

# The cold calculus of cash and carbon

How to navigate the climate negotiations from Warsaw to Paris



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## Disclaimer & Disclosures

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- ▶ **The shape of a new global climate deal in Paris at the end of 2015 is emerging**
- ▶ **It will involve a compact hub, with a set of side agreements ('spokes')**
- ▶ **Warsaw needs to kick-start the process and agree the rules of the game**

## Small Hub, Big Spokes

As temperatures drop in the Northern hemisphere, the 2013 negotiations of the UN Framework Convention on Climate Change (UNFCCC) will take place in Warsaw (11-22 November). This year, the COP 19 talks will need to spell out how countries are going to achieve a new agreement in December 2015. We believe that many lessons have been learned from previous attempts (notably at Copenhagen in 2009) – not least the need to aim for compact 'hub' agreement within the UNFCCC, bolstered by an array of 'spokes' in terms of side-agreements, potentially outside the formal process.

Three interlocking packages will be needed for 2015 to be a success – and Warsaw can help by setting the right level of ambition and agreeing the rules of the game. First, carbon cuts need to be accelerated pre-2020: we highlight 10 actions with positive economic benefits, prioritising energy efficiency, fossil fuel subsidy reform and the introduction of a shadow cost on carbon across the OECD. Second, the framework for long-term cuts needs to be agreed: we set out the 'ABCDE' of successful design. And third, climate finance from public and private sources needs to be deployed at scale: the Green Climate Fund (GCF) needs to receive some actual cash fast and the system-level barriers that prevent private flows have to be resolved.

To make this all happen, we set out the seven steps that negotiators will need to take between now and December 2015, with initial offers next year followed by review and revision in 2015. We also identify two wildcards which could influence events over the next two years. The first is how the embryonic agenda on loss and damage evolves, and the second is whether a transformational bilateral China-US deal on coal could be delivered.

# The Warsaw Wheel

- ▶ Negotiators gather in Warsaw as the climate agenda begins a cyclical upswing in sentiment
- ▶ Warsaw needs to deliver clarity on how carbon and financial commitments will be packaged through to 2015
- ▶ Governments then need to spend 2014 designing and presenting their first quantified commitments for achieving a deal

## Warsaw: not just a coal COP

This year's global climate negotiation (COP 19) is being hosted by Poland in Warsaw. Many have feared that this could be the 'coal COP'. The host country draws over 50% of its energy demand from coal. This is considerably higher than the EU and the USA and stands only third after South Africa and China (Chart 1). But Poland has cut its GHG emissions by 32% in the first Kyoto period which ended last year and is on track to meet its 2020 targets as part of the European Union.

Yet, the coal theme could prove apposite. Coal is the most carbon intensive of fuels – and the downward pressures on coal (notably in China and the USA)

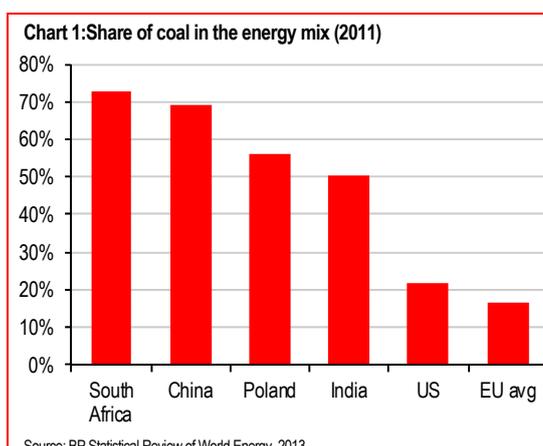
are one of the four 'horsemen of hope' we have identified as helping to drive a new upswing in the climate agenda: the others being energy efficiency, science & impacts and carbon pricing. In most, we have seen positive trends since Doha – except pricing where Australia's decision to scrap its carbon tax represents a step backwards.

Four years after the inconclusive Copenhagen summit, there is emerging clarity that a successful outcome in Paris will form a wheel – with a compact 'hub' agreement and a set of side agreements or 'spokes', sometimes negotiated outside the formal UNFCCC process. What Warsaw needs to do is agree the 'rules of the game' for what governments have to deliver in terms of carbon and cash over the next two years.

## Doing the carbon two step

### Boosting pre-2020 ambition

Global emissions are still going up – though at a slower rate at last. But they have to peak before 2020. To do this, governments need to build alliances that can deliver wider economic and environmental reforms and can cut GHGs fast. We identify 10 ideas, prioritising extra action on energy efficiency, slashing fossil fuel subsidies and introducing a shadow price on carbon across the OECD.



## The 'ABCDE' of post-2020 deal

The core of the Paris deal will be the architecture for post-2020 emission cuts. To make progress, we believe that five principles need to be in the minds of governments as they negotiate the post-2020 agreement and draw up the pledges they will make over the next two years:

- (i) **Adequacy** - meet the 2°C goal
- (ii) **Bravery** – inject real leadership
- (iii) **Comparability** – be transparent and quantifiable
- (iv) **Dynamism** – enable progressive tightening of commitments from 2020 to 2050
- (v) **Equity** – respecting both responsibility and the capacity to act

## Finding the finance

According to the Climate Policy Initiative, global climate finance was valued at USD359bn in 2012. But USD1trn in climate finance will be needed each year from 2010 to 2030. A critical dimension will be expanding flows into developing countries, ideally exceeding the USD100bn target. Three measures can help to start closing the gap. Industrialised countries need to specify their 'follow-on finance' for 2013-2015. As part of this, the Green Climate Fund needs to receive real cash during 2014. And policymakers need to focus on the financial market reforms that

will mobilise private capital flows, a key 'spoke' of the wheel.

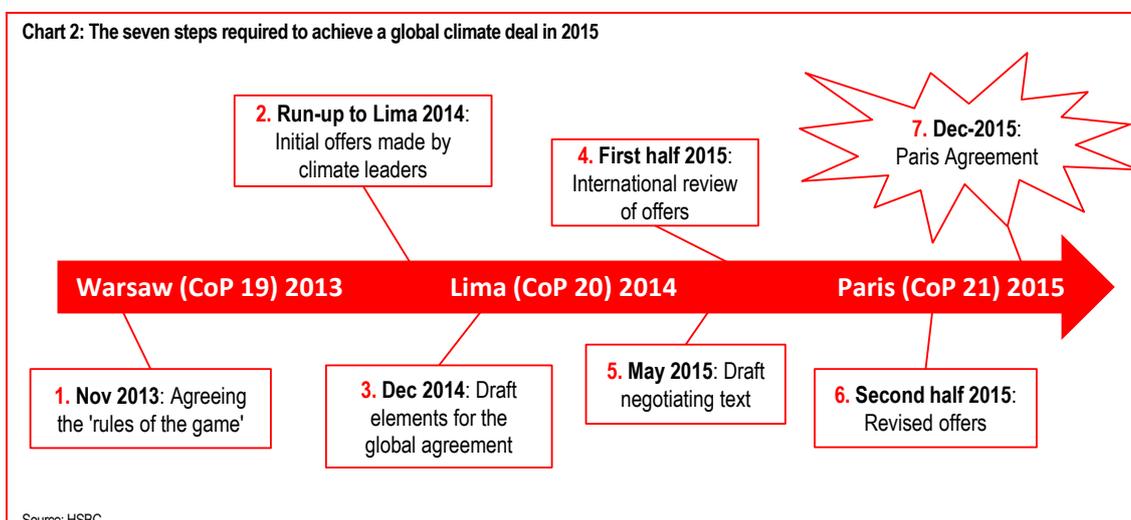
## The Climate Countdown

We identify seven stepping stones to a legally binding agreement in Paris (Chart 2).

1. Agreeing the 'rules of the game' (Warsaw, November 2013)
2. Initial offers made by climate leaders before the Climate Summit (September 2014) and in the run-up to Lima CoP
3. Draft elements for the global agreement resolved (Lima, December 2014)
4. International review of initial offers (first half of 2015)
5. Presentation of draft legal text (May 2015)
6. Revised offers in response to the review (second half of 2015)
7. Convergence of new offers and final refinements in the Paris Agreement (December 2015).

Beyond these, two wildcards stand out for us: how the embryonic 'loss and damage' agenda evolves, and the potential for a transformative bilateral deal on coal between China and the USA.

Chart 2: The seven steps required to achieve a global climate deal in 2015



Source: HSBC

# Warming up, cooling down

- ▶ The Warsaw talks start as emissions continue to rise, but at a slower rate
- ▶ Positive trends over the past year include China-US cooperation, accentuation of measures to control coal and new science
- ▶ Set against this are negative pressures, notably Australia's moves to scrap its carbon scheme and political pressure in the EU on the cost of action

## Nearer the cliff, but slowing

The annual climate negotiations provide a seasonal opportunity to take stock of the climate agenda. Last year, ahead of the Doha CoP18 talks, we highlighted how the global economy was heading for a 'climate cliff' – like a fictional Roadrunner, overshooting the 2°C target. Then we highlighted four 'horsemen of hope' which could keep the road to a low-carbon economy open:

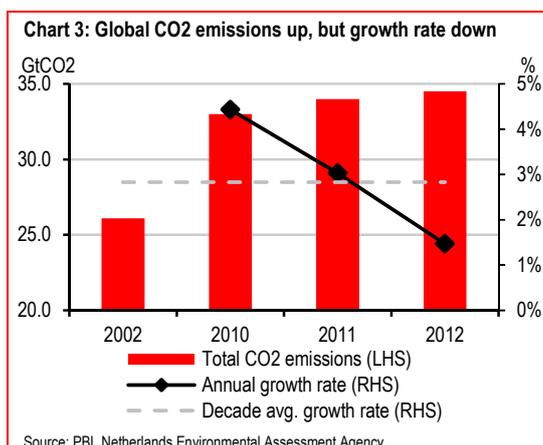
**Coal:** the convergence of factors bearing down on coal demand

**Efficiency:** the untapped potential to raise the rate of efficiency improvement

**Impacts:** the growing awareness of the reality of climate disruption; and

**Pricing:** the re-emergence of carbon pricing as a tool for change.

Since then, global CO2 emissions hit a historical high in 2012, but with a lower rate of growth, half the decadal average (Chart 3). Strategically, the signals on these four factors have been mixed – with pressure on coal continuing in both China and the USA. The efficiency momentum has slowed, but again with China moving ahead. Awareness of climate impacts has been maintained – and new IPCC science has laid the basis for more strategic action. It is in the area of carbon pricing, however, that progress is weakest, with the new Australian government moving to scrap its carbon tax system. This has been partially offset by positive moves in China and Korea and signs that ETS reform in the EU will finally move ahead (Chart 4).



**Chart 4 The Four Horsemen of Hope: 2012 and 2013 Compared**

	2012	2013
Coal	√√	√√
Efficiency	√√	√
Impacts	√	√√
Pricing	√	√X

Source: HSBC

## The elephants begin to dance

Between them, China and the USA account for 40% of global emissions – and their actions will be central to a global deal. Since Doha, the dance between these two ‘carbon elephants’ – has become more sophisticated, with concerted action to curb emissions of hydrofluorocarbons (HFCs) a major non-carbon GHG (see [China & the US: clearing the air](#), 26 June 2013).

Domestically, the Obama Administration has given increased priority to climate change, and focused on using existing regulatory instruments such as the Clean Air Act rather than hope for Congressional support. In China, the new leadership has demonstrated increased desire to tackle issues which affect social stability – corruption and the environment. Dealing with high profile air pollution crisis will have carbon and climate co-benefits. China has also been the prime driver behind the energy efficiency theme, highlighted with the State Council’s plan to grow the efficiency and environmental sector by 15% p.a. to 2015 (see [China’s RMB4.5trn green boost](#), 13 August 2013). We believe that this could herald a host of measures including fiscal incentives, preferential policies and financial opportunities in the form of green bonds.

### Clamping down on Coal

Both China and the US have chosen environmental regulation as the tool of choice in tackling climate – and coal is bearing the brunt of the regulation. The US EPA has moved from ‘snail’s pace’ to ‘centipede pace’ as it tries to expedite carbon pollution rules for the power sector (see [US: new rules cap coal emissions](#), 25 September 2013). The Obama Administration has ended US federal financing for coal projects internationally on a bilateral basis, and was also a driving force behind the World Bank’s stringent new policy on coal, which will now only be financed in ‘rare circumstances’.

The Chinese authorities – at both central and increasingly at local level – are facing the realisation that air pollution reduction cannot be achieved without cutting coal (see [Air pollution causes cancer](#), 25 October 2013). A major shift away from coal and into gas is taking place in major cities and the discussion on long-term coal consumption caps is gathering momentum.

### Soothing trade tensions

The flare-up in trade tensions from 2012 in rare earths, renewables and aviation has mostly died down with fairly positive resolutions, in our view. Market sentiment was boosted by the EU and China solar agreement in July which set a minimum price and quota for Chinese imports of solar panels. China continues to increase its solar installation target (now 35 GW by 2015), deploying excess capacity in the domestic market.

## The science has spoken

Popular awareness of climate disruption has continued at a high level since Doha. Published in September, the Climate Asia survey found that in China 78% of the 5,062 people surveyed felt that climate change is happening and 74% didn’t feel prepared for an extreme weather event. Furthermore, 81% are feeling the impact of the environment on health. Across the USA, recent polling from the Yale Center on Climate Communications has highlighted a variability in concern – but with clear majorities acknowledging the reality of climate change: 87% of San Franciscans believe it is happening and 67% of these believe it is caused by human action; this falls to 70% and 49% in Columbus (Ohio), and 70% and 44% in Texas.

We believe that this popular awareness will be strengthened by increasing attention to climate change over the next two years, not least through successive reports from the IPCC. Its first volume on the Science of Climate Change was crystal

clear that global warming is “unequivocal” and that “human activities are extremely likely to be the dominant cause” (see [IPCC: Science, Impact, Forecasts](#), 27 September 2013).

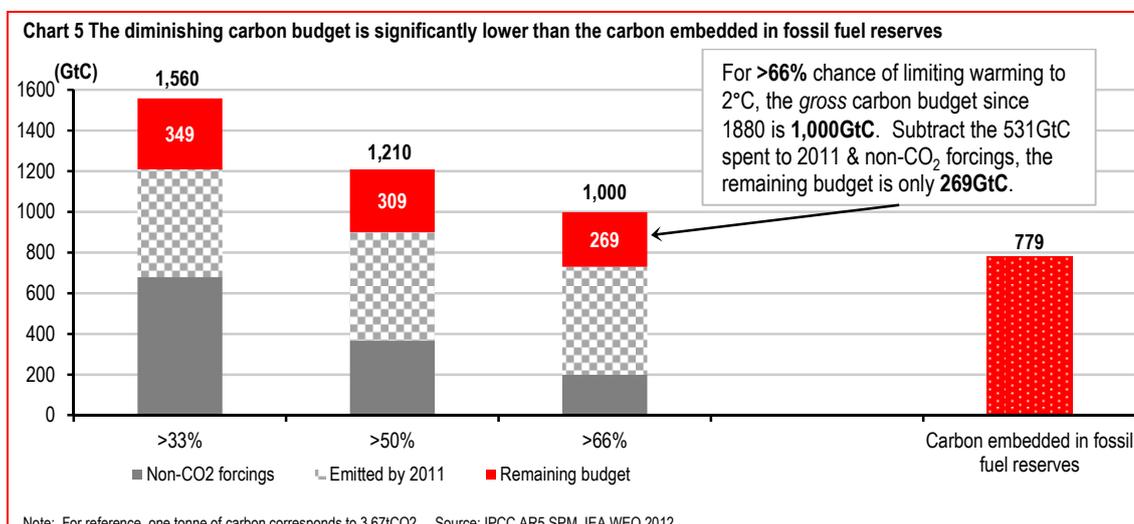
The IPCC report also provided greater clarity on the available carbon budget to achieve the 2°C target. The IPCC set a one trillion tonne (1,000GtC) budget for the amount of carbon that the global economy can emit by the end of the century and have a two-thirds probability of meeting the target (see Chart 5). But only 269GtC remains – a fraction of the 779GtC stored in the world’s coal, oil and gas reserves (see [Investing within a carbon budget](#), 30 September 2013).

From a negotiating perspective, the carbon budget invokes hard choices in terms of allocations between countries, a core equity issue throughout the UNFCCC’s history. Given that industrialised countries have consumed the largest per capita share of the budget, developing countries are insistent that what’s remaining should be allocated with ‘historical responsibilities’ in mind – a point recently re-emphasised by Brazil. From a popular perspective, however, the carbon budget provides clarity to an often amorphous agenda – and has helped to redefine climate risks for investors (see [Coal and Carbon](#), 21 June 2012 and [Oil & Carbon Revisited](#), 25 January 2013).

## A bump in the road to pricing

The slow upward trend in pro-climate sentiment is not all one-way. Although China and Korea have followed through on commitments to introduce carbon trading schemes, Australia’s new government has started to execute its pre-election pledge to remove key parts of the country’s low-carbon landscape. This includes repealing its carbon tax—the first time that a country has moved backwards on carbon pricing.

In Europe, there is a noticeable pushback against the perceived costs of green taxes and clean power, notably in France (where protests have halted the eco-tax on trucks) and the UK, where changes to energy tariffs are expected in the Autumn Statement on 4 December, potentially switching consumer levies to general taxation. In Germany, dealing with the cost of the renewable electricity surcharge is one of the four priorities of the new Coalition. We have highlighted how Germany could both meet its 2020 climate targets and cut energy costs by boosting efficiency measures – but we have yet to see a shift in policy priority from the supply to the demand-side (see [Where next for the Energiewende?](#) 13 September 2013). In our view, Europe has still to design a climate strategy suited for austerity (see [Rejuvenating Europe’s climate](#), 1 November 2013).



# Doing the carbon two step

- ▶ Warsaw needs to inject urgency into the twin track negotiating process, pre-2020 and post-2020
- ▶ We highlight 10 ways of getting early reductions, prioritising energy efficiency, fossil fuel subsidies and shadow carbon pricing
- ▶ We also lay out the ‘ABCDE’ of getting an effective post-2020 agreement, delivering a vision of zero net emissions

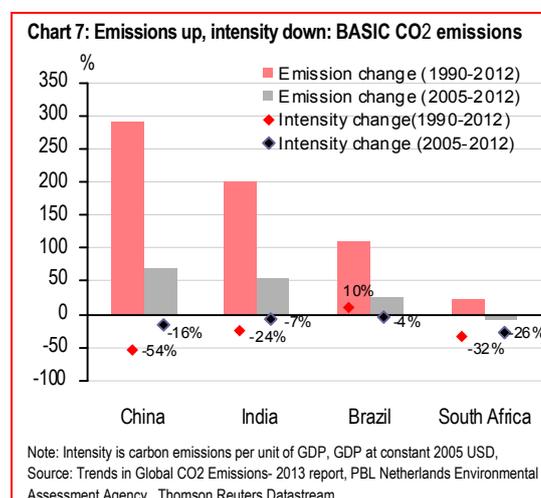
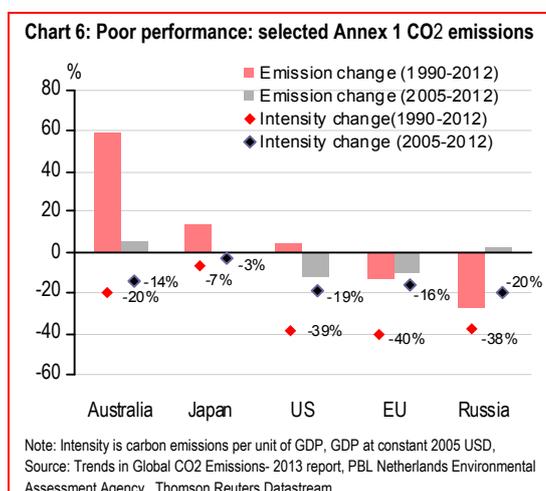
## First step: pre-2020 action

### Industrialised world: still far off

Staying true to the 2°C target means hitting ‘peak carbon’ before 2020 and steadily reducing thereafter (see [Peak Planet](#), 25 March 2013).

Work stream 2 of the Ad Hoc Working Group of the Durban Platform for Enhanced Action (ADP2) is dedicated to the pre-2020 agenda. Central to this was the estimate made in the last IPCC back in 2007 that industrialised countries (Annex 1) would need to cut their GHG emissions by 25-40% from 1990 levels by the end of this

decade. By the end of 2012, however, only a 7.7% reduction in CO2 emissions has been achieved, based on the latest data from the Netherlands Environmental Assessment Agency. Chart 6 shows key countries such as Australia have actually increased their CO2 emissions by almost 60%. The EU is on track to meet its 20% target; the USA is set to achieve its goal of a 17% cut below 2005 levels, but is still emitting more than 1990. Only Russia among the major Annex 1 countries is on course to deliver the required cuts - but as a result of the economic collapse of the Soviet Union, not by policy design.

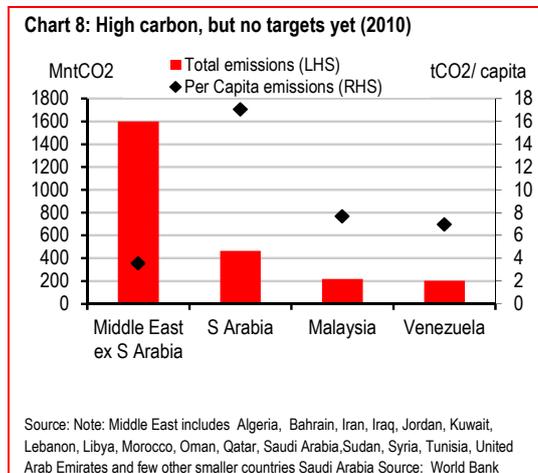


Worse still, the proportion of global CO<sub>2</sub> emissions covered by the Kyoto Protocol has fallen from 27.5% in the first period ending last year to 12.5% in the 2nd period from 2013-2020: Canada, Japan, New Zealand and Russia have joined the USA outside Kyoto. In addition, Russia and other former Soviet bloc nations remain displeased by the way in which Kyoto2 was agreed in Doha, impacting on the pace of negotiations this year for the new agreement.

### Emerging world: more to come

Since 2009, however, emerging economies have also stepped forward, so that 90 countries from both North and South have made carbon commitments covering 80% of global emissions. The emerging economy pledges focus on reductions in emissions relative to GDP (carbon intensity) or a 'business as usual' projection. Chart 7 illustrates that China's performance is perhaps the most eye-catching: a 293% increase in absolute emissions since 1990, but a 54% cut in carbon intensity, better than all the Annex 1 countries.

But there are still countries that have yet to join the carbon cutting consensus, representing the remaining 20% of global emissions. Many of these are oil-producing nations, often high income and with high per capita emissions: going into the 2015 talks it is increasingly unfeasible for these affluent nations to stand aside (Chart 8).



### Closing the carbon gap

All this means that the world is facing a widening carbon gap between what is needed for 2°C by 2020 and what will happen even if all existing pledges are implemented fully. According to UNEP, global emissions in 2010 were around 49GtCO<sub>2</sub>e, and will rise to 52-56GtCO<sub>2</sub>e if pledges are met (a big if). This leaves an 8-12Gt gap.

So far in the negotiations, governments have stuck to their traditional positions and offered little innovation. The BASIC countries Brazil, South Africa, India, and China met last month and reiterated that the ever-shrinking Kyoto Protocol should be the main mechanism for increasing ambition pre-2020. The USA, by contrast, highlighted the absence of 20% of global emissions from pledges (Table 1).

At this stage in the negotiations, it is not surprising that governments are keeping their cards close to

**Table 1: Stuck in the Past? Negotiating positions of key countries at Warsaw on increasing pre-2020 ambition**

Country	Summary
<b>BASIC</b>	Reiterated that the pre-2020 ambition must be addressed primarily through the implementation of the second commitment period of the <b>Kyoto Protocol</b> and urged <b>developed countries to take the lead</b> , in accordance with their <b>historical responsibilities</b> and as required by science
<b>China</b>	Reiterates that work under the Duran Platform to be guided by principles of equity, common but differentiated responsibilities ( <b>CBDR</b> ) and respective capabilities. Calls for developed countries to commit at least <b>25-40%</b> reduction by 2020 below 1990 levels. No new commitment for developing countries
<b>EU</b>	Supports that developed countries to collectively reduce emissions by <b>25-40%</b> below 1990 levels by 2020; calls for <b>15-30%</b> reduction by developing countries by 2020 below current emissions predictions. Reaffirmed its <b>conditional emission cuts of 30%</b> by 2020
<b>India</b>	Enhanced action based on the <b>CBDR</b> principle. Enhanced ambition in the 2012-2020 period to be <b>consistent with science</b>
<b>US</b>	Encourages parties to come forward to make 2020 emission reduction pledges, and highlighted the 20% of global emissions still not covered by pledges

Source: UNFCCC, EU Council, Joint Statement at 17<sup>th</sup> BASIC Ministerial Meeting on Climate Change

their chest. But this now needs to change – with a focus on building alliances outside of the formal UNFCCC process. In Table 2, we list ten possible ways of delivering carbon reductions as a co-benefit of wider economic and environmental reforms. These are drawn from a range of sources, such as the IEA’s ‘four for 2°C’ proposals (see [Climate football anyone?](#) 11 June 2013), along with Ecofys’ set of ideas to ‘wedge the gap’. We estimate that these measures could curb 6-8GtCO<sub>2</sub>e by 2020 – all driven by a wider rationale beyond just carbon. We believe that three ideas look specially promising:

### 1. Efficiency, Efficiency, Efficiency

Deploying cost-effective energy efficiency measures in buildings, industry and transport offers immense economic and energy security benefits along with the fastest way of cutting carbon. We argue that the annual Clean Energy Ministerial process should seize on this opportunity to deliver some real world outcomes and design practical ways of delivering components of the 1.5-2.0GtCO<sub>2</sub>e of potential at its 2014 and 2015 events.

### 2. End fossil perversity

The consensus on the need to end perverse subsidies that encourage fossil fuel consumption is almost unanimous at the international level: the G-20, the IEA, the IMF, the OECD and the World Bank are all calling for change. The key is to achieve ‘reform without riots’ by switching the subsidies to focus on the ‘double low’: providing affordable low-carbon access to energy for low-income groups. Here, we believe that the G-20 needs to show that it has some real muscle in this area and deliver quantitative cuts by its next meeting in 2014.

### 3. An OECD shadow price for carbon

It is relatively easy for organisations dominated by industrialised countries to focus on ending fossil fuel subsidies – because most of the subsidies are operated by emerging economy energy producers. The rich world also needs to demonstrate that they are serious about changing course – and putting a price on carbon. We know that the politics of carbon pricing in the real economy is often tough to tackle. But one way of steering government policy and sending a long-term signal to business, citizens and investors would be to ensure that across the OECD all governments deployed a ‘shadow carbon price’ in key policy decisions. The UK already has a real world floor price of GBP16/t (USD25) in 2013 which rises to GBP30/t (USD48) in 2020. In the USA, a “social cost of carbon” is used by the EPA and other federal agencies to estimate the climate impacts of rulemakings. Earlier this year, President Obama raised the SCC to USD40/t in 2015 (using a 3% discount rate and 2011 dollars); this rises to USD46/t in 2020. We believe that the introduction of a USD40/t shadow price in all government decisions across the OECD is feasible by 2015 and would send a clear market signal.

### Second step: post-2020 action

The core of the Durban agreement in 2010 was the establishment of negotiations to complete a new agreement in 2015 to take effect from 2020. In the process, this is the ADP1 Workstream, and covers carbon reduction (mitigation), along with adapting to climate impacts as well as the means of implementation (finance & technology) and MRV (monitoring, reporting and verification).

Table 2: Ten measures to boost pre-2020 ambition

Measures	What's the issue / driver?	Who's taking action?	2020 potential
<b>1. Boost energy efficiency</b>	Energy efficiency could be the largest contributor to global GHG reduction by 2020 by introducing energy performance standards for new heating and cooling equipment, lighting and appliance in buildings; more efficient industrial motors; and tighter fuel economy standards for transport.	China has proposed to reduce energy use per unit of GDP by at least 3.7% in 2013 In the EU, the new Energy Efficiency Directive entered into force in December 2012 and should yield 15% energy savings by 2020. The US has proposed to develop post-2018 fuel economy standards for heavy-duty vehicles.	Extra efficiency measures could reduce global energy emissions by 1.5-2GtCO <sub>2</sub> e (IEA/UNEP). Only a small group of nations would need to collaborate to drive up standards for building, industrial and transport technologies.
<b>2. End new sub-critical coal power plants</b>	Global coal demand needs to peak by 2020 in a 2°C scenario according to the IEA. The most effective place to start is through the prohibition of new sub-critical coal power plants and the retirement of old plants that have repaid their costs.	Internationally, the World Bank and the European Investment Bank have launched strict new energy policies that rule out financing for sub-critical coal. Emission performance standards are also being introduced in the UK and have been proposed by the US EPA.	Emissions could be reduced by 640MtCO <sub>2</sub> e with no new sub-critical plants and limited use of existing ones (IEA). China would account for 30% of emission savings, followed by the USA and India.
<b>3. Phase out of fossil fuel subsidies</b>	Fossil-fuel subsidies of cUSD525bn encourage excess emissions: 15% of global emissions receive a USD100/t subsidy, whereas only 8% face a carbon price.	In 2009, the G20 committed to phase out 'inefficient' fossil fuel subsidies over the medium term; this year's G20 summit announced 'voluntary peer review' of this commitment. The IEA, IMF, OECD and the World Bank have also committed their support.	A partial phase-out would cut emissions by 360MtCO <sub>2</sub> (IEA); this could rise to 2GtCO <sub>2</sub> e (UNEP).
<b>4. Cut Oil &amp; Gas flaring</b>	Around 1.1GtCO <sub>2</sub> e of methane was released by upstream oil & gas in 2010, c3.7% of energy-related emissions.	Regulations exist in many countries to control flaring, but these are not effectively enforced.	Reducing flaring by half would cut GHGs by 570MtCO <sub>2</sub> e in Russia, the Middle East, the US and Africa (IEA). No clear estimate globally of the co-benefit potential.
<b>5. Curb air pollution</b>	Fossil-fuels in power generation, industry and transport are also a major source of local air pollution: cutting smog will also usually curb carbon emissions.	The IARC has recently classified outdoor air pollution and particulate matter as carcinogenic to humans. Domestically, China's Air Pollution Prevention Plan will cap the use of coal in key regions and accelerate the closure of obsolete plant.	
<b>6. Halve Deforestation</b>	Deforestation accounts for 16% of global GHGs, and reducing emissions from deforestation and degradation (REDD+) offers considerable pre-2020 potential.	Regional carbon markets in California, Japan and Brazil could provide offset demand, alongside climate finance from major donors. Domestic programmes, such as in Brazil, have achieved substantial progress through improved enforcement via satellite technology.	Halving global deforestation has the potential to achieve emission reduction benefits of 1.8GtCO <sub>2</sub> e (Ecofys).
<b>7. Make planes and ships pay their way</b>	Aviation and shipping account for 5.3% of global GHGs and are increasing rapidly	The ICAO agreed for a global market-based scheme to reduce aviation GHG emissions by 2016, for implementation by 2020.	Potential emission savings from global aviation with a fuel efficiency target of 2% p.a. is 56MtCO <sub>2</sub> (HSBC).
<b>8. Deal with black carbon</b>	Black carbon is increasingly regarded as the 2 <sup>nd</sup> most damaging GHG after CO <sub>2</sub> . Global non-CO <sub>2</sub> emissions are expected to increase >70% over the next two decades.	The Climate and Clean Air Coalition working with cities to reduce black carbon and other short-lived air pollutants. The US-China Climate Change Working Group (CCWG) agreed in July to develop control measures for black carbon emissions	Reducing black carbon emissions could reduce radiative forcing equivalent to a cut in GHGs of 1GtCO <sub>2</sub> e (Ecofys).
<b>9. Eliminate HFCs</b>	HFC use has grown rapidly as replacements for ozone-depleting substances (ODS), but they have a high Global Warming Potential. HFC emissions are projected to rise to 3.5 to 8.8 GtCO <sub>2</sub> e in 2050.	On the back of US-China agreement in June to tackle HFCs bilaterally, the G-20 agreed to amend the Montreal Protocol to curb HFCs in September 2013. However, India has opposed the use of the Montreal Protocol to control HFCs arguing the UNFCCC is the right forum.	Gradual phase out of HFCs could reduce emissions by 0.3GtCO <sub>2</sub> e (Ecofys).
<b>10. Set a shadow carbon price across the OECD</b>	OECD governments could agree to apply a shadow carbon price in all government decision-making, similar to the US EPA's carbon price used in rulemakings.	Beyond the volatile carbon markets, the UK has set a carbon floor price starting at GBP16 (cUSD25) in 2013, rising to GBP30 (cUSD48). The US EPA's social cost of carbon starts at USD40 in 2015 (using a 3% discount rate and 2011 dollars); this rises to USD46 in 2020.	No estimate yet of the impact of an OECD-wide shadow price.

Note: \*Nordic countries include Denmark, Finland, Iceland, Norway, and Sweden. Source: German Watch Short-term Mitigation ambition pre-2020-July 2013, UNEP, The emissions gap report, November 2013; IEA, Redrawing the Energy Map, June 2013, Ecofys Closing the 2020 emissions gap, August 2012, EPA, HSBC

Historically, the world has oriented around a goal of halving emissions by 2050. In the wake of the recent IPCC report with its punishing carbon budget, the OECD has called for a ‘pathway to achieve zero net greenhouse emissions globally by the second half of the century’. What Warsaw needs to do is agree on the formula that will share out this challenge across the countries of the world. The rapid growth in emissions from emerging economies since 1990 means that today developing and developed countries are responsible for roughly equal shares of cumulative GHGs since the Industrial Revolution. To this, must be included the reality of climate impacts so that any long-term programme has to expect a disrupted world.

Once again, governments have made their initial submissions, which we set out in Table 3. And once again, there’s very little movement from traditional negotiating positions.

### The ‘ABCDE’ of a 2015 agreement

To make progress, we believe that five principles need to be in the minds of all governments as they negotiate the deal and draw up the pledges they will make over the next two years:

(i) **Adequacy:** Governments must be clear that what they are putting forward individually will reasonably add up to the global goal of staying below 2°C goal.

(ii) **Bravery:** Since no government is doing enough, political leaders will need to inject some bravery into the discussions, not just submitting the lowest offers.

(iii) **Comparability:** It’s also crucial that government submissions use agreed accounting frameworks, are transparent and quantifiable;

(iv) **Dynamism:** The agreement will be bookended with commitments for 2020-2025 and also for 2050. But it will also need to have a process for successive tightening of commitments (see IDDRI, *Possible Elements of the 2015 Legal Regime*, 2013)

(v) **Equity:** The 2015 agreement is applicable to all. But that does not mean that the old chestnut of CBDR can be wished away. Countries need to specify what equity principles they are applying so that their effort is adequate and fair.

Table 3: Negotiating positions of key countries at Warsaw on increasing post-2020 ambition

Country	Summary
<b>BASIC</b>	Emphasized that the structure and design of the 2015 agreement should be in accordance with the principles of equity and <b>common but differentiated responsibilities</b>
<b>China</b>	Proposes that the agreement on the post-2020, enhanced action should be in accordance with the principle of <b>common but differentiated responsibilities (CBDR)</b> <b>Developed countries to undertake ambitious, legally binding and economy-wide emission reduction targets</b> in accordance with their historical responsibilities and capabilities and <b>as demanded by science</b> ; commitments to be mainly implemented through domestic actions. Practical actions <b>on adaptation post 2020</b> shall be further enhanced building on existing institutional arrangements
<b>EU</b>	<b>Reaffirms its objective for developed countries to collectively reduce emissions by 80-95% by 2050</b> compared to 1990 Calls for the 2015 agreement to be legally binding based on global participation <b>and informed by science</b> Calls for all parties to formulate ambitious mitigation commitments for the 2015 agreement, including <b>a timetable to prepare their proposed commitments in 2014</b>
<b>India</b>	Calls for immediate ratification by Annex 1 parties to CP2 of the Kyoto Protocol (KP); increase their <b>mitigation targets under KP by 2014</b> <b>Annex I Parties must continue to take emission reduction objectives</b> , while non-Annex I Parties will take nationally appropriate mitigation actions Calls for implementation of institutional mechanism for ‘ <b>loss and damage</b> ’ as agreed in the Cancun Adaptation Framework and at Doha
<b>Japan</b>	Takes into account the G8 proposal to achieve at least 50% emission reduction by 2050; <b>aggregate emission reduction by developed countries by 80% or more by 2050</b> compared to 1990/ more recent years. <b>Focus on Nationally-determined commitments</b> (emission reduction target and all possible measures) under internationally common accounting rules
<b>US</b>	<b>Urges nations to justify global climate treaty commitments.</b> Specific commitments by the parties should be <b>nationally determined</b> . Calls for integration of <b>adaptation</b> into national planning and development

Source: UNFCCC, EU Council, Joint Statement at 17th BASIC Ministerial Meeting on Climate Change

# Finding the finance

- ▶ USD6trn in investment is required annually to drive the low-carbon economy, an additional USD1trn to business as usual
- ▶ Public finance can help to reduce risk and increase returns; the GCF needs to 'get cash fast' to make its mark
- ▶ Policy reforms of financial systems will also be needed to mobilise private capital at scale

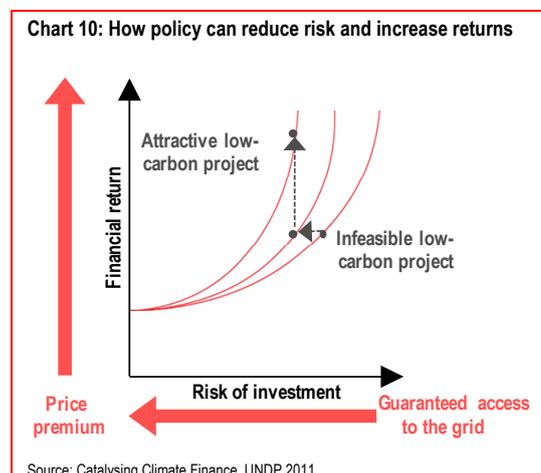
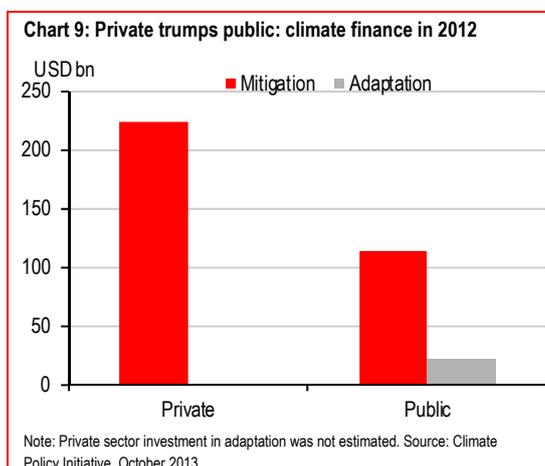
## Follow up funding needed

UN talks on climate finance have a distinctly split personality. At one moment, the discussion focuses on the aggregate level of investment required from all sources to deliver a low-carbon, climate resilient economy. Then, the discussion quickly subsides into a focus on 'climate aid': flows of public funds from North to South.

The latest estimates from the World Economic Forum suggest that USD6trn per annum is required to invest in the low-carbon economy through to 2030. This means that an additional

USD1trn in 'green' capital will need to be found: this investment will provide net positive returns (notably in terms of energy savings). But extra upfront financing is nonetheless required. At present, according to the Climate Policy Initiative (CPI), global climate finance amounted to just USD359bn in 2012, a decline from USD364bn in 2011. Private investment accounted for 62% of this and the vast bulk of funds (95%) went to low-carbon allocations. So far, however, the public sector is totally dominant in adaptation (Chart 9).

As for 'climate aid', the industrialised countries have more than met the Copenhagen pledge to



deliver USD30bn in ‘fast start finance’ to developing countries between 2010 and 2012. Overall FSF commitments have been USD36bn, although this is not ‘new and additional’ to traditional aid flows.

The next challenge is to deliver USD100bn in climate finance flows to developing countries per year by 2020. But there is no agreement on how the split between public and private should be made, or indeed what counts as climate finance. The absence of follow-on public finance commitments is also striking with only a handful of EU countries making voluntary contributions of EUR5.5bn (USD7.6bn) at Doha last year.

At Warsaw, developed countries will need to specify the ‘follow up finance’ they will provide for the next triennium of 2013-2015. And as part of the pledging process in 2014 countries will need to clarify the ways in which ‘climate aid’ will be provided beyond 2015. A particular focus will be placed on public funding for **adaptation** – an area where private flows are more difficult to mobilise. South Africa, for example, has stated that it is expecting a total of USD5-7bn per year by 2015 in adaptation flows to developing countries, rising to USD28-67bn by 2030.

## How to mobilise private cash

Increasing flows of finance to developing countries is essential not just for the politics of a deal, but also to accelerate the low-carbon transition and protect vulnerable communities. It is striking that 90% of total finance flows into developing countries still come from public sources, according to the CPI.

No absolute shortage of capital exists, but the risk: reward ratio is not yet strategically compelling for private sector institutions. Over time, development banks and policymakers have developed a strong body of experience on how public funds can be used to reduce the risks facing private investors and/or increase their returns. Chart 10 shows schematically how energy policy instruments can serve this function (for example, through the use of a feed-in tariff). The left hand column of Table 4 also profiles a range of instruments that can perform a similar function. On the right hand side of the table are the range of financial system issues which investors and financiers have found create barriers to investment. Increasingly, institutions are recognising that climate policy and financial

Table 4: How to use policy measure to mobilize private climate finance

Transaction Level: reducing risk/increase capital at the project level	System level: changing the structural incentives in favour of low-carbon
<p><b>Co-investment:</b> The core function of development banks is to provide debt and equity, which helps ‘crowd in’ private capital. For example, concessional funds from international financial institutions were crucial to the successful deployment of the first concentrated solar power (CSP) plants in Morocco.</p> <p><b>Credit guarantees:</b> Export finance can be deployed to reduce the risks of investors in clean energy. Denmark’s EKF guaranteed the position of a Danish pension fund for the Jädraås onshore wind project in Sweden.</p> <p><b>First loss arrangements:</b> This enables public finance to take a higher risk slice and leverage in private capital. KfW’s: Global Climate Partnership Fund (GCPF) has used this model to attract institutional investors.</p> <p><b>Credit enhancement:</b> Public funds can be used to enhance the credit of a bond to attract investors. The Europe 2020 Bond Initiative uses EU funds deployed by the EIB to improve the credit rating of infrastructure.</p> <p><b>Credit lines:</b> Development banks extend loans to financial intermediaries, which then finance sub-projects. The EBRD has launched a USD20m credit line supporting energy efficiency improvements in households and enterprises.</p> <p><b>Policy risk insurance:</b> Policy risk is a major barrier to investment. The first ‘climate policy’ risk insurance contract for a REDD project was provided by the OPIC to Terra Global Capital in Cambodia.</p> <p><b>Pipeline priming</b> Public finance can help to fund the upfront costs of project development. The: US-Africa Clean Energy Facility provides project preparation assistance of USD20m.</p>	<p><b>Market behaviour:</b> Short-termism, for example, represents a critical barrier to incorporating climate and sustainability factors. Greater transparency about long-term performance, improved governance, better contract design and tax / subsidy measures can help.</p> <p><b>Responsibilities:</b> Fiduciary duty is often interpreted in ways that stifle integration of climate risks. Baker &amp; McKenzie has found that trustees’ understanding of climate risks was advanced, but action taken to manage climate risk had been very limited.</p> <p><b>Capital allocation:</b> A low-carbon economy is capital intensive – and there are concerns that Basel III will cut the capacity of banks to provide long-term credit and Solvency II will hinder insurance company allocations.</p> <p><b>Incentives:</b> Fiscal subsidies are often provided for savings, pensions and investment without regard to the environmental or long-term impact. To receive fiscal subsidy, funds should demonstrate substantially better than market climate performance.</p> <p><b>Risk:</b> Standard measures of transaction, institutional and market level risk routinely ignore environmental or climate factors. For example, stranded asset risks are not incorporated into equity or fixed income pricing.</p> <p><b>Information:</b> In spite of significant improvements, most companies do not disclose even basic climate information. Few financial institutions report on their Scope 3 ‘financed emissions’.</p> <p><b>Innovation:</b> Positive innovation in capital markets is often constrained by small but significant regulatory barriers (eg development of a green bond securitisation market). See <i>Bonds &amp; Climate Change: State of the Market 2013</i>, June 2013.</p>

Source: Climate Policy Initiative, HSBC

needs to become compatible – one of the key ‘spokes’ to the 2015 agreement.

## The GCF - Get Cash Fast

After two years of design, the Green Climate Fund (GCF) is finally close to opening for business. It will start its ‘resource mobilisation process in mid-2014. Its success in fund-raising will be a critical barometer for the success of the talks. Currently, it has raised just 0.049% of the USD100bn 2020 annual target.

# The Climate Countdown

- ▶ 2014 will be the year of the initial offers (for most) – and 2015 the year of review, refinement and resolution
- ▶ Politics in various jurisdictions will inevitably disrupt this timeline, positively and negatively
- ▶ Two wildcards could also impact proceedings: ‘loss and damage’ and bilateral relations between China and the USA

## Seven steps to an agreement

### **Step 1: Agreeing the 'rules of the game' (November 2013)**

The Warsaw (COP 19) must agree the process by which countries make their offers of carbon reductions and, where relevant, cash. This needs to include guidance on what is to be included so that offers converge to meet the 2°C goal in a principled and practical manner. Offers will need to be comparable, and the process of review will need to be agreed.

### **Step 2: Initial offers made by climate leaders (run-up to Lima 2014 Summit)**

Ban-ki Moon has urged world leaders to come to the UNSG's Climate Summit in September 2014 with their pledges. We can expect ‘climate leaders’ - potentially the EU and key middle income countries such as Colombia, Mexico and South Korea - to make their initial offers in advance so as to raise the stakes of overall ambition. Countries that are part of Kyoto2 could make their pledges as upward revisions to existing protocol commitments. The GCF will also need to receive a credible – USD5bn? – first multi-year commitment. Cities, business and finance will

also be expected to make their own offers. After the Summit, further pledges will need to be made, taking advantage of the IPCC's Synthesis report in October to align offers with the science. The key is that most countries have made their offers before the Lima CoP in December.

### **Step 3: Draft elements for the global agreement (December 2014)**

At the Lima CoP, the draft negotiating text needs to be pulled together into a manageable length, and further pressure put on countries that are holding out in terms of their offers.

### **Step 4: International review (first half of 2015)**

The goal of a review process should be to provide all countries with clear conclusions about overall adequacy and fairness of the offer, and analysis of the distribution of effort among countries. For the USA, their initial offer will be presented as a ‘best effort’, with consultation having limited impact. For South Africa, the outcome of the review will be to ‘encourage and compel’ governments to adjust their offers. This process will be guided by the **Periodic Review**, which is tasked with evaluating the 2°C target during 2013-2015.

#### **Step 5: Draft legal text (by May 2015)**

The draft legal text has to be ready six months in advance of the Paris CoP. It needs to be clear and concise, with scope for side-agreements to be added and final numbers on the commitment to be inserted in Paris.

#### **Step 6: Revised offers (second half of 2015)**

Revised offers are likely to be submitted by countries all the way through to the COP 21 negotiations in Paris.

#### **Step 7: The Paris Agreement (December 2015)**

This is where all the strands should converge: a framework agreement (the ‘hub’), with separate decisions on key supporting issues (the ‘spokes’) and a consolidated set of commitments on carbon and cash.

Table 5 on page 17 provides more detail on the timetable on the road to Paris.

### **Expect political turbulence**

This tight timetable will inevitably be subject to major political forces across the world, which could delay or disrupt the process – or galvanise it with new energy. Key political milestones include elections in two major industrialised country blocs and three of the four BASIC countries in 2014.

#### **EU: Parliament elections**

EU parliament elections will be held towards the end of May 2014. Any EU offer needs to be agreed before the elections in order to send a strong signal of the bloc’s ambition for additional pre-2020 efforts, its post-2030 target and its contribution to the financial package, via climate finance and carbon markets. Environment ministers from 13 EU members including the UK, Germany, France, Italy and Spain have proposed that the EU should put an ambitious emissions reduction offer on the table during the September 2014 UN Climate Summit.

#### **India: General elections**

The general parliamentary elections will be held in May 2014. Coalition building thereafter will likely distract political attention. India could still submit its proposal for enhanced ambition by the Lima negotiations in December.

#### **South Africa: General elections**

Similarly, the next South African general election will be held between April–July 2014 to elect a new National Assembly, as well as new provincial legislatures in each province. Thus it is unlikely that South Africa will present its proposal much before COP 20 in December 2014.

#### **Brazil: General elections**

General elections will be held in Brazil in October 2014 to elect a president and a National Congress. This is unlikely to have a major impact on the direction of climate policy, but could certainly delay submission.

#### **US: Mid-term elections**

Mid-term elections in the US will be held in November 2014 where the whole House of Representatives and a third of the Senate will be chosen. As a result, it is highly unlikely that US will submit its pledges before the end of 2014. Any delay from the US could also discourage other major economies from coming forward, notably those in the BASIC group.

### **Wildcards**

In addition to these scheduled political events, we see two potential wildcards in the talks.

#### **Loss & Damage**

A new addition to the climate agenda is ‘loss and damage’ – effectively compensation for climate disruption in developing countries. Last year in Doha, the Alliance of Small Island States (AOSIS) and Least Developed countries (LCD) demanded the creation of an “international mechanism on loss and damage”. This was

opposed by richer nations, but a compromise was agreed to establish institutional arrangements in Warsaw. The details on exactly how developing countries could seek redress were buried under a “range of approaches, methods and tools”.

Not surprisingly, there is a considerable gap between definitions of what constitutes loss and damage, and how restitution can be made from the perceived instigators of climate change (developed countries) and those that suffer the impacts (developing countries). Developed countries fear unlimited legal liability and developing countries fear unbearable climate costs. If AOSIS and the Least Developed Countries – the conscience of the COP – feel that they are not getting satisfaction then this could sour the negotiations. Equally, if the USA feels it is being pushed into a legal corner then it could divert much needed diplomatic attention from the overall agreement.

### A China-US Deal on Coal?

As discussed earlier, China and the USA are the two ‘carbon elephants’ and are starting to work in a structured way on climate co-operation. The US-China Climate Change Working Group (CCWG) was formed in April 2013 and mentions key initiatives to tackle climate change which include black carbon (see [Super pollutants in China & the US](#), 23 July 2013). The CCWG was also tasked with managing each country’s HFCs.

We believe that these so far modest steps could provide a platform for a more transformative deal on coal. This could involve many of the elements we highlighted in our 10 ideas for boosting pre-2020 ambition, such as agreements by the two countries to phase out state subsidies for coal production and use, and cutting the use of sub-critical coal through coordinated introduction of pollution standards. In addition, substantial funding could be mobilised for a serious joint technology initiative on CCS, as well as cooperation on natural gas development. A bilateral deal of this type could help to spur a breakthrough at the multilateral level by showing that there is a practical pathway out of high carbon dependence.

Table 5: Timeline of selected key climate events through to 2015

Year	Milestone	Detail/ Outcome
<b>2013</b>		
12 Nov	IEA, World Energy Outlook	World Energy Outlook 2013 will incorporate the latest climate and energy projections through to 2035
11-22 Nov	UNFCCC (CoP19)	COP 19 in Warsaw will need to agree the rules of the game for 2015
13 Dec	EU, Council Meeting	The Council meeting might consider approval of the carbon market back-loading plan
2013 end	EU, 2030 targets	EU Communication on 2030 climate and energy targets
<b>2014</b>		
1 Jan	EU, Energy Efficiency Directive (EED)	Requirement that 3% of floor area of central government buildings to be renovated takes effect
1 Jan	California Cap and Trade,	California's cap and trade programme to be linked with that of Quebec
22-25 Jan	World Economic Forum, Davos	Davos will have one day dedicated to climate change
4-6 Feb	C40 Summit	The C40 Mayors Climate Summit to be held in Johannesburg, South Africa
March	EU, 2030 targets	EU Council to agree the 2030 climate and energy policies
25-29 March	International, IPCC AR5	Working Group II to release its findings on climate impacts, adaptation and vulnerability
7-11 April	International, IPCC AR5	Working Group III to release its report on strategies to drive low-carbon mitigation
11-13 April	World Bank, IMF Spring Meeting	2014 Spring Meeting of the International Monetary Fund and the World Bank Group at Washington DC, USA
30 Apr	EU, Energy Efficiency Directive (EED)	Member States to submit their National Energy Efficiency Action Plans; together with long-term building strategy
Apr –Jul	South Africa, General Elections	The general election will elect a new National Assembly and new provincial legislatures in each province
22-25 May	EU, Parliament Elections	The election will be crucial to determine whether the populist pushback vs green measures will intensify
May	India, General Elections	The general elections to shape future course of social, political and environmental reforms
4-5 June	G8 Summit	The 40th G8 summit to be held in Russia
June	EU, Energy Efficiency Directive (EED)	EU Commission will assess whether EU is on track to achieve its target energy savings
June	US, GHG standards	The US Environment Protection Agency (EPA) to propose GHG standards for existing power plants
4-15 Jun	UNFCCC	First sessional meeting in 2014 on global climate negotiations
September	UN Climate Summit	UN heads of State summit will meet in New York to forge to mobilize political will for 2015 global deal
October	Brazil, General Elections	General elections will be held in Brazil in October 2014 to elect a president and a National Congress
10-12 Oct	World Bank, IMF Annual Meeting	2014 Annual Meeting of the International Monetary Fund and the World Bank Group at Washington DC, USA
27-31 Oct	International, IPCC AR5	The final Synthesis Report of AR5 will be released in Copenhagen, Denmark
November	US, mid-term elections	Mid-term elections will be held: the whole House of Representatives, and a third of the Senate will be chosen
15-16 Nov	G20 Summit	The next G20 Summit will take place in Australia focussing on global economy, financial regulation, poverty reduction and sustainable development
3-14 Dec	UNFCCC (CoP20)	The annual UN Climate Change conference will take place in Lima
<b>2015</b>		
Jan	South Korea	ETS planned to commence on 1 Jan 2015
Jan	South Africa, Carbon Tax	South Africa plans to tax carbon emissions, but with some exemptions to protect industry and jobs
7 May	UK, General Elections	The general election will elect 56th parliament of the UK
May	International, UNFCCC	Draft negotiating text for 2015 global climate deal is expected
3-14 Jun	International, UNFCCC	First sessional meeting in 2015 on global climate negotiations
July	Mexico, General Elections	Legislative elections are scheduled to be held in Mexico in July 2015
19 Oct	Canada, General Elections	The 42nd Canadian federal election is scheduled
October	Poland, General Elections	Legislative elections will be held by October 2015
October	G20 Summit	The 2015 G20 Summit will take place in Turkey
2-13 Dec	International, UNFCCC (CoP 21)	The annual UN Climate Change conference framing the global climate agreement will take place in Paris, France

Source: HSBC

# Disclosure appendix

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