fund
3. The promotion gains in energy efficiency by industry

The goal of this Climate Policy Package is to help achieve a 20% decrease in the carbon emission intensity (annual CO₂ emission/GDP) of the economy and meet Turkey's INDC pledge to the Paris Agreement. So far the carbon taxation and tax revenues from renewable energy investments components have not been implemented. However, efforts to promote more energy efficient industries are rapidly proceeding. The government provides support for energy efficiency investments by manufacturing industries with an annual energy consumption of 500 TEP (tons of oil equivalent). To qualify, such industries must pledge to reach a minimum of 20% energy saving per unit product and a maximum return period of 5 years for investment. The incentive includes a value added tax exemption, customs tax exemption, tax reduction, insurance premium support for the employer, and support for interest and assignment of the investment site. The impact of these incentives has not been assessed yet but the actions taken only for industry cannot be enough to meet Turkey's INDC pledge.

An assessment of Turkey's economic carbon intensity shows that in order to achieve the 2°C target, the economy's CO₂ emission intensity should be decreased by 60% by 2030. To fully achieve the 2°C target, additional policies and their implementation are required.

UNITED KINGDOM

Submitted by Climate Scorecard Country Manager
ADAM BARNETT



United Kingdom–The Policy of Reducing Dependence on Coal-Fired Power Plants

Though the complete phase out of coal-fired power plants was only officially announced in January 2016—with an aim for completion by 2025—there has been a concerted effort for multiple decades to reduce the UK's dependence on coal when meeting its' energy needs. This was motivated by the UK's 2008 Climate Change Act, the world's first legally binding national emission reduction document, which mandates 5-year plans for reaching net zero emissions by 2050 that include deep cuts to emissions from the energy sector.

The rapid reduction in coal-fired power plants is credited with being the biggest driver behind the UK's fall in total emissions between 1990 and 2015. Coal usage from 2013 to 2015 dropped 41%, with the drop from 2014 to 2015 totaling 21%. In 2016 alone, 8 gigawatts of coal capacity (half of the UK's remaining coal capacity) was closed. In the EU, in 2014 to 2015, the UK achieved the largest emission reductions (19,422 Kt CO₂; compared to the next biggest reduction of 3,638 by Greece). This was largely attributed to the switch from oil and coal to gas in electricity production and accounted for 7.5% of all EU reductions that year. Regarding longer-term trends, emissions from the UK's energy sector have fallen from 277.9 MTCO₂e in 1990, to 144.1 in 2015—a 48% reduction. The Government has stated that 'this decrease has resulted mainly from changes in the mix of fuels used for electricity generation, primarily from a decline in the use of coal at power stations'.

This policy of reducing dependence on coal-fired power plants and replacing them with gas and renewable energy sources is a policy that is easily replicable in a wide variety of contexts. This is due to the current availability of access to renewable technologies through technology transfers that are mandated by international climate change agreement. Also in play is the rapidly decreasing price of renewable energy combined with increased consumer interest and willingness to use them. This policy is also easily scalable with the speed at which dependence on coal is decreased and which alternatives are used to replace coal, able to be dictated by the relevant authority. Reforming emission-intensive energy sectors and replacing the burning of fossil fuels with renewable alternatives, is a key for all countries to achieve their international emission reduction commitments in the Paris Agreement. The necessity of implementing these policies is self-evident.

The UK's INDC pledge was within the EU's pledge. Post-Brexit, the UK will probably have to create a new INDC and the EU's pledge will have to be redistributed among the other member states. This will be to the detriment of the EU, as the UK's emissions reduction pledge was one of the highest. It is not yet known what the UK's new INDC will be.

Learn More

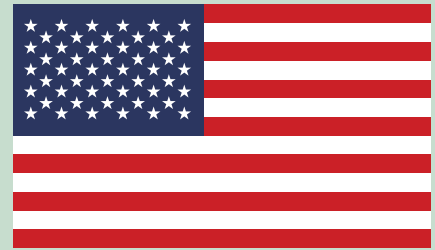
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https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/604350/2015_Final_Emissions_statistics.pdf

UNITED STATES

Submitted by Climate Scorecard Country Manager
STEPHANIE GAGNON



United States–The Regional Greenhouse Gas Initiative

The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort between the Northeastern states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont to reduce emissions from the power sector through a mandatory cap-and-trade program at the state and regional level. Following an agreement signed in 2005 by the governors of participating states, the mandate took effect on January 1st, 2009 and has shown tremendous success over the past eight years of its operation.

Requirements of the RGGI include a regional emissions cap that is lowered through legislative action as emissions levels in the region are progressively reduced to meet the cap level. States sell emissions allowances through quarterly auctions, and invest the revenue in such areas as renewable energy, energy efficiency, climate-related programs, and others.

According to a report released by the Congressional Research Service in May 2017, RGGI states generated 33% of their electricity from coal and other carbon-intensive fuel sources in 2005, but only 7% in 2016 after the first seven years of the implementation of the program. In doing so, the program has also contributed to a reduction in consumer electricity costs of \$460 million across the region, according to a 2015 article from Thinkprogress.

The RGGI is important because it is an agreement between governors and reflects a commitment at the state level to climate change-mitigation policies that operate irrespective of the federal government's stance on renewable energy and climate change policy. In the United States, this is especially relevant following President Trump's recent announcement that he will withdraw the US from the Paris Agreement and his continued lack of support for– and in some cases outright opposition to– renewable energy and emissions reduction policies. The RGGI symbolizes a strong commitment from the

Northeast region to reducing emissions, while serving as an example to other regions that this kind of policy can be both effective and economically beneficial to the region.

The RGGI could be scaled to include more states, or expanded to include an entire nation. Its success lies in its operation at the state level, and in its cooperative nature between multiple states which hold each other accountable to implement the program and share best practices.

In times with little federal support for climate change mitigation policies, it is increasingly important for strong, decisive action to be taken at the state level. The RGGI is a program that does just this, and its success over the past eight years of its implementation shows that it is a reliable program choice.

Learn More

RGGI website: <https://www.rggi.org>

Center for Climate and Energy Solutions page on RGGI: <https://www.c2es.org/us-states-regions/regional-climate-initiatives/rggi>

RGGI 2016 program review: <https://www.rggi.org/design/2016-program-review>

ThinkProgress article on electricity bill reductions through RGGI: <https://thinkprogress.org/the-northeasts-electricity-bills-have-dropped-460-million-since-they-started-paying-for-carbon-67e8c4ccd211>

ABOUT

Climate Scorecard is a participatory, transparent, and open data effort to engage all concerned citizens in supporting the implementation of the new 2015 Global Climate Agreement.

Background

Over 190 countries endorsed a new global climate agreement in December 2015 at a United Nations meeting in Paris (known as COP21). The Paris Agreement is designed to stabilize the earth's climate and prevent our atmosphere from heating-up above a global warming tipping point of 2 degrees Celsius, beyond which scientists warn extreme ecological disasters will occur. The success of the new agreement is contingent on the efforts all countries, as well as non-state actors, must make to increase and honor their commitments to reduce greenhouse gas emissions.

In 2015, in preparation for COP 21, most countries submitted pledges, also known as Intended Nationally Determined Contributions (INDCs), to reduce their greenhouse gas emissions by 2030 or earlier. The Paris Agreement recognizes that these pledges, while good starting points, are insufficient to avoid having the planet warm beyond 2 degrees Celsius. Therefore, all countries are encouraged to revisit and strengthen their pledges before the agreement goes into effect in 2020.

Climate Scorecard is a mechanism for supporting efforts needed to implement the new Paris Agreement. Such efforts include encouraging countries to increase their emission reduction pledges, tracking efforts to strengthen pre-Paris INDCs, making sure that countries put in place policies and programs to achieve their reduction targets, and holding nation-states accountable for fulfilling the promise of the Paris Agreement.

HOW IT WORKS

The Climate Scorecard team has established a website - www.climatescorecard.org - where everyone – citizens, organizations, businesses, researchers, members of governments, journalists – can share information related to emission reduction efforts in the top 25 greenhouse gas-emitting countries. Each of the 25 top greenhouse gas emitting countries has a page on our website where concerned stakeholders can post information related to the status of their country's pledge. Climate Scorecard's website also provides a set of 6 targeted results (see below) that we believe each country needs to achieve by 2020 in order to successfully implement the new Paris Agreement. These results are based on recommendations from the agreement itself, benchmark country emission reduction pledges, and our own research that has identified goals that all countries need to reach. Our targeted results provide a framework for tracking progress made by the top 25 greenhouse gas-emitting countries.

Results for the Top 25 Greenhouse Gas-Emitting Countries to Achieve by 2020

- Strengthens its 2015 agreement pledge, or adheres to a pledge that meets Result 3 in the Framework
- Agrees and implements measures to reach the target of 20% unconditional emission reduction by 2020
- Agrees and implements measures to reach the target of 30% unconditional emission reduction by 2025
- Adopts the UN suggested baseline year of 2010 from which to calculate future reductions
- Agrees to and implements policies that achieve 100% renewable energy by 2050
- Make all aspects of its emission reduction process, including policy development and implementation, transparent and inclusive

WHO WE ARE

An outstanding team of organizations and individuals is implementing Climate Scorecard. Coordination of our effort is through a partnership between The Global Citizens' Initiative (TGCI) and EarthAction- non-profit organizations with missions focused on environmental protection and citizen engagement. TGCI and EarthAction worked together to successfully implement last year's Citizens' Campaign for a 2015 Global Climate Agreement (www.climateagreementcampaign.org).

TGCI and Earth Action have recruited a team of 25 environmental graduate students and young professionals who serve as Country Managers, building and supporting networks of organizations and people to contribute and share information related to the post-Paris progress of each of the top 25 greenhouse gas-emitting countries.

In addition, university-based experts provide quality control and address technical questions related to documents that are proposed for posting on the Climate Scorecard website.

For further information about Climate Scorecard please contact Ron Israel, Executive Director, The Global Citizens' Initiative (roncisrael@gmail.com) or Lois Barber, Executive Director, EarthAction (lois@earthaction.org).