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The Paris Climate Negotiations and Beyond: Staying Under a Two Degree Celsius Ceiling

After the failure of the Copenhagen climate negotiations in 2009, a decision was reached in Durban, South Africa in 2011 to strive for a global climate agreement to be reached in 2015 in Paris that should go into effect in 2020. In response, countries have been preparing voluntary pledges of action, known as intended nationally determined contributions (INDCs).

As of 30 October 2015, 128 INDCs had been submitted. In total, these INDCs cover about 87 per cent of 2010 global greenhouse gas emissions (excluding land use, land-use change and forestry, i.e. LULUCF). Five countries and the European Union account for about 65 per cent of global emissions: China (29 per cent), followed by the United States (16 per cent), the European Union (11 per cent), India (six per cent), Russia (five per cent) and Japan (four per cent). Their INDCs provide a picture of what can be expected in Paris in relation to greenhouse gas mitigation plans. Here the INDCs are outlined and assessed:

China: In China's view, the main historical responsibility for rising greenhouse gas emissions lies with the developed countries. In 2012 per capita greenhouse gas emissions in China (7.1 tonnes) were still well below those in North America (16.4 tonnes in the United States and 16 tonnes in Canada) but close to those of the EU average (7.4 tonnes). This has made it harder for China to continue to argue that as a developing country it should be treated differently. In a historic move, President Xi Jinping announced China's INDC will cap greenhouse gas emissions by 2030 and increase the non-fossil fuel share of energy to 20 per cent by 2030. In addition, the carbon intensity of GDP is to be lowered by 60-65 per cent below 2005 levels by 2030, and forest coverage is to be expanded.

United States: According to the US INDC, the country will cut emissions by 26-28 per cent below 2005 levels by 2025, with a best effort to reduce them by 28 per cent. Blocked by an unsupportive Republican-dominated Congress, President Barack Obama has turned domestically to the use of executive orders to combat climate change. The most important measure is the Clean Power Plan, which aims to cut emissions from power plants by 32 per cent by 2030. Obama has also ordered greenhouse gas emissions from federal government activities be cut by 40 per cent compared to a 2008 baseline and tighter emission standards for automobiles and trucks.

European Union: The EU has been at the forefront of global efforts to tackle climate change. Yet these efforts have also elicited a degree of resistance from various member states, especially those with a large dependency on fossil fuels and weak economic conditions. The EU's INDC is a binding 40 per cent greenhouse gas emissions reduction target (relative to 1990 levels), a renewable energy target of 27 per cent of final energy and a minimum energy efficiency improvement of 27 per cent. These targets are lower than what was called for by the European Parliament. No agreement has yet been reached on how responsibility for the renewable energy target is to be achieved on a country-by-country basis.

Russian Federation: Russia's emissions dropped by an estimated 30 per cent after the collapse of the Soviet Union's inefficient and uncompetitive industrial structure. In the Kyoto Protocol negotiations, the Russian Federation succeeded in winning the right to increase, rather than further decrease, its emissions. Essentially, the same is true in relation to Paris. Russia has a goal to reduce greenhouse gas emissions to 25-30 per cent below 1990 levels

by 2030. This is, however, estimated to be about a 30-38 per cent increase in emissions compared to 2012 levels.

India: Per capita emissions in India are far lower than in any of the other major emitting economies (about 1.7 tonnes of CO₂ per capita compared to 7.4 for China, 7.3 for the EU and 16.6 for the US). India has tended to follow the Chinese position on climate change but has not set any date for a greenhouse gas emission ceiling. India's INDC is to lower the emissions intensity of GDP by 33-35 per cent below 2005 levels, to increase the share of non-fossil fuels in the power mix to 40 per cent of installed electric power capacity by 2030, and to expand forest cover.

Japan: Prior to the Fukushima nuclear accident, the Japanese government's climate change commitments assumed that dependence on nuclear energy would grow. This led to Japan's Copenhagen pledge to reduce emissions by 25 per cent of 1990 levels by 2020. After the accident, this goal was abandoned, and with uncertainty regarding how many nuclear plants will be restarted, the Japanese government settled on an emissions reduction cut of 26 per cent of 2013 levels by 2030 (the equivalent of 18 per cent below 1990 levels). The target includes the use of flexibility and crediting mechanisms, meaning only a limited share of the cuts are to be achieved domestically.

The Climate Action Tracker (CAT), an independent scientific analysis produced by the CAT Consortium (Climate Analytics, Ecofys, NewClimate Institute and the Potsdam Institute for Climate Impact Research), rates China's INDC as "medium with inadequate carbon intensity targets". While the assessment notes positive developments in terms of China's plans to restrict coal consumption, not enough is being done to address non-CO₂ greenhouse gas emissions. The CAT assesses the US pledge as "moderate". The Clean Power Plan is applauded, but additional measures will be needed to reach the 2025 goals. The EU's plan gets a "medium", with the critique that existing policies and measures are projected to reduce domestic emissions by only 23-35 per cent below 1990 levels, which is insufficient to meet the 2030 target. Also unclear is the extent to which the EU will rely on LULUCF accounting. The Russian Federation's plan gets an "inadequate" rating, as little is being done to cut the growth in emissions. India was rated with "medium" and is urged to be more transparent about the contributions to be made by various sectors, the greenhouse gas emissions covered and the manner in which the targets are to be achieved and measured. India's commitments are viewed as at the least ambitious end of a fair contribution. The CAT rates the Japanese target as "inadequate" and laments that if other countries followed a similar approach, global temperatures would likely exceed three to four degrees Celsius in the 2100s. The World Resources Institute calls the target "one of the least aggressive targets of any developed country to date... except for that of the Russian Federation".¹

Any deal reached in Paris is unlikely to keep temperatures from rising above two degrees Celsius, let alone the 1.5 degrees Celsius called for by many countries threatened by sea level rise, by the end of this century. The CAT estimates the INDCs submitted as of 1 October 2015 will put the world on track to a 2.7 degree Celsius average temperature increase. An alternative assessment by Climate Interactive, a not-for-profit organisation based in Washington, D.C., estimates a 3.5 degree Celsius temperature increase.

It will be very important that the Paris agreement include mechanisms that allow for corrections and for the strengthening of targets as new scientific data becomes available. Steps will also be needed to enhance the transparency of pledges and to utilise standardised approaches for measuring and verifying progress.

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¹ M. Ge, T. Fransen: Japan Releases Underwhelming Climate Action Commitment, World Resources Institute, 23 July 2015.