



## **Leading Emission Reduction Challenges**

**Country Report Summary #2**

**September 2016**

**Edited by Lois Barber, Ben Carver, and Ron Israel**

**Compiled by Climate Scorecard Country Managers in the  
Top 25 Greenhouse Gas Emitting Countries**

[www.climatescorecard.org](http://www.climatescorecard.org)

# Contents

Leading Emission Reduction Challenges: Country Report Summary #2 .....	3
Table A: Emission Reduction Challenges.....	4
Country Reports.....	6
Argentina .....	6
Australia .....	8
Brazil .....	10
Canada.....	11
China .....	14
France .....	16
Germany.....	20
India.....	22
Indonesia.....	24
Japan .....	26
Mexico .....	28
Nigeria.....	30
Poland.....	32
Russia.....	35
South Africa .....	37
Spain .....	40
Thailand.....	42
Turkey.....	44
Ukraine.....	45
United Kingdom.....	47
United States .....	48
About Climate Scorecard.....	51
How Climate Scorecard Works.....	52
Who We Are .....	53

## Leading Emission Reduction Challenges: Country Report Summary #2

**Climate Scorecard** is an initiative to help monitor the implementation of the 2016 UN-sponsored Global Climate Agreement by the top 25 greenhouse-gas emitting countries. The Project regularly posts information related to the implementation of the Paris Agreement on its website: <http://www.climatescorecard.org>.

This information is provided by experts, analysts, and practitioners within each country. Once a month Climate Scorecard publishes a *Country Report Summary*, an analysis and synthesis of the efforts of each country to address a major issue related to the implementation of the Paris Agreement. More information on Climate Scorecard is provided in the About Us section at the end of this Report. Comments and questions related to this report should be sent to Ben Carver, Project Coordinator, at [climate@gcitizen.org](mailto:climate@gcitizen.org).

This second *Country Report Summary* asks the question: ***What are the leading emission reduction challenges facing the top 25 greenhouse gas emission producing countries?*** Climate Scorecard Country Managers in our 25 countries were asked to provide answers to this question based on their knowledge, interviews with local experts in their countries and a review of local articles and media posts. A compilation of their responses follows below.

When looked at across the 25 countries, the emission reduction challenges they face seem daunting, especially in light of the Paris Agreement's goal of keeping the planet from exceeding the 1.5 degrees Celsius global warming tipping point. Leading emission reduction challenges include: (a) rising consumer and/or industrial energy demand; (b) dependence on fossil fuels as energy sources, especially oil and coal; (c) deforestation; (d) the absence of relevant climate change policies and programs; (e) problems implementing existing climate change policies and programs; (f) political opposition to climate change legislation; (g) the need to change peoples' behavior; and (h) political and economic crises.

It is worth noting the inter-relationships among many of these challenges, and that most countries are facing several of them. It also is worth noting the 'wildcard' of political and economic crises that can suddenly erupt and disrupt emission reduction plans and activities. Countries where political and economic crises

currently threaten emission reduction efforts include Brazil, Spain, Turkey, and Ukraine.

The country descriptions in this Summary Report also illustrate approaches and strategies that countries are taking to address these challenges. In most countries it is still too early to tell the extent to which they will be successful. Climate Scorecard will seek to monitor their progress.

The Summary Table below maps the leading emission reduction challenges that we've identified across each of our 25 countries.

**Table A: Emission Reduction Challenges**

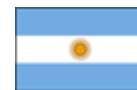
Country (Emissions Percentage of Global Total)	Rising consumer and/or industrial energy demand	Dependence on fossil fuels as energy sources, especially oil and coal	Deforestation	Absence of relevant climate change policies and programs	Problems implementing existing climate change policies and programs	Political opposition to climate change legislation	The need to change peoples' behavior	Political and economic crises
China (22.7%)	✓	✓						
United States (15.6%)					✓	✓		
India (5.7%)	✓	✓	✓			✓		
Russia (5.4%)		✓			✓		✓	
Japan (2.9%)		✓					✓	
Brazil (2.6%)	✓		✓				✓	✓
Germany (2.1%)	✓	✓						
Indonesia (1.9%)			✓		✓			
Canada (1.7%)	✓	✓				✓		
Mexico (1.6%)	✓	✓			✓			
United Kingdom (1.4%)					✓			
Australia (1.3%)		✓				✓		
France* (1.2%)					✓		✓	

South Africa (1.1%)	✓	✓						
Argentina (0.9%)	✓	✓						
Poland (0.9%)		✓				✓		
Turkey (0.9%)	✓	✓						✓
Ukraine* (0.9%)					✓			✓
Nigeria (0.8%)		✓		✓			✓	
Spain (0.8%)	✓							✓
Thailand (0.8%)	✓							

**\* Countries that have ratified the Paris Agreement**

## Country Reports

### Argentina



**Leading Challenges to Emissions Reduction: (a) Rising consumer and industrial demand for energy; (b) Dependence on fossil fuels as an energy source**

### Current Level of Greenhouse Gas Emissions

Argentina is one of the highest emitters of greenhouse gasses (GHG) in Latin America and accounts for around 1% of global emissions. Total emissions for the country were around 429 MtCO<sub>2e</sub> according to Argentina's Third National Communication on Climate Change (2012). This latest figure represented a slight decline from previous years. The sector-wise distribution of GHG emissions is as follows:

Sector	Distribution of GHG emissions
Energy	43%
Agriculture and animal husbandry	28%
Land use change and forestry	21%
Waste	5%
Industrial processes	3%

In its Intended Nationally Determined Contribution (INDC), Argentina commits to an unconditional 15% reduction in greenhouse gases compared to business as usual projections and a conditional 30% reduction if it receives required support.

### Emission Reduction Challenges: Energy

Energy, by far Argentina's highest emitting sector, features prominently in discussions about reducing GHGs. Although the Government points out that high energy consumption results from the country's large geographic area and efforts to raise living conditions for all citizens, it should also be noted that the country is

still heavily fossil-fuel reliant. Sixty-four percent of Argentina's power is generated by fossil fuels (most commonly natural gas followed by oil) and large hydroelectric accounts for 30%. Despite significant potential for wind and solar, only a small amount of Argentina's energy currently comes from renewable sources.

During his campaign, President Mauricio Macri claimed energy would be a top priority. Observers are hopeful that he can address the country's energy crisis, and so far there have been some encouraging actions. An ambitious target has been set to increase renewable energy production from around 2% to 20% by 2025. Reaching this target will require a large-scale shift in where Argentina gets its energy and how it is used. Some measures towards this target include:

- Finalization of Law No. 27191 requiring large users of electricity to source at least 8% of their power from renewable sources.
- Planned launch of the country's largest solar project—a 3GW solar power park in Jujuy province.
- First renewable energy auction calling on companies to bid on 1,000 MW of renewable energy.

However, improving Argentina's energy matrix will not be easy. Positive actions to increase renewable energy are somewhat tempered by increases in conventional energy sources.

### **Emissions Reduction Challenges: Agriculture**

Of course improvements in energy alone are not enough. Argentina needs significant action in other domains as well. For example, Argentina can make serious reductions in GHG emissions by acting strategically in the agricultural sector which accounts for nearly a third of all emissions. Agriculture in Argentina produces significant GHG emissions directly. For example, around 12% comes directly from cattle farming which produces large amounts of methane. At the same time agriculture has other consequences, perhaps most notably large-scale deforestation linked to agricultural expansion. Forest-pasture systems, crop rotation, increasing fertilizer efficiency and increasing the slaughter weight and weaning rate are practices that could help Argentina reduce emissions in an important way.

*--Submitted by Climate Scorecard Country Manager **Dustin Robertson***

## Learn More

<http://www4.unfccc.int/submissions/INDC/Published%20Documents/Argentina/1/Argentina%20INDC%20Non-Official%20Translation.pdf>

<http://global-climatescope.org/en/download/reports/countries/climatescope-2015-ar-en.pdf>

<http://www.renewableenergyworld.com/articles/2016/06/argentina-launches-innovative-renewables-program.html>

<http://unfccc.int/resource/docs/natc/argnc3s.pdf>

[https://www.iamericas.org/documents/energy/reports/Argentinas\\_Energy\\_Transition\\_2016.pdf](https://www.iamericas.org/documents/energy/reports/Argentinas_Energy_Transition_2016.pdf)

## Australia



**Leading Emission Reduction Challenges: (a) Dependence on fossil fuels as energy sources, especially coal; (b) Political opposition to climate change legislation**

### Current Level of Greenhouse Gas Emissions

Australia has one of the highest per capita emissions of carbon dioxide in the world. It was 18.3 tonnes per year per person and the 11th highest in the world per capita in 2009. Australia consists of 5.15% of the world's land mass and contributes 1.8% of the world's annual greenhouse gas production.

A recent government report shows Australia's emissions rose by about 1% in 2014-15, compared with the previous year. It shows that Australia's emissions increased by 0.8% in the last financial year compared with the previous one, and 1.3% when land use and deforestation were taken into account. Australia generated 549.3 mega-tonnes of carbon dioxide in 2014-15.

The report points to increases in electricity, stationary energy (excluding electricity), transport, fugitive emissions, and industrial processes and product use. However, it says there was a steep decline – 3.8% – in emissions from agriculture.



## Emission Reduction Challenges

Australia has a long history of coal mining, and many jobs are tied to the coal industry. This has created concern over the economic effects of moving toward cleaner energy sources. However this could be addressed by focusing on the development of renewables in areas that are currently heavily tied to coal. Coal workers could still be involved in the energy sector through manufacturing and maintenance of other sources such as solar, geothermal, wind and oceanic/tide wave energy capture.

Coal currently provides 73% of Australia's energy supply, and Australia is the fourth largest producer of coal in the world. Employment in the coal industry directly employs 59,000 people and indirectly employs over 100,000. However, the growth of new jobs has slowed and some existing jobs have been lost mainly due to price declines. One report from the Climate Council stated that reaching 50% renewable energy production by 2030 would lead to 28,000 new jobs but there are still economic concerns about the existing industries and transition to renewables.

Politics also plays a role in reluctance to move forward with the Paris agreement. Conservation and environmental regulation is seen as a political issue divided over party lines. More conservative members of government have established records of being opposed to regulation and may be seen as flip flopping or betraying their constituents if they show support for increased regulations, especially those that come from an external source, i.e., the Paris Agreement.

Once environmental concerns have become a partisan issue it can be difficult to move forward on proactive environmental legislation. However, a greater effort could be made to show that responding to environmental concerns is not at odds with some of the core values of conservatism in order to gain the support of Australians who may have political reasons for opposing the Paris Agreement.

--Submitted by Climate Scorecard Country Manager **Hannah Campi**

## Learn More

<https://www.environment.gov.au/system/files/resources/7c0b18b4-f230-444a-8ccd-162c8545daa6/files/nggi-quarterly-update-dec-2015.pdf>

## Brazil



**Leading Emission Reduction Challenges: (a) Rising consumer and/or industrial demand for energy-intensive products and services; (b) Deforestation; (c) Changing peoples' behavior; (d) Political and economic crises**

### **Current Level of Greenhouse Gas Emissions**

According to the analysis of Panorama Brazilian Emissions Current—Trends and Challenges of Climate Observatory, derived from the System Greenhouse Gas Emission estimate (SEEG), the period of drastic reduction in Brazil's greenhouse gas (GHG) emissions has passed. The fall of over 70% in deforestation rates in the Amazon, which helped Brazil lower its share in global emissions from 6.2% in 2004 to 2.9% in 2012, placed the country in a good position to initiate discussions regarding the new global climate agreement that will replace the Kyoto Protocol after 2020. But the new estimates generated by the Climate Observatory show a clear upward trend in GHG emissions from energy, transport, agriculture, industry and solid waste. It is noteworthy that the Climate Observatory estimates still do not capture the increase in deforestation in the Amazon last year. There is therefore a strong indication that Brazil can reach 2020 with emissions on the rise.

### **Emission Reduction Challenges**

"Brazil must meet the voluntary target emission reduction set in 2010 to 2020. But following the current trend, it is likely that in the coming years further reductions of deforestation are lower than the increase in emissions in other sectors, leading to a new period of growth" says Tasso Azevedo, SEEG coordinator.

As a swimmer against the current, the nature of the problem is still in the people's incapacity to perceive the real deal behind climate change. Nowadays, Brazil's population is around 204 million (IBGE, 2015), and cattle population is 212 million (IBGE, 2015). These statistics are dramatic. The destruction of forests to make pastures or to grow crops to feed the livestock is a major source of GHG in Brazil. In addition, methane, a gas released from cows, has 20 times more impact on global warming than an equivalent amount of released carbon dioxide (CO<sub>2</sub>).

So there's no agreed upon solution ahead. Brazil is fighting against deforestation, but while the current rate of deforestation is declining, it is still alarming.

Meanwhile, local meat consumption is growing and remains outside of the emissions reduction agenda, and even outside the debate among ordinary citizens.

--Submitted by Climate Scorecard Country Manager *Ciro Moura*

## Canada



**Leading Emission Reduction Challenges:** (a) Rising consumer and industrial demand for energy-intensive products and services; (b) Dependence on fossil fuels as energy sources, especially oil; (c) High energy use of government supported development policies and programs (Tar sands)

### Current level of greenhouse gas emissions

As of 2014, Canada's national inventory reported 732 megatonnes (Mt) of carbon dioxide equivalent (CO<sub>2</sub>e) emissions. This amount does not include Land-Use Change and Forestry (LULUCF) emissions of 72 Mt. Energy use is highest at 81% or 594 Mt, followed by agriculture (8%), industrial processes (7%), and waste (4%). 2014 emissions were 120 Mt (20%) higher than 1990's 613 Mt.

### Emission Reduction Challenges

A recent April 2016 report on emissions from Canada's Parliamentary Budget Officer states leading barriers in reducing emissions as (1) our strong dependency on fossil fuels and (2) management of our forests. Our target of 30% (208 Mt) below 2005 levels by 2030 means removing more than the equivalent of all emissions from today's cars and trucks (including off-road vehicles), and a price for abating CO<sub>2</sub>e of \$100 per tonne. Policies have begun to reduce emissions from coal use, and from improved vehicle fuel efficiency. Studies are underway on the contribution of managed forests in removing atmospheric emissions.

Major increases since 2009 in CO<sub>2</sub>e emissions have primarily been from mining, and oil and gas production (23 Mt), manufacturing (9 Mt), diesel fuel use by off-road equipment (9 Mt), and fugitive oil/gas emissions (4 MT).

Emissions overall continue to increase. Trends include: a steady increase between 1990-2000 followed by fluctuations from 2000-2008, a 2009 drop, and gradual increases thereafter. Between 2005 and 2009, emissions decreased by 51 Mt

(6.8%), and from 2009 to 2014, increased by 36 Mt (5.2%). Emissions have increased more than 20% since 1990 but GDP increased by 75% as well. Long term trends of fuel switching, efficiencies, technologies, population, energy prices, and economic and policy structure changes have all influenced the increase in emissions.

Last year, Tim Gray, of Environmental Defence, was quoted in a Huffington Post article as saying tar sands production, the pipelines that carry that oil, and their skyrocketing emissions are the number one barrier to Canada finally meeting its international obligations on climate change. This past April, a National Observer's interview with John Stone, former climatologist with Environment Canada, and vice-chair of PICC's Working Group II, quoted him saying, "building more pipelines is scientifically incompatible with meeting climate change commitments."

### **Assessment of Barriers**

The Budget Officer also stated there are significant risks in a large-scale move to lower emissions. A patchwork of abatement programs (i.e., carbon pricing) across different sectors and regions may lead to unnecessarily high costs. Measures that are not sufficiently coordinated and that have regional disparity in their impacts, may not be addressed, thereby undermining a consensus. For instance, a carbon tax on fuels when vehicles are already subject to an increasing fuel-efficiency standard imposes an elevated cost on the transport sector.

Standard abatement measures may also have uneven impacts geographically. One measure across all sectors though is carbon capture and storage. A Canadian Deep Decarbonization Pathways Project (DDPP) report released April 26, 2016 estimates the current gap to reaching Canada's 2020 target as 76 Mt and its 2030 target as 91 Mt.

### **Solutions**

Our new government has reversed a number of unfriendly environmental decisions made over the last decade. A gradual phase out of fossil-fuel subsidies to end-users by 2030 is desired. Letting the provinces design their own policies to meet national emissions targets, to date, has not reached national unity as each province pursues its own agenda.

The Budget Officer sees that emissions reduction needs a complex variety of coordinated approaches given the highly diverse nature of emission sources—transportation, oil and gas production/ distribution, and electricity generation from coal. Regulation has begun. DDPP recommends aligning carbon policies for long-term, cost-effective decarbonization. They recently took stock of Canada’s aspirations vs emission trajectories as a result of COP21. DDPP recommends five steps—(1) all sectors should have emissions policies, (2) tightening vehicle and building energy and emissions intensity regulations, (3) economy-wide carbon pricing, (4) decarbonized electrification, and (5) support to drive down future costs of emission reductions.

Derek Coronado of Citizens’ Environmental Alliance favours political will as the solution given that existing and pending action from Canada's provinces, territories, and the federal government are expected to fall short of Canada’s 2030 targets. Keith Stewart of Greenpeace Canada sees reducing the political power of the oil industry as key to progress on phasing out fossil fuels.

--Submitted by Climate Scorecard Country Manager **Diane Szoller**

## Learn More

Environment Canada, 2014. Canada’s Emissions Trends, 2014.

[https://ec.gc.ca/ges-ghg/E0533893-A985-4640-B3A2-008D8083D17D/ETR\\_E%202014.pdf](https://ec.gc.ca/ges-ghg/E0533893-A985-4640-B3A2-008D8083D17D/ETR_E%202014.pdf)

Environment and Climate Change Canada, 2015. National Inventory Report 1990-2014: Greenhouse Gas Sources and Sinks in Canada - Executive Summary. <http://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=662F9C56-1>

Environment and Climate Change Canada, 2016. Greenhouse Gas Emissions 2016. <https://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=FBF8455E-1>

Government of Canada, Office of the Parliamentary Budget Officer, April 21, 2016. Canada’s Greenhouse Gas Emissions: Developments, Prospects and Reductions. [http://www.pbo-dpb.gc.ca/web/default/files/Documents/Reports/2016/ClimateChange/PBO\\_Climate\\_Change\\_EN.pdf](http://www.pbo-dpb.gc.ca/web/default/files/Documents/Reports/2016/ClimateChange/PBO_Climate_Change_EN.pdf)

Graveland, Bill, The Canadian Press, February 6, 2015. [http://www.huffingtonpost.ca/2015/02/06/justin-trudeau-liberals-carbon-emissions\\_n\\_6632340.html](http://www.huffingtonpost.ca/2015/02/06/justin-trudeau-liberals-carbon-emissions_n_6632340.html)

## China



**Leading Emission Reduction Challenges: (a) Rising consumer and/or industrial demand for energy intensive products and services; (b) Dependence on fossil fuels as energy sources, especially coal and oil**

### **Current Level of Greenhouse Gas Emissions**

China has experienced rapid economic development, urbanization and industrialization for over three decades since its commencement of Reform and Opening Up Policy. However, undergirding the transformative changes is an ever-increasing energy demand heavily dominated by fossil fuels (especially coal). According to a 2015 scholarly report, 90% of China's carbon emission derives from various fossil fuels; in terms of industrial sectors, manufacturing and power generation are jointly responsible for 85% of China's total carbon emission in 2012. This massive energy consumption has not only lead to enormous carbon emission, but has also caused notorious air pollution. In February 2015, a documentary named *Under the Dome* raised public awareness on China's energy consumption and environment protection. Thus, a reduction in greenhouse gas emission is intertwined with improving air quality, both of which demand effective energy reform.

### **Emission Reduction Challenges**

The greatest challenge China faces in reducing its greenhouse gas emissions is the high energy demand driven by its rapidly developing economy. Currently, China accounts for about one quarter of global carbon emissions annually. Consequently, China has been a key focus in international emission mitigation efforts.

In fact, China has made great progress in energy reform during the 12th Five-Year Plan (2011-2015). According to official statistics, China has met its target in coal and energy (equivalent to 5 billion tons coal consumption cap). Coal consumption reached its plateau for the first time in 2014; also, in terms of clean energy, China has been a leading investor in wind and solar energy, overtaking Germany as the NO.1 in solar capacity. In March 2016, China laid out its policy initiatives to address the challenges of sustainable development in the 13th Five-Year Plan. The new target is an 18% reduction in carbon-intensity from its 2015 level, and a 15% reduction in energy intensity. If this is achieved, it can be a great step towards meeting its Paris Agreement pledges.

When China's economic growth slows down to 6.5% annually, it is probable that its energy demand will not be as high as before. Still, challenges remain. How to balance its economic growth and environmental sustainability will be the primary policy concern in its Five-Year Plan.

--Submitted by Climate Scorecard Country Manager *Jingli Liu*

## Learn More

See "China's Carbon Emission Report 2015",  
<http://belfercenter.ksg.harvard.edu/files/carbon-emissions-report-2015-final.pdf>

YouTube link: <https://www.youtube.com/watch?v=T6X2uwIQGQM>, *Under the Dome* was filmed by Chai Jing, a famous CCTV journalist. In Feb 2015, this documentary attracted more than 0.1 billion viewings on China's video streaming websites. It gives a good overview of China's energy sector and demands for energy reform. Given its high popularity, Chinese government banned it later.

<http://www.chinafaqs.org/blog-posts/how-chinas-13th-five-year-plan-addresses-energy-and-environment>

<http://www.wri.org/blog/2016/03/5-questions-what-does-chinas-new-five-year-plan-mean-climate-action>

For a more comprehensive view of Chinese progress in renewable energy, see [http://www.chinafaqs.org/files/chinainfo/ChinaFAQs Renewable Energy Graphical Overview of 2015.pdf](http://www.chinafaqs.org/files/chinainfo/ChinaFAQs_Renewable_Energy_Graphical_Overview_of_2015.pdf)

For a detailed version of Chinese 13th Five-Year Plan (Chinese version), see Chapter 46 of the Report [http://www.gov.cn/xinwen/2016-03/17/content\\_5054992.htm](http://www.gov.cn/xinwen/2016-03/17/content_5054992.htm)

## France



**Leading Emission Reduction Challenges: (a) Problems implementing existing climate change policies; (b) Changing peoples' behavior**

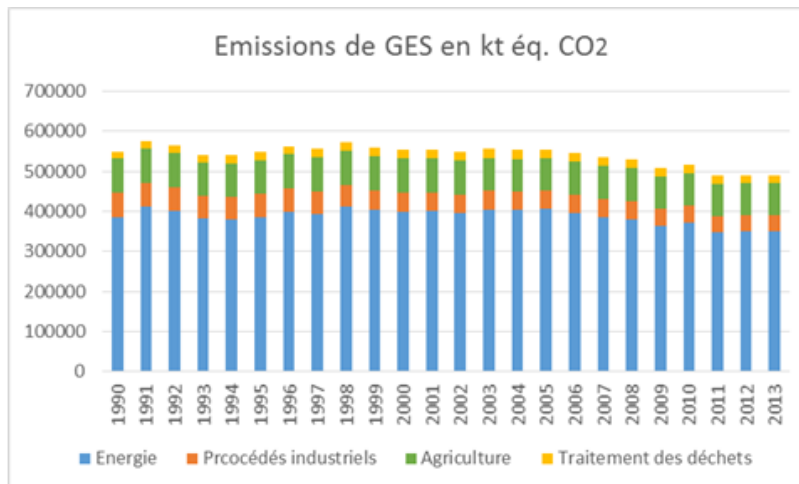
### **Current Level of Greenhouse Gas Emissions**

As member of the EU, France has to respect EU targets for reducing GHG. Under the Copenhagen Accord the EU proposed to decrease emissions by 20%-30% below 1990 by 2020 and by 80%-95% below 1990 by 2050. The 2030 climate and energy framework sets the following key target for the year 2030: At least 40% cuts in greenhouse gas emissions (from 1990 levels). The framework contains a binding target to cut emissions in EU territory by at least 40% below 1990 levels by 2030. To achieve the 'at least 40% target', the [EU emissions trading system](#) (ETS) sectors would have to cut emissions by 43% (compared to 2005). To reach these goals, the [ETS is to be reformed and strengthened](#) and non-ETS sectors need to cut emissions by 30% (compared to 2005). The overall EU targets need to be translated into individual binding targets for Member States.

The French non-ETS target under the EU Effort Sharing Decision (ESD) for 2020 is -14% (compared to 2005) and non-ETS emissions were reduced by 8.7% between 2005 and 2013, which is below the interim target for 2013. According to the latest national projections submitted to the Commission and taking into account existing measures, the 2020 target is expected to be met and even exceeded by a margin of 1.9% points.

According to the global carbon atlas, between 1990 and 2014 France has reduced its GHG by 0.5 % and between 2013 and 2014 by 9.4%. In 2014, the main GHG emissions came from oil (198 MtCO<sub>2</sub>), followed by coal (38 MtCO<sub>2</sub>), gas (80 MtCO<sub>2</sub>), cement (7.5 MtCO<sub>2</sub>) and finally gas flaring (0.4 MtCO<sub>2</sub>). France represents only 1.2% of global emissions although it contributes to the worldwide GDP for 4.2%. It reduced its emissions by 10% since 1990 and went beyond the Kyoto objective which was not to increase them. This represents a reduction of 21% per inhabitant.





### *Evolution of emissions since 1990 in France*

France's energy policy is largely based on nuclear power which explains the low GHG emission profile of the country. However, the government is currently working on a strategy for diversifying the energy mix and reducing the energy intensity of its economy. The government of Francois Hollande – in office since May 2012 – pledged to cut the share of nuclear energy in the country's electricity mix from 75% to 50% by 2025. Next to these overarching targets, the **Energy Transition Act** includes specific measures on energy efficiency in new and existing buildings, clean transport, recycling, and the promotion of renewable energy. This new Energy Transition Act, which was adopted in August 2015, aims at reducing GHG emission by 40% by 2030 and by 75% by 2050 (compared to 1990 levels). It is also expected to establish multiannual carbon budgets, and measures for emission reductions, reduction of energy consumption and deployment of renewable energy.

The recent key policy developments include the work on the Energy Transition Act as well as the introduction of new environmental taxes with the Finance Acts of 2014 and 2015. Most notably, the government established a carbon tax on energy products that is levied since January 2014. France also adjusted a number of existing support schemes to speed up the energy refurbishment of buildings, the installation of charging stations for electric vehicles, and the deployment of renewable energies.

## Emission Reduction Challenges

France is facing several challenges to reduce GHG emissions and achieve its targets. These include:

- **Cost and difficulties represented by the sectors where GHG emissions should be reduced:** Once the country's last coal fired plants are shut down, electricity generation will account for less than 4% of the country's total emissions. This means that in the future, effort to reduce GHG emissions will have to focus on transport, residential and commercial housing and agriculture, sectors where it is much more difficult and costly to reduce emissions.
- **Lack of legislation implementation and legislation shortcomings:** Some organisations have criticized the Energy Transition Act and the absence of energy saving objectives for 2030, which were in the initial draft version. They also reproached the law for not having set a deadline for the reduction of nuclear energy by 50%. They claim that the Energy Transition Act will only be effective if the government keeps its commitments including on the most problematic topics. The multiannual energy programming (PPE), which should articulate the main objectives of the energy policy and translate them into a concrete roadmap until 2018 and then 2023, is still not very clear and lacks coherency on the key issues like the evolution of the nuclear power plants. Moreover, the content of several implementing decrees do not effectively show the affects of the legislative provisions that are intended to be more ambitious (e.g. combatting energy precariousness). To be entirely effective the Energy Transition Act needs to be fully implemented by the Government and relevant decrees with necessary provisions need to be adopted. Otherwise this Act will only remain an ambitious legislative text on paper.
- **Lack of political coherency and clear political commitment:** Decisions taken by the government can sometime appear contradictory on certain aspects of GHG emission reduction. For example, the government promotes clean mobility but at the same time it supports infrastructure projects that, to the contrary, will lead to an increase of road and air transport. There is also a positive commitment from the government on the end of public support for coal energy (if there is no technology based on CO<sub>2</sub> capture and storage). However, the role of France within the OECD and the G7 on the coal question still needs to be clarified. France proposes as well to postpone the reform of

energy taxation at the EU level to avoid the end of fossil fuel subsidies. Moreover, just before the COP21, the Ministry of sustainable development issued three new research permits for hydrocarbons. It has also been very much criticised that EDF and Engie, two companies partially owned by the State, sponsored the COP 21 despite the fact that their coal power stations are responsible for more than half of France's GHG emissions. This lack of coherency can be mainly explained by the difficulty to balance economic interests with environmental conservation. France, as do most countries, struggles to find the right balance to ensure that its development remains sustainable.

- **Difficulties to change people behaviour:** promoting clean mobility means convincing the population to change their habits and switch from using their cars to public transport or using bikes. This is slowly happening in France but the great majority of people have difficulties to renounce the use of their cars. To achieve this change, there is a need to raise awareness in the population (e.g. a communication campaign) and to provide incentives to ensure that people will embrace this change (e.g. economic incentives and measures supporting the use of public transport). In France, trains remain and are seen as quite expensive and often people consider it more advantageous to travel by car, especially now that petrol is quite cheap.

--Submitted by Climate Scorecard Country Manager **Charline Gaudin**

## Learn More

<http://rac-f.org/Depot-des-contributions-des-pays>

<http://www.gouvernement.fr/special-cop-21-les-engagements-nationaux-de-la-france-3390>

[http://ec.europa.eu/clima/policies/strategies/progress/reporting/docs/country\\_report\\_france\\_final.pdf](http://ec.europa.eu/clima/policies/strategies/progress/reporting/docs/country_report_france_final.pdf)

<http://www.developpement-durable.gouv.fr/Strategie-nationale-bas-carbone.html>

<http://www.developpement-durable.gouv.fr/Pourquoi-une-division-par-4-est-15686.html>

<http://www.developpement-durable.gouv.fr/Emissions-de-la-France-33791.html>

[http://ec.europa.eu/clima/policies/strategies/2030/index\\_en.htm](http://ec.europa.eu/clima/policies/strategies/2030/index_en.htm)

<http://rac-f.org/Transition-energetique-un-an-apres-la-loi-quel-bilan>

<http://www.globalcarbonatlas.org/?q=en/emissions>

## Germany



**Leading Emission Reduction Challenges: (a) Rising consumer demand for energy-intensive products; (b) Dependence on fossil fuels as energy sources, especially coal**

Germany's greenhouse gas emissions rose by 0.7%, from 902 to 908 million tons of CO<sub>2</sub> between 2014 to 2015, according to the [Environmental Ministry](#). This means that, by virtue of their Climate Action Programme, Germany will have to reduce greenhouse gases by 12.8% over the next 3+ years to reach a targeted 40% reduction by 2020.

German energy industries have consistently contributed to the largest share of greenhouse gas emissions, composing 38% of 2015 levels. Households experienced a 3.5% increase in their emissions for the same year, lending to the fear that as individuals shift to renewable alternatives their consumption habits become more environmentally harmful. The Ministry pointed to an increase in household electricity consumption of 18.4% between 1990 and 2013, pointing to information and communication behaviors as a dangerous contributor to this trend.

Yet above all else, Germany's coal consumption poses the most serious threats to their intended commitments. 26% of Germany's energy consumption is derived from coal production, which fuels industrial output for high value-added goods. [Greenpeace](#) and other organizations have continued to stress the urgency in cutting back and phasing out coal investments, particularly in power plants and mines.

This is difficult to achieve considering the strength of lobby groups, such as Euracoal, who are not ready to commit to renewables. Moreover, the recent Brexit movement has not helped EU countries to transition to renewables. Since the UK's departure, emissions allowances, as per the EU Emissions Trading System (ETS), fell from a price of around 5.7 euros per ton of CO<sub>2</sub> to an all-time low of less than 4.7 euros, creating greater economic incentive to upscale non-renewable demand.

Germany operates under the EU ETS as a measure for industries to abide by EU standards. Additionally, they must submit independent National Allocation Plans to the EU Commission. Since 2014 Germany has been advocating for a universal minimum allowance price for EU ETS members to prevent market shifts like Brexit influencing industry-level climate initiatives.

Commonly-cited estimates indicate that Germany must more than double its renewable energy production by 2040 to reach their commitment to 1.5°C global temperatures, which would be at a manufacturing rate that is 3 to 6 times faster than presently. This translates to an annual production rate of 1,320 Tw/h, seemingly unlikely given most reductions will have to be made in transport, energy, and heating sectors. The German Chancellor's Renewable Energy Act was implemented in 2000 in an attempt to shift 40 – 45 percent of power consumption to renewables by 2025, compared to 32.5% in 2015. However, recent reforms have not helped meet this target, mainly because contracts with renewable energy suppliers would be changed in such a way that would make it more expensive for households and small-medium enterprises to invest, but easier for larger businesses. This is because it had shifted the economic mechanisms of investing in renewable energy from feed-in tariffs, which offer long-term contracts with decreasing costs over time, to auction schemes, which generate market prices for investments and are offered to the highest bidder.

The World Wildlife Federation (WWF) has recently taken a social approach to fighting coal in Germany. In a [report](#) titled "Europe's dark cloud: How coal-burning countries make their neighbors sick," the WWF estimated that, due to emission-related issues, if Germany were to completely phase out coal they could prevent more than 1,860 premature deaths domestically and over 2,500 in neighboring countries. The organization also pointed to the necessity in reforming the EU ETS, calling on the Industrial Emissions Directive and National Emissions Ceilings Directive to "introduce stricter pollution limits."

*--Submitted by Climate Scorecard Country Manager **Roland Selinger***

## **Learn More**

<http://www.welt.de/wirtschaft/article156389754/Deutschland-muss-erneuerbare-Stromproduktion-verdoppeln.html>

<http://www.greenpeace-energy.de/presse/artikel/article/deutschland-braucht-100-prozent-erneuerbare-energien-bis-2040-den-kohleausstieg-bis-2030-und-rasche.html>

## India



**Leading Emission Reduction Challenges: (a) Rising consumer and/or industrial demand for energy-intensive products and services; (b) Dependence on fossil fuels for economic growth combined with a strong fossil fuel lobby; (c) Deforestation; (d) High energy-use encouraged by government policies and programs**

### Current Greenhouse Gas Emission Levels

India is the fastest-growing major economy in the world. It is the fourth largest greenhouse gas (GHG) emitter, accounting for 5.8 percent of global emissions. India's emissions increased by 67.1 percent between 1990 and 2012, and are projected to grow 85 percent by 2030 under a business-as-usual scenario.

Coal accounted for 43.5 percent of the total energy supply in 2011, followed by biofuels and waste (24.7 percent), petroleum (22.1 percent), natural gas (6.7 percent), hydropower (1.5 percent) and nuclear (1.2 percent). India is working to meet growing energy demand by securing affordable supplies and attracting infrastructure investment in. By 2022, it aims to provide electricity to the 25 percent of the population (more than 300 million people) who don't have it.

### Emission Reduction Challenges

Following are the three pertinent points that threaten India's ability to fully commit to the Paris Agreement and get control over its greenhouse gas emissions.

First, preponderance of the fossil fuel lobby in the country. This means the broad quarters involved in the fossil business, which includes energy producers and distributors as well as the large consumers, have a strong influence in determining the policies of the country. As of now, this powerful lobby is disregarding the environmental issues for its own business or political interests, which is

contributing to delays in effective execution of environmental policies—including the Paris Agreement.

Second, the present BJP government's development policies that are, in-principle, high energy consuming. Since the BJP government came to power in early 2015, it has been attempting to make India the fastest growing country in the world—which it has already become in 2016. The government, in pursuit of its goal, has initiated a 'Make-In-India' campaign to attract, encourage and invite foreign investors to manufacture on their own or partner with local manufactures to increase their produce. This in a way is encouraging some of the 'dirty-industries', i.e. more environmental polluting industries from the West or even China and other Asian countries to set up their manufacturing bases in the country. The 'Make-In-India' campaign is meant to galvanize the economic activity and help alleviate poverty in the country. However, it also is causing environmental damage in the process. Now the government is facing a dilemma whether to accept the Paris Agreement that calls for stringent check on environmental pollution or let this policy continue unhindered.

Third, India is on a 'locked-in trajectory' for use of fossil fuels. This means the country's energy system is primarily dependent on fossil fuels for its smooth functioning. Further, the existing design of most of the public-service infrastructures, like roadways, electricity grid, etc., are meant for optimizing fossil energy use. So, an energy transition from fossils to renewables can only happen in a gradual and progressive manner. Any niche technological development may bring about complete disruption. The limited scope for systemic-level change in the energy model of the country is affecting the society to dedicatedly pursue climate change mitigation actions right away.

Following are some additional points on the topic that Prof. Raghavendra Gidadhubli, Professor of Economics and International Relations from Mumbai University, shares as his personal opinion:

First, India is facing the ever-growing problem of climate change because of large-scale deforestation that is widely happening in many parts of the country. The government agencies have not been able to keep tab on these illegal activities due to limited resources and the geographic vastness of the country.

Second, many mining and industrial enterprises do not adhere to rules for emission of gas and pollution. Some of these have good contacts with local government bodies that have enabled them to continue their activities.

Third, in urban areas automobiles have increased in number during the last 3-4 decades contributing to climate change that affects urban populations. Now we are facing a dilemma of whether to continue on the development trajectory or immediately start caring for our environment that will likely put the brakes on our economic development.

--Submitted by Climate Scorecard Country Manager **Hriday Sarma**

## Learn More

Center for Climate and Energy Solutions [www.C2es.org](http://www.C2es.org)

## Indonesia



**Leading Emission Reduction Challenges: (a) Deforestation; (b) Problems implementing existing climate change policies and programs**

## Current Greenhouse Gas Emission Levels

Indonesia's greenhouse gas emissions are closely linked to its land use and forestry. Between September and October of 2015, large amounts of stored carbon were released in Southeast Asia from fires in forests and peatlands. More than half of these fires came from peatlands. This period had an average emission rate of 11.3 Tg CO<sub>2</sub> per day during this time period. This average emission rate exceeded the entirety of the European Union; 8.9 Tg CO<sub>2</sub> per day. 97% of the total emissions from this period - 227 ± 67 Tg C. Much of these emissions came from south of Kalimantan, the southeastern provinces of Sumatra, and Papua. El Niño's dry weather and droughts aggravated these fires.

## Emission Reduction Challenges

Although Indonesia will not experience El Niño in 2016—and therefore the drought will not be as severe during Indonesia's dry season—the destruction of Indonesian carbon sinks has continued in 2016. In the 2015 period and now, palm oil production and other practices that destroy forests and peatlands are largely responsible. Although this same period should not be as severe as last year's, the dry season will likely still result in massive greenhouse gas-emitting fires. This trend will persist



unless there is major intervention in fires and enforcement of measures to protect environmental destruction.

President Widodo has called for a 5-year moratorium on new palm oil plantation construction and any existing concessions which would threaten forests. This moratorium is to be issued in August. This is coupled with a 2011 moratorium on permits to clear forests and peatlands. This 2-year moratorium has been extended twice and is still active. The government will use the One Map policy—the program that creates a single reference map of allowed land use—to ensure the policy does not conflict with other policies in areas such as mining and agriculture. Widodo plans to encourage existing plantations to produce palm oil more productively on the sites they have and wants to invest in further research into how to make palm oil sustainable and less environmentally destructive. For preventing fires in the coming months, the Integrated Forest Fire Taskforce in Riau (one of the most vulnerable provinces to fires and the most major palm oil producing province) will be charged with battling the blazes and the National Disaster Mitigation Agency (BNPB) will also be fighting fires. Under Indonesia’s 2011 National Action Plan to Reduce Greenhouse Gas emissions, each province must submit a Regional Action Plan of Greenhouse Gas Emissions (RAD-GRK). Of the 33 plans, only 8 have an adaptation plan.

One of the major hurdles with the moratoriums is ensuring enforcement, especially among slash-and-burn farmers and those illegally destroying carbon sinks. Identification of forest fires is also difficult, especially when they occur far from occupied areas. It is therefore necessary that the government and other actors closely track forests and carbon sinks using satellite data to ensure enforcement of moratoriums, the continued protection of forests, and that fires are identified and dealt with. The government must also enforce provincial commitments to reducing carbon emissions and encourage all provinces to adopt a plan of adaptation. No one government policy can encompass the emissions sources of the entire country, so they must be concerned with holding provinces accountable to their commitments and plans.

--Submitted by Climate Change Country Manager **Tristan Grupp**

## **Learn More**

Nature study on 2015 September to October emissions:

<http://www.nature.com/articles/srep26886>

RAD-GRK: <http://www.wri.org/blog/2016/06/6-things-you-never-knew-about-indonesias-emissions-and-local-climate-action>

Riau and deforestation: <http://www.eco-business.com/news/15-fire-linked-firms-escape-prosecution-in-indonesias-riau/>

One Map and moratorium: <http://jakartaglobe.beritasatu.com/business/indonesia-impose-five-year-moratorium-new-palm-oil-concessions/>

Moratorium: <http://www.theborneopost.com/2016/07/21/indonesia-moratorium-to-include-existing-plantations/> and <http://www.indonesia-investments.com/news/todays-headlines/palm-oil-industry-indonesia-five-year-moratorium-on-new-concessions/item7006>

IFFT and BNPB: <http://jakartaglobe.beritasatu.com/news/number-forest-fire-hotspots-increase-ahead-idul-fitri-holiday/>

## Japan



**Leading Emission Reduction Challenges: (a) Dependence on fossil fuels as energy sources; (b) Changing peoples' behavior**

### Current Greenhouse Gas Emission Levels

Total emissions in FY2014 were 1365 Mt CO<sub>2</sub> eq, a 3.0 % decrease compared to those of FY2013; and a 7.5 % increase compared to FY1990. Total greenhouse gas (GHG) emissions increased 2.7% between 2011 and 2012 and 1.3% between 2012 and 2013. With a long-term view, the emissions are slightly increasing.

### Emission Reduction Challenges

After the Fukushima nuclear power plant accident caused by the Great East Japan Earthquake in 2011, Japan's energy plan which had focused on nuclear power was reconsidered. Since all nuclear power plants had stopped just after the earthquake, fossil fuels have accounted for the most of the electricity supply. This switch from nuclear power to fossil fuels has steadily increased the carbon emissions in Japan. (The use of nuclear power is very controversial.)

The Basic Energy Plan (2014) describes nuclear power and fossil fuels as “base-load power sources.” The government’s aim of the share of electricity provided by renewable energy is only 22-24% in Long-term Energy Supply and Demand Outlook (2015), which may be insufficient to transform Japan to a low carbon society.

Because of very limited energy resources, Japan has relied on imported resources. After the Oil Crises, and in order to gain energy security, Japan has struggled to reduce its dependence on oil. In 2010, the ratios of oil power generation was less than 10% and those of coal, gas and nuclear are 25%~27% each. After the Fukushima accident, almost all of the nuclear power plants were not in operation and about 90% of power generation comes from fossil fuels.

The Japanese Government has developed mid and long-range plans for reducing its current dependence on fossil fuels. Between now and 2030 the plan focuses on the development of clean coal and LNG thermal power technologies, an area where Japan has a strong technological advantage. After 2030, the plan calls for a focus on carbon capture and storage and hydrogen technologies. The Government also will try to restore the confidence of its people in the safety of nuclear power plants.

--Submitted by Climate Scorecard Country Manager **Kenta Matsumoto**

## Learn More

<https://www.env.go.jp/en/headline/2197.html>

[http://www.meti.go.jp/english/press/2015/pdf/0716\\_01a.pdf](http://www.meti.go.jp/english/press/2015/pdf/0716_01a.pdf)

<http://www.stanleyfoundation.org/climatechange/Kameyama-RecentDevClimateChangePolicy-Japan.pdf>

[http://www.fepec.or.jp/english/energy\\_electricity/history/](http://www.fepec.or.jp/english/energy_electricity/history/)

<http://www.env.go.jp/en/focus/docs/files/20140318-83.pdf>

## Mexico



**Leading Emission Reduction Challenges: (a) Rising consumer and/or industrial demand for energy-intensive products and services; (b) Dependence on fossil fuels as energy sources; (c) Problems implementing climate change policy and programs**

### Current Greenhouse Gas Emission Levels

Mexico's level of greenhouse gas emissions in 2010 was 748 million tons of CO<sub>2</sub> equivalents (MtCO<sub>2</sub>e), according to the last official publication presented by the Mexican government to the UN Framework Convention on Climate Change in 2012. Although in recent years there has been a decrease in emissions—as shown in Mexico's Intended Nationally Determined Contribution, or INDC—in a Business As Usual scenario, the current greenhouse gas emission growth rate might take those levels up to a billion tons of CO<sub>2</sub>e by 2020.

### Emission Reduction Challenges

Mexico faces two main barriers for further greenhouse gas emission reduction: (A) Its reliance on fossil fuels, which has increased along with urban expansion and economic development, (B) Rising energy demand, and (C) A government crisis linked to a lack of transparency, accountability, and the correct implementation of the law.

- A. Energy production in Mexico relies heavily on fossil fuels. Milestones such as the creation of a General Law on Climate Change (2012) and the approval of the Energy Transition Law in 2015 emphasize the need to transition to a renewable energy framework for development, but other laws like the ones developed after the Energy Reform of 2013 promotes the persistent use of fossil fuels.
- B. Even the Minister of Environment and Natural Resources, Rafael Pacchiano, declared before the COP21 that energy demands in the country will grow so much that we will not be able to decrease our reliance on fossil fuels on the medium term. If Mexico can solve the issues associated with point B, and sticks to the guidelines proposed in its climate change National Strategies and Plans, it may be able to address these barriers.

C. Mexico's lack of transparency and accountability in all levels of government makes it difficult for climate change national goals to be enforced. This is reflected in a shortage of implementation and surveillance mechanisms and clear actions that will help to comply with the Paris Agreement pledges the country has made. This is a harder step to take, since recent efforts by citizens to demand accountability and transparency from government representatives have been rejected by the same officials, for example like the 30f3 Law proposal signed by 630 thousand Mexicans.

--Submitted by Climate Scorecard Country Manager **Raiza Pilatowsky Gruner**

### Learn More

Mexico's level of emission:

[http://www.pincc.unam.mx/libro\\_reportemex/reporte\\_mexicano\\_vol\\_III.pdf](http://www.pincc.unam.mx/libro_reportemex/reporte_mexicano_vol_III.pdf)

[http://www.inecc.gob.mx/descargas/cclimatico/inf\\_inegei\\_public\\_2010.pdf](http://www.inecc.gob.mx/descargas/cclimatico/inf_inegei_public_2010.pdf)

[http://unfccc.int/national\\_reports/non-annex\\_i\\_natcom/items/2979.php](http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php)

<http://climateactiontracker.org/countries/mexico.html>

Barriers:

<http://www.bloomberg.com/news/articles/2015-03-27/mexico-pledges-25-cut-in-greenhouse-gas-emissions-growth>

<http://www.bna.com/mexico-passes-law-n57982065128/>

<http://www.eia.gov/beta/international/?fips=mx>

[http://www.milenio.com/politica/Ley\\_de\\_Transicion\\_Energetica-energia\\_limpia\\_mexico-reforma\\_energetica\\_o\\_638936262.html](http://www.milenio.com/politica/Ley_de_Transicion_Energetica-energia_limpia_mexico-reforma_energetica_o_638936262.html)

<http://eleconomista.com.mx/sociedad/2015/11/26/mexico-no-puede-dejar-dependencia-hidrocarburos>

<http://www.ictsd.org/bridges-news/puentes/news/las-indc-de-m%C3%A9xico-de-cara-a-la-cop21-balance-y-retos-impostergables>

<http://www.radioformula.com.mx/notas.asp?Idn=602311&idFC=2016>

## Nigeria



**Leading Emission Reduction Challenges: (a) Dependence on fossil fuels as energy sources; (b) Absence of climate change policies and programs; (c) Changing peoples' behavior**

### **Current Greenhouse Gas Emission Levels**

The World Resources Institute estimates that Nigeria's greenhouse gas emissions in 2012 (its latest record for the country) exceeded 296 MtCO<sub>2</sub>e (excluding land use). The figure exceeds 474 MtCO<sub>2</sub>e when land use is included (CAIT Climate Data Explorer, 2015). The data available for the period 2000 – 2012 show an upward trend in emissions with drops in levels for 2007 through 2009, compared to 2006 values (280 MtCO<sub>2</sub>e without land use and 463 MtCO<sub>2</sub>e with land use). However, the emissions in 2011 and 2012 were each 16 points (excluding land use) and 11 points (including land use) higher than 2006 levels.

### **Emission Reduction Challenges**

Key barriers to Nigeria's reducing its greenhouse gas emissions are dependence on fossil fuels for energy and foreign exchange as well as significant levels of gas flaring during petroleum exploration and production. Many Nigerians, because of limited electricity supply from the national grid, provide their own electricity for business and personal use by means of privately owned fossil fuel powered generators (Punch, 2016; Oyedepo, 2012). According to the World Trade Organisation (2015) in its report on international trade, fuels constituted 79.3% of Nigeria's exports in 2014. The Oil & Gas sector accounted for 18% of Gross Domestic Product (GDP) in 2013 (Nigerian Export-Import Bank, 2015).

Nigeria, in its Paris Agreement Intended Nationally Determined Contributions (INDCs) noted that to meet its conditional and unconditional targets, the country would have to end gas flaring by 2030, reduce dependence on fossil fuel powered generators while enabling access to energy for all Nigerians, and establish significant (13Giga Watts) off-grid solar electricity as well as be given technical support to improve energy efficiency. The estimated national cost is more than US\$100 billion (ICF International, 2016). To achieve the set goals, both present and successive governments at all levels will have to implement (and where necessary improve on) the national and other policies that formed the basis of the INDCs.

Abubakar Alkali, a practicing environmental management professional in Nigeria, in his comments on the issue pointed out that Nigeria did not participate in the signing of the Paris Agreement let alone meeting a pledge (Alkali, 2016). He believes this was because Nigeria did not recognize the Agreement to be important; some Nigerians perceive the Agreement to be retrogressive and would undermine the country's development efforts.

Nigeria's inability to sign the agreement, Mr. Alkali remarks, means that the country's greenhouse gas (GHG) emissions would increase as no efforts will be made to make reductions. He suggests an urgent constitution of a national think-tank in this area and strengthening of relevant national institutions to introduce and implement policies, plans and programs aimed at reducing GHG emissions.

Olu Andah, another practicing environmental management professional in Nigeria, identified the following barriers to Nigeria's minimizing its greenhouse gas emissions: traditional bush burning in preparing land for farming; absence of environmental education on climate change in the rural areas with particular reference to use of wood as major source of energy for domestic purposes; inadequate provision in environmental laws on the control of industrial air pollution; inadequate institutional structure and poor capacity on climate change in Federal and State Ministries of Environment; and discordant national policy on climate change. (Andah, 2016).

These issues Mr. Andah notes translate to absence of reliable data on quantities and major sources of greenhouse gasses. Also, the situation prevents regulatory agencies from meaningfully tackling the problems; for example, selecting the best technological and natural methods to reduce emissions. To overcome the challenges, Nigeria needs a coordinated and implementable policy on climate change; the policy must be such that responsible MDAs can produce implementable and enforceable greenhouse gas emission control regulations. Lastly, educational awareness programs should not be concentrated in city centers only but taken down to the rural areas.

--Submitted by Climate Scorecard Country Manager **Chiudo Ehirim**

### **Learn More**

CAIT Climate Data Explorer, 2015. CAIT-Historical Emissions Data (Countries, U.S. States, UNFCCC). *CAIT Climate Data Explorer*, Washington, DC: World Resources Institute. <http://cait.wri.org>

ICF International, 2016. "Nigeria Summary" in *Analysis of Intended Nationally Determined Contributions (INDCs) June 2016*, USAID Resources to Advance LEDS Implementation program, pp. 35-36.

[https://www.climatelinks.org/sites/default/files/asset/document/INDC%20White%20Paper%20-%20June%202016\\_public\\_RALI.pdf](https://www.climatelinks.org/sites/default/files/asset/document/INDC%20White%20Paper%20-%20June%202016_public_RALI.pdf)

Nigerian Export-Import Bank, 2015. "From the desk of the MD/CEO" in President Buhari and economic diversification, *Ignite Quarterly Journal*, Nigerian Export-Import Bank, p.3.

Oyedepo, S.O., 2012. Energy and sustainable development in Nigeria: the way forward. *Energy, Sustainability and Society*, Springer Open, 2:15, DOI: 10.1186/2192-0567-2-15

<https://energysustainsoc.springeropen.com/articles/10.1186/2192-0567-2-15>

Punch, 2016. Power failure: Nigerians burn N17.5tn fuel on generators in five years. *Punch*, 25 July. <http://punchng.com/power-failure-nigerians-burn-n17-5tn-fuel-on-generators-in-five-years/>

World Trade Organisation, 2015. *International Trade Statistics 2015*, World Trade Organisation

[https://www.wto.org/english/res\\_e/statis\\_e/its2015\\_e/its2015\\_e.pdf](https://www.wto.org/english/res_e/statis_e/its2015_e/its2015_e.pdf)

## Poland



**Leading Emission Reduction Challenges: (a) Dependence on fossil fuels as energy sources, especially coal; (b) Political opposition to climate change legislation**

### Current Greenhouse Gas Emission Levels

A perfect storm of conservative political figures, and an addiction to coal threatens Poland's ability to honor its pledge in the Paris Agreement. Between 2008 and 2012, the EU's top producer and consumer of coal had a total GHG emission of [367.25 MtCO<sub>2</sub>e](#), coming mainly from the country's energy industries (electricity and heating), followed by transportation, and then agriculture. When it comes to fossil fuel dependency, 91% of Poland's energy supply is based in fossil fuel consumption (compared to the 73% EU average). Nevertheless, in the grand, global scheme of things, Poland is responsible for about 1% of global GHG emissions.



## Emission Reduction Challenges

Regardless of their small global impact, Poland still has one of the most carbon-intensive economies of the EU. The country is full of Soviet era coal infrastructure that has continued its coal addiction, even as its neighboring countries, such as Germany, shift to cleaner energy sources. About 70% of this Soviet-era infrastructure is 30+ years old and, even more unfortunate, the government is devoting resources to renewing these plants instead of cleaner alternatives. Energy Minister Krzysztof Tchorzewski's sees "building more efficient coal power plants will get us better results in cutting CO<sub>2</sub> emissions than building renewable energy sources like wind or solar." Poland is sticking to what it knows to grow – coal.

Many politicians from the current political party in charge, the conservative, Eurosceptic Law and Justice Party (PiS), share similar views to the Energy Minister. The country's Minister of Environment, Jan Szyszko, also of the PiS, even has nonchalantly referred to EU proposed greenhouse gas emission targets as an "inconvenience." In addition to using coal as a way to grow their economy, they also cite the resource as the foundation of energy security, an idea that Prime Minister Beata Szydlo, a coal miner's daughter, and other members of government have repeatedly emphasized.

Poland's Deputy Energy Minister Andrzej Piotrowski has stated that "wind generation is not a reliably stable source of electricity" and has not only taken actions accordingly to undercut the clean energy industry, but done little to explore these alternatives. As Poland is stuck with aging infrastructure in a changing climate where international investors are looking to finance clean energy sources, during a time when coal has been at record low prices, the PiS controlled parliament passed a bill that imposes greater restrictions on wind turbine construction (further limiting where they could be built) as a way to curtail the fledging industry so that the focus remains on coal.

This sentiment exists even at the highest level, where President Andrzej Duda (PiS) has called for more research into clean energy sources, to provide established proof they could provide a viable alternative. "Binding Poland to an international agreement affecting the economy and with associated social costs should be preceded by a detailed analysis of the legal and economic impact.... These effects have not been sufficiently explained." Despite his skepticism, the government hasn't announced any plans to fund future research.

Poland's Ministry of the Environment's 2003 report "Poland's Climate Policy: The strategies for greenhouse gas emission reductions in Poland until 2020" has

suggested a laundry list of climate policy recommendations to help move Poland into a greener society. This report also includes encouraging research and monitoring Poland's possible climate changes or possible scenarios that might result from those changes, as President Duda had suggested (even though the report is from before his time), but again makes no plans on how to turn that suggestion into action.

The Ministry of the Environment has reported on the scarcity of environmental education, news coverage, and overall knowledge about all things environmental or sustainable, and the need to change this. The report suggests a range of changes from logistical to cultural. They include teaching environmental protection and sustainable development in all levels of education, and starting recycling programs. (There is also a small part devoted to forestry, which the Poles were so passionate about during the Paris Agreement)

Though the Ministry of the Environment's report provides recommendations, they are vague and hallow: they are listed as "specific objectives" with little guidance on how to turn them into action. The report also suggests that all change should happen through the "correct functioning of market mechanisms," reiterating Poland's emphasis on its economy. It is also of note that this report was published in 2003 (before Poland even joined the EU) and hasn't been updated since.

Investment in clean energy is needed to undermine the Polish coal addiction. Numerous reports state the renewable energy sector holds the potential for hundreds of thousands of new jobs over the next two decades, which would create the prefect opportunities for those individuals whose livelihoods depends on coal mining and other high-carbon industries. There seems to be many different, greener paths ahead of Poland, if only the country would take them on, instead of focusing on its coal past.

--Submitted by Climate Scorecard Country Manager **Kathleen Gorman**

### **Learn More**

[CAIT Climate Data Explorer - Poland](#)

[OECD Environmental Performance Reviews: Poland 2015](#)

[Poland's Climate Policy: The strategies for greenhouse gas emission reductions in Poland until 2020](#)

## [2015 Country-Specific Recommendations in Support of the European Semester Process](#)

### Russia

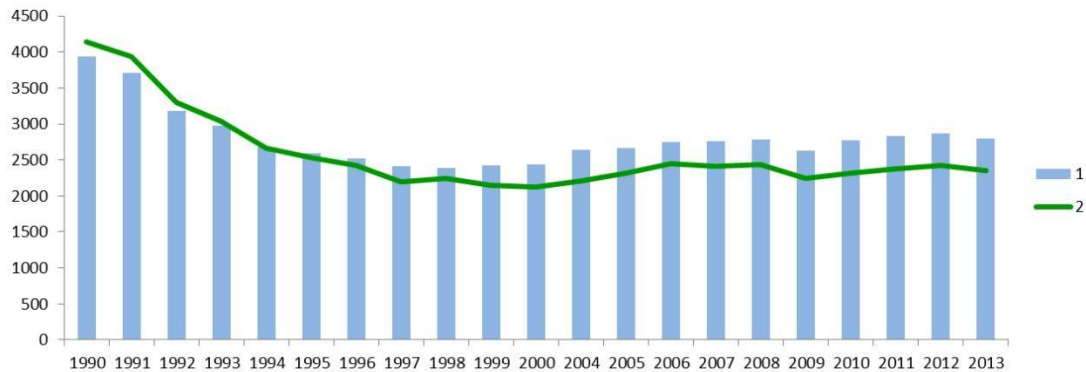


**Leading Emission Reduction Challenges:** (a) Problems in implementing existing climate change policies; (b) Dependence on fossil fuels as energy sources; (c) Changing peoples' perceptions

### Current Greenhouse Gas Emission Levels

As a Party to the Framework Convention on Climate Change and the Kyoto Protocol, the Russian Federation developed and regularly updates its national inventory of greenhouse gas emissions. The national Status Inventory Reports and detailed statistical information on GHG emissions and removals in the special reporting format are annually submitted through the UNFCCC secretariat and published on the official UNFCCC site. The latest Status Inventory Report and the common report with all GHG emissions from all inventory sectors, implied emission factors and activity data will be submitted in 2016 (for the year of 2014).

It shall be noted that, compared to the baseline situation in 1990, total GHG emissions in 2013 were down by 28.6% (or by 42.8% including the removals from land use, land use change and forestry). Figure 1 below demonstrates the overall trend of changes in GHG emissions year by year. The first long period of a general downward trend of emissions happened during the 1990–98 period in all the sectors and was linked with the negative dynamics of the general economic situation in the country. During the following years of economic growth, GHG emissions increased gradually at a modest pace through 2008. An economic crisis in 2008-2009 led to a small decrease in emissions in 2009 followed by a minor upcoming trend in 2011-2012 resulting from recovering industrial activity. It dropped slightly again in 2013 (by 1.3% in comparison with the previous year, excluding removals) and the current understanding is that 2014-2015 did not bring any meaningful increase in emissions.



Picture 1. Total GHG emissions (mln. t CO<sub>2e</sub>) in the Russian Federation excluding (1) and including (2) the emissions and removals from land use, land use change and forestry.

### Emission Reduction Challenges

The main drivers for the GHG emissions in the RF are the overall economic trends (increase or decrease of gross domestic product, GDP), changes in GDP structure, changes in fuel balance and at some point annual temperature variations from year to year and the respective changes in energy consumption.

There are several issues that prevent an easy way forward with decreasing the GHG emissions in Russia. These include:

1. Fossil fuels are accessible and relatively low priced in the RF;
2. The country economy is based on energy-consuming industries with heavy and partially old technologies;
3. There are no state restrictions or limitations for GHG emissions though the first steps in creating the state regulation tool as well as developing instruments for accounting and reporting have been undertaken;
4. Insufficient information in the society on climate change issues and the extent climate change is influencing the climate in Russia;
5. The current slowdown in the national economy spurs energy intensive business sectors to oppose climate-related regulatory measures that they consider may prevent them recovering growth, and leaves less opportunities for investment needed for upgrading technologies.

The main issues in this list are the first two points but they can't be resolved without progress on points 3 and 4. Therefore, at the moment the key actions from the

government are aimed at the development of a national strategy on climate change, improvement of state regulations on GHG accounting and reporting, identifying the approaches for reducing and putting appropriate limitations on GHG emission amounts for the industry. In addition, there is a growing recognition among various stakeholders that climate change is and will affect Russia more strongly than it was believed before. There are a number of NGOs and consulting and research organizations who are helping the community to understand climate change issues and trends in Russia. They disseminate relevant information and are involved in discussions at the national level.

During the last decades, Russia's development history demonstrates the effectiveness of good pilot projects and successful case studies. Therefore, national experts believe that the results of the current first small wave of renewable energy projects in Russia will lead towards the wider use of renewables such as biomass, wind and solar energy, etc.

--Submitted by Climate Scorecard Country Manager **Elena Zaika**

### Learn More

[http://unfccc.int/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/items/8812.php](http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8812.php)

### South Africa



**Leading Emission Reduction Challenges: (a) Dependence on fossil fuels as energy sources; (b) Rising consumer and/or industrial demand for energy-intensive products**

### Current Greenhouse Gas Emission Levels

South Africa faces many challenges when it comes to reducing its GHG emissions. The most challenging remains its largely energy dependent economy. The South African economy is dependent on coal for 93% of its electricity generation, an energy-intensive industrial sector, and an energy sector responsible for 82% of total GHG emission (DEA, 2014). According to the latest draft National Greenhouse Gas Inventory that documents South Africa's GHG emissions profile for the year

2010 and highlights trends for the 2000-2010 period- total GHG emissions have increased nearly 25%. Within the draft it was concluded that the increase in GHG stemmed largely from the energy and waste sectors that have increased from 75.1% to 78.7%, and 2.8% to 3.6% (DEA, 2014, p.68), respectively.

### **Emission Reduction Challenges**

South Africa's approach to mitigation is informed by two contexts: (1) its contribution as a responsible global citizen to the international effort to curb global emissions; and (2) its successful management of the development and poverty eradication challenges it faces. With this, energy efficiency measures, the roll out of renewable forms of energy, and also a nuclear energy roll out are being considered as the best options in reducing GHG emissions. There are however major challenges that must be overcome to realize this, including issues of cost, lead times, and the speed with which low carbon options can be established. The historically low cost of electricity means that carbon intensive electricity is cheaper than any other source of power, which makes it difficult for renewable energy and energy efficient options to compete with coal based power. An additional challenge is for the country to identify alternative power sources most suitable for wide spread roll out in the country. For more information, see <http://www.climateresponse.co.za/>.

### **Mitigation in the Energy Sector**

Development in the energy sector has the biggest influence on GHG emissions. The key policy framework for the energy sector is contained in the [1998 White Paper on Energy](#), and the subsequent [2003 White Paper on Renewable Energy](#) (DME, 2003). In 2005, the Energy Efficiency Strategy was formulated, which set a target for national improvement in energy efficiency of 12% by 2015 (DME, 2005)—however this was followed by very little implementation. Mitigation options in SA can be divided into three broad categories: (1) energy efficiency; (2) changing the fuel mix (moving to lower-or non-carbon emitting energy sources); and (3) structural changes to the economy which lower the energy intensity of the economy as a whole by shifting economic activity and investment to less energy-intensive sectors (Winkler & Marquand, 2009, p 55). Subsequently, key constraints in achieving implementation of the above can be grouped into three types: (1) markets, (2) institutions, and (3) lack of policy co-ordination. SA does not suffer greatly from a

lack of technological capacity as do many other developing countries. However, it does not pursue all projects with equal political will (Winkler & Marquand, 2009).

Key barriers to the development of energy efficient programs are low coal prices, and the uncertainty about the institutional structure of the electricity sector. There is no clarity under what terms the electricity sector would participate in a national effort to make SA more energy efficient; specifically there is uncertainty about the role that Eskom (the national public electric energy organization) will play.

As of yet, South Africa does not have a carbon tax but there is talk of its introduction within this year. The objective of a carbon tax would be to penalize companies and individuals that emit more carbon, and to reduce harmful GHG emissions. For more information, visit: <http://www.thecarbonreport.co.za/carbon-tax>.

### **Overcoming Constraints**

There is potential for international co-operation to assist with the removal of these constraints in the form of finance, technology, and capacity building. It is the view of many scholars that SA should use its own resources to support a range of mitigation options, but assistance on the more expensive options will be most needed if the country is to make a greater contribution to mitigation. A multilateral technology transfer facility can aid SA in promoting the 'development and climate agenda', addressing intellectual property rights barriers, accessing multilateral funding for technology development, and developing international technology standards, and research and development protocols (Winkler & Marquand. 2009, p 61). There also is a need for the training of officials and the seconding of experts to key strategic points in government. Although SA has significant technological capacity, external support in implementing certain types of mitigation projects would be useful.

--Submitted by Climate Scorecard Country Manager **Monique Classen**

### **Learn More**

DEA (Department of Environmental Affairs). 2013. Greenhouse gas inventory for South Africa 2000-2010. Pretoria, South Africa.

DME (Department of Minerals and Energy), 2003. Integrated Energy Plan for the Republic of South Africa. DME, Pretoria. [www.dme.gov.za](http://www.dme.gov.za)

DME (Department of Minerals and Energy), 2005. Energy Efficiency Strategy of the Republic of South Africa. March 2005. Pretoria.

[http://www.dme.gov.za/pdfs/energy/efficiency/ee\\_strategy\\_05.pdf](http://www.dme.gov.za/pdfs/energy/efficiency/ee_strategy_05.pdf)

Winkler, H. and Marquand, A., 2009. Changing development paths: From an energy-intensive to low-carbon economy in South Africa. *Climate and Development*, 1(1), pp.47-65.

## Spain



**Leading Emission Reduction Challenges: (a) Rising consumer and/or industrial energy demand; (b) Political and economic crises**

### Current Greenhouse Gas Emission Levels

The most recent credible data contains information from 2012, which indicates that Spain's greenhouse gas emissions were at 346.1.<sup>[i]</sup> Spain's greenhouse gas emissions have actually decreased since 2000—most likely a result of efforts in the renewable energies industry. However, with a 20% increase in emissions since 1990, Spain still has one of the largest emissions increases in the European Union as of 2014.<sup>[ii]</sup>

### Emission Reduction Challenges

There are two reasons why Spain's recent economic crisis has set back progress in reducing its GGH emissions: 1) It completely derailed the progress that Spain had made in moving toward renewable sources of energy, 2) As Spain attempts to recover from its financial crisis, its largest sector of greenhouse gas emissions (transport) may continue to increase in activity and thus, increase its level of emissions.

1) Prior to its economic crisis, Spain was making a great deal of progress in moving towards renewable sources of energy, namely wind, biomass, and hydropower. However, the financial crisis caused the Spanish government to make large budget cuts and unfortunately, the renewable energy industry suffered as a result of these cuts: the feed-in tariff policy was suspended, subsidies were removed, new taxes were implemented, premiums to current producers were reduced, and a



moratorium on premiums for new ventures was implemented. Naturally, this brought the development of Spain's blossoming renewable energy sector to a halt, and it has far from recovered.[iii] From the years 2005 to 2011, renewable energies grew a cumulative 8.5% and in fact, accounted for 30% of the energy produced (versus fossil fuels at 49%).[i,iii] However, the economic crisis put such a dent in the progress of renewable energies that in order to meet the 2020 target under the Kyoto Protocol, the industry will need to grow at an annual rate of 4.8% from 2011 to 2020—a nearly impossible task.

2) Spain has by no means recovered from its economic crisis; however, the unemployment rate has dropped slightly.[iv] Since the dip in greenhouse gas emissions circa 2010 has been attributed in part to unemployment in Spain—being that one of the biggest emitters is transportation accounting for over 50% of total energy consumption—the increase in the workforce will also mean an increase in transportation and thus greenhouse gas emissions.[iii,v]

For now, Spain intends to limit its greenhouse gas emissions by focusing mostly on decreasing consumption. The government has implemented the Energy Saving and Efficiency Strategy and set forth the Efficient Vehicle Incentive Program, along with several other measures directed at the transportation and housing industries. The Energy Efficiency Action Plan, also implemented by the Spanish government, will encourage the shift to transporting both people and goods by railroad and sea, and will encourage the replacement of older, less efficient vehicles with newer ones.

While attempting to reduce energy consumption alone will not allow Spain to meet its target levels of greenhouse gas emissions, it certainly is a start. The government initiatives to limit consumption indicate that the issue of climate change is indeed a priority to politicians, which is essential in ensuring the ratification of the Paris Agreement.

--Submitted by Climate Scorecard Country Manager **Andrea Delmar Senties**

## Learn More

[i] European Environment Agency. Climate and Energy Country Profiles, 2013.

[ii] European Environment Agency. Total greenhouse gas emission trends and projections, 2014. <http://www.eea.europa.eu/data-and-maps/indicators/greenhouse-gas-emission-trends-5/assessment-1>

[iii] The London School of Economics and Political Science, Grantham Research Institute on Climate Change and the Environment.

<http://www.lse.ac.uk/GranthamInstitute/legislation/countries/spain/>

[iv] Trading Economics. Spain Unemployment Rate.

<http://www.tradingeconomics.com/spain/unemployment-rate>

[v] European Environment Agency. GHG trends and projections in Spain.

## Thailand



**Leading Emission Reduction Challenges: (a) Rising consumer/ industrial energy sector demand.**

### Current Greenhouse Gas Emission Levels

As determined from the global carbon atlas, Thailand's recent level of greenhouse gas emissions from the year 2014 has been approximately 337 MtCO<sub>2</sub>. In this regard, Thailand's national greenhouse gas emissions were only 0.84% of global emissions in 2012, and in 2015 it was 0.64% of global emissions. From 1990-2012 Thailand's share of cumulative emissions was 0.75%. Thailand's per capita GHG emissions in 2012 were 5.63 tCO<sub>2</sub>e and emissions per GDP (US\$ million) were 409.54 tCO<sub>2</sub>e which were lower than the world average. With respect to the emission profile, the Second National Communication indicates that 67% of Thailand's total GHG emissions in 2000 were from the energy sector. In 2012, data obtained from CAIT determined around 73% were from the energy sector. Here, Thailand aims to reduce greenhouse gas emissions, which are generated from the energy sector, which includes transport.

### Emission Reduction Challenges

One of the major problems associated with Thailand's reductions in greenhouse gas emissions is energy security. To tackle the issues of energy security, the Government of Thailand initiated a shift to natural gas in the power generation sector as early as the 1980s. This effort continued throughout the 1990s. In 2005, about 72% of electricity in Thailand was generated using natural gas. These early actions in the energy sector created major challenges as Thailand is left with less

available choices and faced with higher marginal costs of further reducing GHG emission in the energy sector.

To make energy more efficient Thailand's Ministry of Energy introduced the Power Development Plan, which sets a target for achieving a 20% share of power generation from renewable sources in 2036. The Ministry also introduced the Alternative Energy Development Plan (AEDP) and the Energy Efficiency Plan (EEP). The AEDP aims to achieve a 30% share of renewable energy in the total final energy consumption in 2036. The EEP plans to reduce Thailand's energy intensity by 30% below the 2010 level by 2036.

Another problem, which hinders Thailand's reduction in greenhouse gas emissions, is the high costs and capacity constraints in the energy sector. For instance, very high investment and operating costs, particularly costs of technologies and infrastructures, can serve as a significant barrier to investments in renewable energy. Since Thailand is a developing country, it lacks the high technical capacity and effective coordination, which are required to support energy efficiency reforms. To address this problem, Thailand has domestically launched support mechanisms like feed-in tariffs, tax incentives and access to investment grants and venture capital for promoting renewable energy expansion. However, Thailand still has a long way to go in terms of establishing effective energy measures. Finally, in terms of the Paris Agreement pledge, no concrete roadmap has been prepared by the Thai government thus resulting in delays in the ratification process.

--Submitted by Climate Scorecard Country Manager **Neebir Banerjee**

### Learn More

[http://www4.unfccc.int/submissions/INDC/Published%20Documents/Thailand/1/Thailand\\_INDC.pdf](http://www4.unfccc.int/submissions/INDC/Published%20Documents/Thailand/1/Thailand_INDC.pdf)

<http://www.globalcarbonatlas.org/?q=en/emissions>

<http://climateanalytics.org/hot-topics/ratification-tracker.html>

## Turkey



**Leading Emission Reduction Challenges: (a) Rising consumer and industrial demand for energy; (b) Dependence on fossil fuel as an energy source; (c) Political crisis**

### **Current Greenhouse Gas Emission Levels**

Turkey is responsible for 0.94% of total global GHG emissions. This may not seem much but GHG emissions in the country increased from 170 million of tCO<sub>2</sub>eq in 1990 to 312 mtCO<sub>2</sub> in 2014. This increase makes Turkey one of the top 20 emitters in the world. The country has one of the fastest growing economies, and globally ranks second in natural gas and electricity demand growth after China. Projections show that this demand growth trend will continue to rise.

Turkey imports nearly 99% of the natural gas and 89% of its oil supplies. Therefore, the country is in need of diversification of its energy sources. Currently, primary energy demand is met by natural gas (35%), coal (28.5%), oil (27%), hydro (7%), and other renewables (2.5%).

### **Emission Reduction Challenges**

Leading emission reduction challenges include: (a) rising consumer and/or industrial energy demand; (b) dependence on fossil fuels as energy sources, especially oil and natural gas; and (c) the current political crisis.

Increasing economic growth and dependence on imported energy can be counted as factors that constrain Turkey's ability to fulfill its Paris Agreement goals. Further complicating emission reduction efforts are current political factors such as the recent military coup attempt, Syrian refugees, and tensions with Russia.

Leaving aside political issues, Turkey has been trying to reduce its dependence on imported energy that is mainly fossil fuels. A National Renewable Energy Action plan has been proposed for the period of 2013-2023, under which Turkey is committed to obtaining 30% of its total installed energy capacity from renewable sources such as hydro, geothermal, wind and solar. By 2023 Turkey plans to generate 10% of its total electricity demand from 2 nuclear power plants. Turkey also plans to increase coal-powered electricity output from 32 billion kilowatt-hours in 2014 to 57 billion Kwh by 2018.

According to current plans, Turkey might achieve its Paris Agreement pledge by boosting its renewable energy production and making improvements in energy efficiency. However, the plans for coal-powered electricity production and nuclear power plant construction leave a question mark on the sincerity of Turkey's commitment. The reduction of energy dependency by using coal at its source creates a conflict with reduction of GHG.

--Submitted by Climate Scorecard Country Manager **Özlem Duyan**

### Learn More

<http://www.mfa.gov.tr/turkeys-energy-strategy.en.mfa>

[http://www.iea.org/media/freepublications/security/EnergySupplySecurity2014\\_Turkey.pdf](http://www.iea.org/media/freepublications/security/EnergySupplySecurity2014_Turkey.pdf)

[http://www.turkstat.gov.tr/indir/metodolojikDokumanlar/sge\\_metod\\_en.pdf](http://www.turkstat.gov.tr/indir/metodolojikDokumanlar/sge_metod_en.pdf)

[http://www.eie.gov.tr/verimlilik/document/Energy\\_Efficiency\\_Strategy\\_Paper.pdf](http://www.eie.gov.tr/verimlilik/document/Energy_Efficiency_Strategy_Paper.pdf)

### Ukraine



**Leading Emission Reduction Challenges: (a) Political and economic crisis; (b) Problems implementing existing climate change policy and legislation**

### Current Greenhouse Gas Emission Levels

Ukraine committed to a target of 40 percent reduction of greenhouse gas emissions by 2030, compared to 1990 levels, and so far seems to be successful in the fulfillment of its Paris Agreement Pledge. The current level of GHG emissions is 385.93 MtCO<sub>2e</sub> which is about 55% less than the respective number for the year 1990. However, there are some issues that might intervene with Ukraine's success in this area and most of them have to do with either financial problems or the countries excessive bureaucracy system.

## Emission Reduction Challenges

Ukraine currently is in a state of a deep political and economic crisis, which makes it hard to attract international investors willing to invest in environmentally important projects. The war has led to the shutdown of many of the country's environmental programs especially the ones that have to do with hydraulic power development, many of which were based in the Crimea. In addition to this, the high cost of green technologies currently makes environmental modernization impossible for a significant number of companies. One of the possible solutions to this issue suggested by the Ukraine's Center for CSR Development, is to introduce financial and tax benefits for companies who are actively implementing the main elements of environmental modernization.

Another problem that stands in the way of Ukraine's GHG emission reduction efforts is the country's extremely rigid regulatory framework and the complexity of administrative procedures that have to do with ecological matters. At present, obtaining environmental licenses and permits entails numerous bureaucratic obstacles and often unnecessarily excessive paperwork. In order to combat this problem, some experts suggest creating a new national institution governed by The Ministry of Ecology and Natural Resources of Ukraine. This new Ministry would be responsible for coordinating the work of various government structures that are involved in issuing green licenses and insuring that there are no inconsistencies in governmental policies and practices regarding greenhouse gas emissions. Many environment experts agree that the public license issuance system needs to become more accessible, which can only be made possible through a closer dialogue between the government and the companies who employ green practices and technologies.

--Submitted by Climate Scorecard Country Manager **Diana Sentjurova**

## Learn More

<http://ua-energy.org/post/60301>

<http://bellona.org/news/ukraine/2016-06-zhyttya-pislya-paryzha-chas-diyaty>

<http://csr-ukraine.org/wp-content/uploads/2016/06/Analysis-Questionnaire-CSR.pdf>

<http://www.lse.ac.uk/GranthamInstitute/legislation/countries/ukraine/>

<http://smarteco.biz.ua/oleksandr-dyachuk-pro-zaluchennya-investytsij-v-zeleni-tehnologiyi/>

## United Kingdom



### Leading Emission Reduction Challenges: (a) Problems implementing existing climate change policies

#### Current Greenhouse Gas Emission Levels

The UK's level of greenhouse gases has been on the downward trend. Available statistics for the first quarter of 2016 show that the level of greenhouse gas emissions is decreasing. A report produced by UK's Department of Energy and Climate Change show that the total greenhouse gases reduced from 495.212.2 MtCO<sub>2</sub>e in the last quarter of 2015 to 483.012.2 12.2 MtCO<sub>2</sub>e in the first quarter of 2016 which is a 2.5% difference. This reduction has been attributed to the reduction in the use of coal for electricity generation in the first quarter of 2016.

#### Emission Reduction Challenges

The UK seems to be on the right track in reducing its level of greenhouse gas emissions. This has been accompanied by setting ambitious targets and adopting its **Climate Change Act**. However, if the UK does go ahead with onshore petroleum and gas exploitation, this could hamper the current efforts being made towards reducing its greenhouse gas emissions. The Committee on Climate Change (CCC)'s report states that onshore petroleum and gas exploitation on a large scale is not compatible with UK's carbon budgets unless it meets three tests. These tests include tight regulation and close monitoring of emissions, keeping gas consumption within the carbon budget requirement and accommodating shale gas emissions in the carbon budgets.

Onshore petroleum and shale gas exploitation is being considered by the UK as an option for reducing oil imports and meeting its carbon budgets. For shale gas in particular, the government believes that it can be a bridge in electricity generation as the country moves away from coal generation towards energy efficiency, renewables and nuclear. They also believe that the three conditions stated in the CCC report will be met.

Another new challenge might arise from a plan being adopted to collapse the Department of Energy and Climate Change and incorporate them into the Business Department. This has been met with concerns that climate change may no longer be a priority. However, the Minister of the now Department of Business Energy and Industrial Strategy has a track record of being a strong supporter of green issues. Hopefully, with this track record, climate change and the reduction of greenhouse gas emissions will still remain a priority for the UK government.

--Submitted by Climate Scorecard Country Manager **Fridah Siyanga-Tembo**

### Learn More

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/533689/Quarterly\\_emissions\\_statistics\\_release\\_Q1\\_2016.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/533689/Quarterly_emissions_statistics_release_Q1_2016.pdf)

<https://www.theccc.org.uk/2016/07/07/exploitation-of-onshore-petroleum-requires-three-key-tests-to-be-met-ccc-says/>

<https://www.theccc.org.uk/wp-content/uploads/2016/07/CCC-Compatibility-of-onshore-petroleum-with-meeting-UK-carbon-budgets.pdf>

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/535208/CCC\\_Response\\_new\\_template\\_FINAL.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/535208/CCC_Response_new_template_FINAL.pdf)

<http://www.edie.net/news/16/What-does-the-ministerial-shake-up-mean-for-the-green-economy-/>

### United States



**Leading Emission Reduction Challenges: (a) Political opposition to climate change legislation; (b) Problems implementing existing climate change policies and programs**

### Current Level of Greenhouse Gas Emissions

Primary sources of greenhouse gas emissions in the US come from burning fossil fuels for electricity production, for heat, and in transportation. In 2014, the US emitted 6,870 million metric tons of CO<sub>2</sub> equivalent, contributing 16% of global emissions. Two-thirds of electricity production in the US comes from burning coal



and natural gas. Since 2005, emissions have fallen 6.5% while the economy continues to grow, thanks in part to federal financial assistance packages. Emissions projections oscillate between continued decreases in emissions and business as usual increases depending on political support.

### **Emission Reduction Challenges**

As the second largest contributor of greenhouse gas at 16% of global emissions, the US faces considerable challenges to making the reductions pledged at the Paris summit. The greatest hurdle for the US to hold up its end of the Paris Agreement is occurring at the policy level. A combination of political gridlock on decision-making and political opposition to decisions addressing climate change are preventing much meaningful action at the national level.

Key Republican Congressional delegates opposed the Obama administration's approach to the negotiations in Paris, and their subsequent outcomes and goals. Little legislative action has been initiated by the Obama administration since December in anticipation of the lack of support from the Republican-led Congress. The current administration has committed to reducing US greenhouse gas emissions with the Clean Power Plan. This Plan aims to reduce GHG emissions from the power sector, currently responsible for 30% of the nation's emissions. By not addressing the other 70% of emissions, however, the administration has faced criticism from the scientific community for not taking strong enough policy action. The Union of Concerned Scientists is calling for policies to address the rest of US emissions, such as vehicle efficiency standards, standards for methane emissions, and increased efficiency of appliances.

With presidential elections in November, the two main candidates are presenting starkly different climate plans. Republican front-runner Donald Trump decries the reality of climate change, and has stated he would "cancel" both the Paris Agreement and the Clean Power Plan. His America First Energy Plan further intends to revive coal-power production and expand gas and oil extraction within the United States.

Alternatively, the Democratic candidate Hillary Clinton has laid out a climate-change strategy that includes reducing reliance on oil and gas, reducing energy waste and becoming an international leader in energy-efficient manufacturing, and shifting home energy consumption to renewable sources solar and wind.

Without waiting for federal policy, many states are establishing goals of transitioning away from coal power and towards utilizing renewable resources. Investors in the private sector too have increasingly demanded internal action towards green energy, causing nearly \$42 billion to be issued in green bonds during 2015. Despite these state-level and private-sector efforts, it is clear that successes in the US for reducing greenhouse gases will be linked to national political outcomes in the coming months.

--Submitted by Climate Scorecard Country Manager **Ben Carver**

**Learn More:**

<http://www.state.gov/documents/organization/219038.pdf>

<https://www.donaldjtrump.com/press-releases/an-america-first-energy-plan>

<http://blog.ucsusa.org/rachel-cleetus/us-paris-agreement-climate-change-commitments>

[http://www.shearman.com/~/\\_media/Files/NewsInsights/Publications/2016/03/Paris-Climate-Accord-Implementation-United-States.pdf](http://www.shearman.com/~/_media/Files/NewsInsights/Publications/2016/03/Paris-Climate-Accord-Implementation-United-States.pdf)

<https://www3.epa.gov/climatechange/ghgemissions/sources.html>

<https://www.hillaryclinton.com/issues/climate/>

## About Climate Scorecard

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 Climate Scorecard Works

The Climate Scorecard team has established a website -[www.climatescorecard.org](http://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](http://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 ([roncisaerl@gmail.com](mailto:roncisaerl@gmail.com)) or Lois Barber, Executive Director, EarthAction ([lois@earthaction.org](mailto:lois@earthaction.org))