



E3G

# 30 Percent and Beyond

Strengthening EU Leadership on  
Climate Change

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### 30 Percent and Beyond: Post-Copenhagen Update

Since 2007 EU strategy has been to use its conditional 30 percent emission reduction offer to prompt more ambitious commitments from other countries, thereby securing a legally binding international agreement consistent with limiting global warming below 2 degrees Celsius. Due to internal divisions the EU did not move to 30 percent before or during the UN Climate Summit in Copenhagen and had to settle for a non-binding “Copenhagen Accord” that fell well short of Europe’s objectives. In associating itself with this Accord, the EU has since confirmed that it will stick to its pre-Copenhagen position, i.e. a unilateral 20 percent reduction in emissions below 1990 levels by 2020, moving to 30 percent under the right conditions.

Despite the setback at Copenhagen, the case for 30 percent remains strong. This briefing shows that as a result of the recession the cost of achieving 30 percent now is €104bn less than 20 percent was expected to be when adopted in 2008. The 2009 IEA World Energy Outlook suggests that the EU could now meet a 20 percent target without any domestic abatement taking place, undermining the integrity of the ETS.<sup>1</sup> A higher target, in contrast, would create jobs in growing industries – the European Commission estimates that the EU renewables target alone will lead to 2.8 million new jobs and a net increase in GDP<sup>2</sup> – and deliver billions of dollars of savings in oil and gas import bills and air pollution costs.<sup>3</sup>

Many Europeans are still pushing for greater ambition. UK Energy and Climate Change Secretary Ed Miliband has made clear that the UK will continue to press for 30 percent in order to help secure a legally binding international agreement by the end of 2010.<sup>4</sup> The Netherlands has also backed a more ambitious target, and countries such as Belgium, France and Spain are sympathetic. Germany recently reaffirmed its commitment to raise its national target from 30 to 40 percent.<sup>5</sup> However these countries face strong opposition from others such as Poland and Italy. Overcoming these internal divisions is essential if Europe is serious about avoiding the worst impacts of climate change and remaining a leader in the clean energy industries of the future.

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<sup>1</sup> IEA (2009), ‘World Energy Outlook 2009’.

<sup>2</sup> European Commission (2009), ‘The impact of renewable energy policy on economic growth and employment in the European Union’. Financed by the European Commission, DG Energy and Transport, under TREN/D1/474/2006.

<sup>3</sup> IEA (2009), World Energy Outlook 2009, Early Excerpt.

<sup>4</sup> Tom Young, ‘Miliband: UK will push EU to raise emissions target to 30 per cent’, BusinessGreen, 6 January 2010.

<sup>5</sup> Erik Kirschbaum, ‘Germany sticking to ambitious CO2 target: advisor’, STV 11 January 2010.

# 30 Percent and Beyond: Strengthening EU Leadership on Climate Change

**E3G<sup>6</sup> Briefing Note, Updated January 2010**

## Summary

The European Union (EU) is committed to reducing its emissions by 20 percent below 1990 levels by 2020 as part of the Climate Package, adopted in December 2008. There is no economic or technical obstacle to raising this target to 30 percent. For almost two decades Europe has been at the forefront of the global effort to stop climate change and it must not allow momentum to slow at this critical hour. The EU should therefore make a credible strategic declaration of intent to move unilaterally to a 30 percent target, while also tabling a conditional offer of a 40 percent reduction in the event of a fair, ambitious and binding international agreement.

The world has changed since the 20-30 percent negotiating position was adopted in 2007. The recession has led to a significant fall in global emissions – provisional data shows that emissions in the EU are already 10.7 percent below 1990 levels, making the 20 percent target easier to meet.<sup>7</sup> Circumstances are similar in the US, with carbon emissions from fossil fuels having dropped 9 percent since 2007.<sup>8</sup> This is not just a short-term phenomenon: mainstream economic forecasts concur that output is unlikely to return to levels seen in the recent past even after the crisis is over.<sup>9</sup> There has also been an increase in momentum towards stronger climate policies in many major economies, with new and ambitious conditional targets offered by Australia, Japan and Norway and important announcements by developing countries such as Brazil, China,

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<sup>6</sup> E3G is a European non-profit organisation which works in the public interest to accelerate the transition to sustainable development: [www.e3g.org](http://www.e3g.org).

<sup>7</sup> European Environment Agency (EEA): <http://www.eea.europa.eu/highlights/new-estimates-confirm-the-declining-trend-in-eu-greenhouse-gas-emissions>

<sup>8</sup> Brown, Lester, 'US headed for massive decline in carbon emissions, grist, 14 October 2009. Available at: <http://www.grist.org/article/u.s.-headed-for-massive-decline-in-carbon-emissions/>

<sup>9</sup> OECD (2009), 'Economic Outlook 85', 'Chapter 4: Beyond the Crisis: Medium Term Challenges Relating to Potential Output, Unemployment and Fiscal Positions'

India, Indonesia, Mexico, South Africa and South Korea. The scientific community is more united than ever in its global call for urgent action.

A 30 percent or higher target is in the EU's strategic interest. Domestically it would help drive through the transformational change needed to create a low carbon economy. This will lead to higher employment and growth: the European Commission estimates that the 20 percent renewables target alone will lead to 2.8 million new jobs and a net increase in GDP<sup>10</sup>; lower oil and gas import bills and air pollution costs could add up to savings of close to €70bn in 2020.<sup>11</sup> Internationally, greater ambition would bolster Europe's authority in pressing for stronger action from other major economies and help create the political space for President Obama to win his domestic battles on climate legislation.

The projected fall in the carbon price as a result of the recession implies reduced auction revenue for governments from 2013 to 2020. In its impact assessment for the Climate Package the European Commission predicted that a carbon price of €39/tonne and 50 percent auctioning would result in auction revenue of around €38bn by 2020. Many forecasts now put the price in 2020 at closer to €20/tonne, meaning revenues would be cut in half.<sup>12</sup> A lower carbon price would also mean reduced finance flows to developing countries through the carbon market. The World Bank estimates developing countries will need around €320bn of annual investment to address climate change.<sup>13</sup> The sum of climate-related public sector commitments proposed by EU leaders is €22-50bn, leaving a shortfall of at least €270bn.<sup>14</sup> At a time when developing countries are investing unprecedented sums in infrastructure, this would be a missed opportunity to help set them on a low carbon growth path.

Greater ambition is affordable. Given the recession and the potential to use surplus allowances from Phase 2 of the Emissions Trading Scheme (ETS), the cost of achieving a 30 percent target is now estimated to be €104bn cheaper than the original 20 percent reduction was expected to be when first adopted (see Figure 1 below).<sup>15</sup> The EU could now meet its current 20% target without

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<sup>10</sup> European Commission (2009), 'The impact of renewable energy policy on economic growth and employment in the European Union'. Financed by the European Commission, DG Energy and Transport, under TREN/D1/474/2006.

<sup>11</sup> IEA (2009), World Energy Outlook 2009, Early Excerpt.

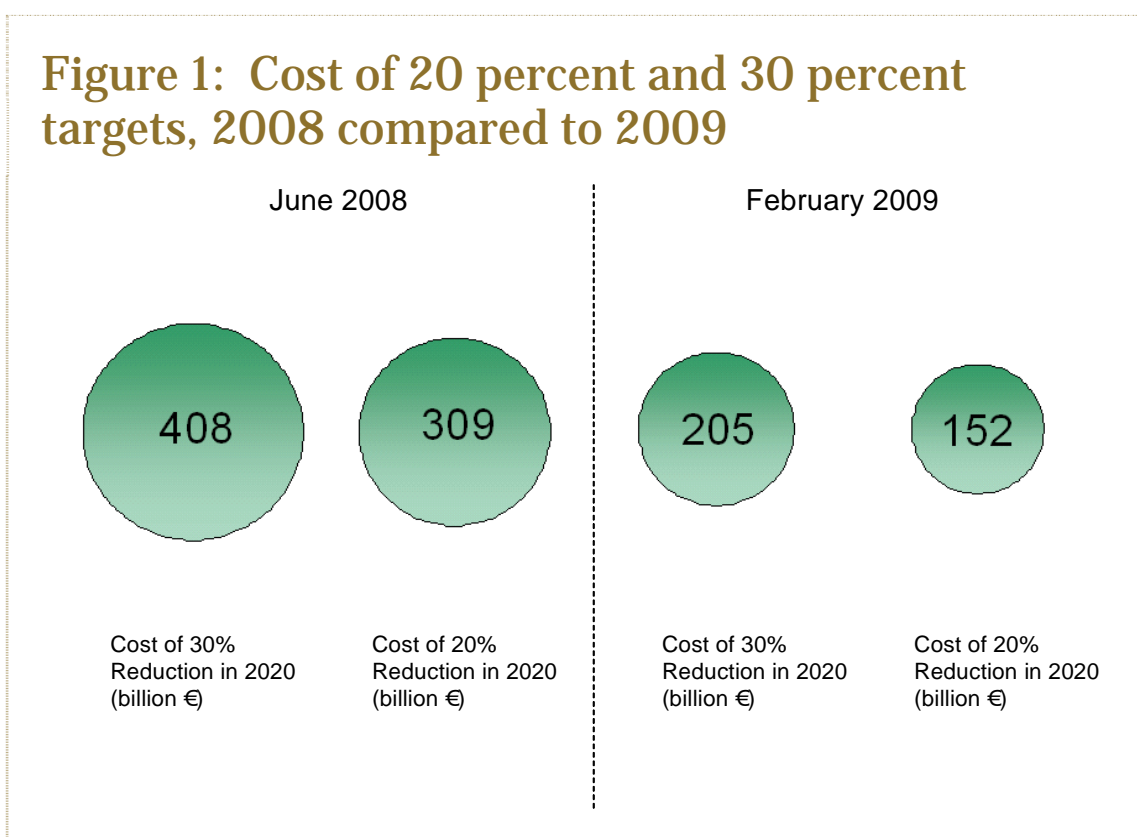
<sup>12</sup> The UK Committee on Climate Change has, for example, lowered its carbon price estimate for 2020 from €56/tonne to €22/tonne: <http://www.theccc.org.uk/topics/economics-and-society/impacts-of-the-recession>

<sup>13</sup> World Bank (2009) 'World Development Report: Development and Climate Change.'

<sup>14</sup> Ibid.

<sup>15</sup> ETS S.O.S: Why the flagship 'EU Emissions Trading Policy' needs rescuing, Sandbag, July 2009. And New Energy Finance.

any additional domestic abatement taking place, undermining the integrity of the ETS.<sup>16</sup> A synthesis of five recent studies shows that the EU could meet a 30 percent target while adding to economic growth and creating new jobs, or with minimal impact on GDP. For example, the International Institute for Applied Systems Analysis (IIASA) finds that the EU could meet 30 percent at a cost of 0.13-0.17 percent of GDP even without the use of offsets.<sup>17</sup> Studies have reached similar conclusions at the Member State level. Germany, for example, could reach a 40 percent reduction by 2020 at a cost of approximately 0.6 percent of GDP.<sup>18</sup>



Greater ambition is unlikely to damage EU competitiveness. Only a few industrial sub-sectors of the economy, accounting for between 1 and 2 percent of total GDP would face significant cost increases as a result of a higher carbon

<sup>16</sup> IEA (2009), 'World Energy Outlook 2009'.

<sup>17</sup> International Institute for Applied Systems Analysis (2009), 'Analysis of the Proposals for GHG Reductions in 2020 Made by UNFCCC Annex I Countries By Mid-August 2009', Laxenburg, Austria.

<sup>18</sup> WWF (2009), 'Blueprint Germany: A strategy for a climate safe 2050', October 2009.

price.<sup>19</sup> Under the Climate Package, the most at-risk sectors could benefit from up to 100 percent free distribution of allowances and are likely to be eligible for state aid. Heavy industry has been a net seller of allowances during the initial phases of the ETS and could see additional windfall profits of up to €5.4bn by the end of Phase 2.<sup>20</sup> Recent evidence suggests that a carbon constraint will actually lead to increased demand for heavy materials and that heavy industries, including steel, cement, aluminium and glass, can prosper if they adapt early to the low carbon economy.<sup>21</sup> Revenues from companies providing low carbon goods, products and services rose 75 percent in 2008 and have already reached USD 530bn, exceeding the aerospace and defence sectors.<sup>22</sup> To be competitive in the future Europe will need to move quickly to capture these new markets.

How Europe achieves greater reductions is as important as announcing the more ambitious target itself. Relying too heavily on the use of international offsets will not deliver transformational change. Member States should focus on immediate, negative cost reductions from efficiency improvements by, for example, making national energy efficiency targets binding and adopting stronger efficiency standards for buildings and appliances. The power sector will be critical: the EU should ramp up investment in smart grids, renewables and other low carbon infrastructure. Finally, as transport accounts for a rapidly growing share of total emissions the EU can and should set more stringent fuel efficiency standards and provide government support for R&D programs into greener vehicles, advanced engine technologies, hybridisation and electric cars, high-speed rail networks and other clean technology public transportation systems.

Moving to 30 percent or beyond is a powerful tool at the EU's disposal for both catalyzing domestic change and sustaining global momentum: it is affordable and unlikely to damage European competitiveness; it has co-benefits including reducing Europe's vulnerability to higher oil and carbon prices; and it will put the EU on a path towards a secure, low carbon economy fuelled by new clean energy industries that provide good jobs for EU citizens.

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<sup>19</sup> 'Competitive distortions and leakage in a world of different carbon prices: Trade, competitiveness and employment challenges when meeting the post-2012 climate commitments in the European Union', European Parliament, Policy Department, Economic and Scientific Policy. IP/A/CLIM/ST/2008-03 07 08 & 14.

<sup>20</sup> Sandbag (2009), 'ETS S.O.S.: Why the flagship 'EU Emissions Trading Policy' needs rescuing', July 2009.

<sup>21</sup> 'Scenarios for transition towards a low-carbon world in 2050: What's at stake for heavy industries?', *Entreprises pour l'Environnement & International Institute for Sustainable Development and International Relations (iDDRI)*, May 2009.

<sup>22</sup> de Lima, J. & Sumon, V. Climate Change – September annual index review. HSBC. 14 September 2009.

## Section 1: The EU has yet to agree on a credible roadmap to a 30 percent emissions reduction target

The EU has long recognised climate change as a threat to global security and economic prosperity. Along with other members of the G8 and Major Economies Forum (MEF), as well as with the wider range of countries that have associated themselves with the Copenhagen Accord, the EU is committed to limiting global temperature rise to 2°C by rapidly decreasing the release of man made greenhouse gases into the atmosphere.

The centrepiece of EU policy for combating climate change and accelerating the transition to a clean energy economy is the Climate Package, adopted in December 2008. As part of this effort Member States have agreed collectively to reduce GHG emissions by 20 percent relative to 1990 levels by 2020, including a commitment for 20 percent of final energy consumption to come from renewable sources. The emissions reduction target will rise to 30 percent in the context of a global agreement where other developed countries take on comparable targets and major developing countries contribute adequately according to their responsibilities and respective capabilities.

The logic behind the conditional 30 percent offer – first adopted by EU Heads of Government in March 2007 – was that it would create a positive dynamic in which other countries would reciprocate with stronger offers of their own. Among the positive developments since then are new and more ambitious ranges of targets from Australia, Japan and Norway and announcements of planned enhanced actions from emerging economies such as China, India, Mexico, Brazil, Indonesia, South Africa and South Korea.

However, for the conditional 30 percent offer to gain credibility, and in this way have an impact on the international process, the EU must be seen to be actively “preparing for success” by building a domestic consensus around how it will achieve deeper emissions cuts. It is unfortunate that some European leaders are increasingly perceived to be downplaying expectations and playing up the difficulty of achieving even 20 percent. This partly reflects a belief among many in government that other developed countries – most critically the United States – have not announced acceptable commitments and are unlikely to do so in the near future.

**The risk of Europe holding back is not only that the international negotiations will lose momentum but also that Europe itself will miss the best chance in a generation to boost investment in low**

**carbon infrastructure and transform its economy.** The world has changed since the EU first adopted its 20-30 percent negotiating position in 2007. Lower emissions due to the economic crisis mean that now is the time to put policies in place to encourage the low carbon technologies that will lead to long term sustainable growth. New research suggests that the world has just five years to begin the low carbon industrial transformation needed for 2°C. Beyond 2014 the feasible upper limits of industrial growth rates would make it impossible to meet the necessary carbon targets.<sup>23</sup> The IEA has estimated that every year of delay will add an extra €336bn to the clean investment needed globally between 2010 and 2030 in the energy sector.<sup>24</sup>

The projected fall in the carbon price as a result of the recession also implies reduced auction revenue for governments from 2013 to 2020. In its impact assessment for the Climate Package the European Commission predicted that a carbon price of €39/tonne and 50 percent auctioning would result in auction revenue of around €38bn by 2020. Many forecasts now put the price in 2020 at closer to €20/tonne, meaning revenues would be cut in half.<sup>25</sup> A lower carbon price also implies reduced finance flows to developing countries through the carbon market. According to the World Bank developing countries will need around €320bn of annual investment to address climate change.<sup>26</sup> Existing public contributions amount to roughly €6bn per year, or less than 2 percent of the total.<sup>27</sup> The sum of climate-related public sector commitments proposed by EU leaders is €22-50bn, leaving a shortfall of at least €270bn.<sup>28</sup> At a time when developing countries are investing unprecedented sums in infrastructure, this would be a missed opportunity to help set them on a low carbon growth path.

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<sup>23</sup> 'Climate Solutions 2: Low-Carbon Re-industrialisation', Climate Risk and WWF, October 2009.

<sup>24</sup> IEA (2009), World Energy Outlook 2009, Early Excerpt.

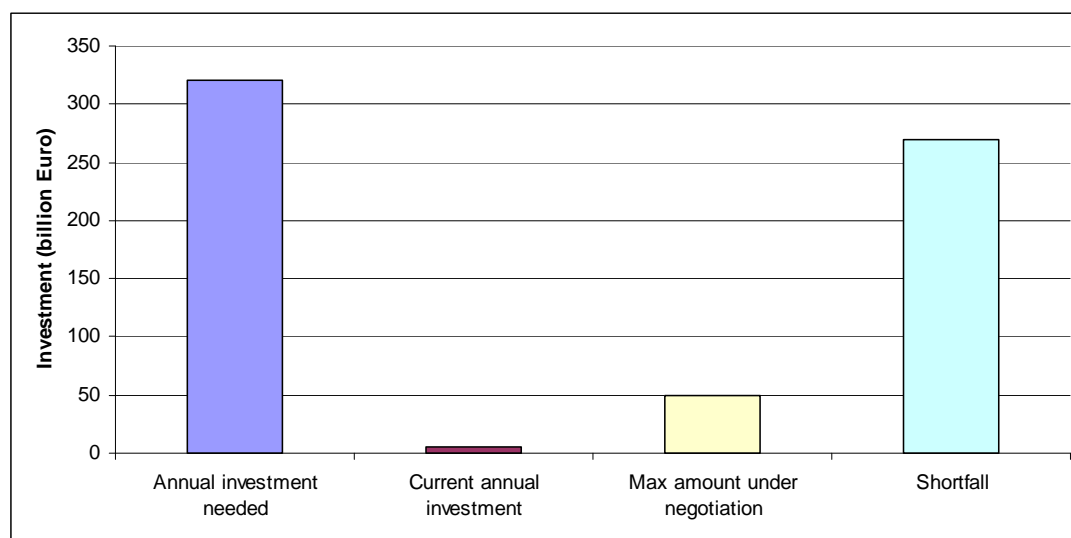
<sup>25</sup> The UK Committee on Climate Change has, for example, lowered its carbon price estimate for 2020 from €56/tonne to €22/tonne: <http://www.theccc.org.uk/topics/economics-and-society/impacts-of-the-recession>

<sup>26</sup> World Bank (2009) 'World Development Report: Development and Climate Change.'

<sup>27</sup> 'Catalysing low-carbon growth in developing economies. Public Finance Mechanisms to scale up private sector investment in climate solution', UNEP and Partners, October 2009.

<sup>28</sup> Ibid.

**Figure 2: Comparison of annual investment needed, current public contributions and pledges and the shortfall**



Failure to make greater cuts in emissions now will also have significant implications for meeting long terms targets. The EU is already committed to reducing emissions by 80-95 percent by 2050. **Assuming a linear trajectory this would mean at least a 40 percent reduction by 2020.** Achieving only 20 percent by 2020 would mean much deeper reductions in later years.

According to the IEA a 450 ppm scenario (50 percent chance of staying below 2°C) requires 3.8 gigatonnes (Gt) of abatement by 2020. Both developed and developing countries are moving closer to this benchmark. Based on a rough calculation, aggregating the high-end targets from Australia, Japan, the EU and Norway would account for approximately 2.0 Gt.<sup>29</sup> If China meets its energy intensity, renewables and nuclear targets the IEA estimates it will achieve roughly a 1.2 Gt reduction by 2020 on its own; meaning a further 0.6 Gt would be needed globally from the US and others. (However, a precautionary approach would dictate much more ambitious pre-2020 abatement to maintain

<sup>29</sup> Estimates are based on European Commission estimates of Annex I pledges as of 7 September 2009. See <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/09/445&format=HTML&aged=0&language=EN&uiLanguage=en>.

a high likelihood of staying below 2°C and avoid locking in carbon intensive infrastructure.)

Rather than using the current targets offered by other countries as an excuse for inaction, **the EU should make a credible strategic declaration of intent to move unilaterally to 30 percent and use this commitment to build the widest possible North-South ambition coalition with countries such as Japan, Australia, South Africa, Mexico, Brazil and Indonesia.** The EU should also table a conditional offer of a 40 percent reduction in the event of a fair, ambitious and binding international agreement. This strategy does not guarantee success, but it bolsters Europe's authority in pressing for higher ambition from countries such as Russia and Canada and could help create the political space for President Obama to win his domestic battles on climate legislation.

A new climate regime will create winners and losers and a just transition must be ensured where jobs are protected and industry losses are minimised. The best way to manage this risk is to put the right policies in place quickly to capture the full benefits of the transition. According to the European Commission's estimates, achieving the renewables target alone will lead to 2.8 million new jobs and a net increase in GDP.<sup>30</sup> This will have important co-benefits as well; oil and gas import bills could be reduced by more than €60bn in 2020 and local air pollution costs could fall by €6bn.<sup>31</sup>

## Section 2: Greater ambition is affordable

While the immediate impact of the recession has been to reduce greenhouse gas emissions, it also means that individuals, governments and businesses are concerned about what the current situation means for employment opportunities and energy bills. Industries opposed to 30 percent are already making the case that it is unaffordable and will damage EU competitiveness at a time when Europe is slowly trying to pull itself out of recession.

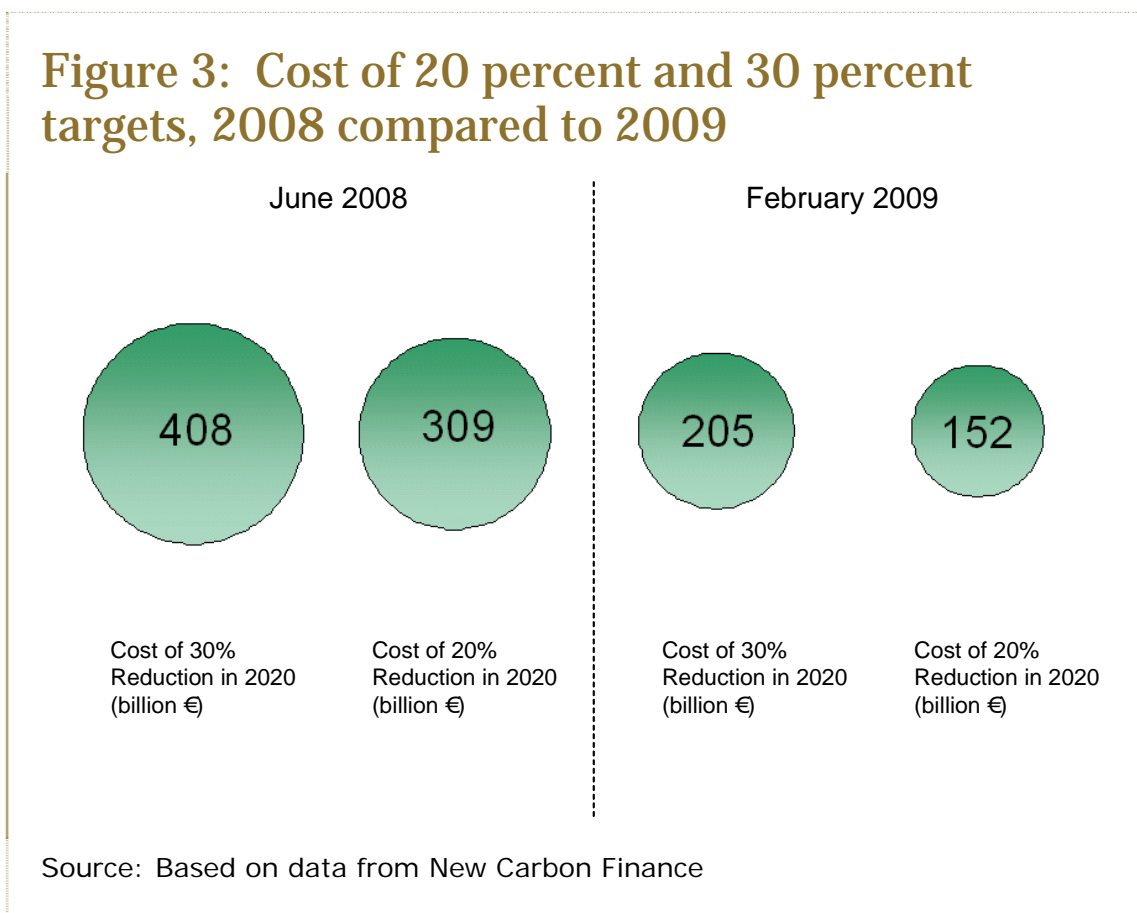
But far from being a reason to delay action, research indicates that the economic crisis is an opportunity for the EU to put the policies in place to transition to a clean energy economy. Provisional findings from the European Environment

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<sup>30</sup> European Commission (2009), 'The impact of renewable energy policy on economic growth and employment in the European Union'. Financed by the European Commission, DG Energy and Transport, under TREN/D1/474/2006.

<sup>31</sup> IEA (2009), World Energy Outlook 2009, Early Excerpt.

Agency (EEA) show that emissions for the EU-27 as a whole have already fallen to 10.7 percent below 1990 levels. Circumstances are similar in the US, with carbon emissions from fossil fuels having dropped 9 percent since 2007.<sup>32</sup> This is not just a short-term phenomenon: mainstream economic forecasts concur that output is unlikely to return to levels seen in the recent past even after the crisis is over.<sup>33</sup> **The cost of achieving a 30 percent target is now estimated to be €104bn cheaper than the original 20 percent reduction was expected to be when first adopted.**<sup>34</sup>



<sup>32</sup> Brown, Lester, 'US headed for massive decline in carbon emissions, grist, 14 October 2009. Available at: <http://www.grist.org/article/u.s.-headed-for-massive-decline-in-carbon-emissions/>

<sup>33</sup> OECD (2009), 'Economic Outlook 85', 'Chapter 4: Beyond the Crisis: Medium Term Challenges Relating to Potential Output, Unemployment and Fiscal Positions'

<sup>34</sup> ETS S.O.S: Why the flagship 'EU Emissions Trading Policy' needs rescuing. Sandbag, July 2009. And New Energy Finance.

Much of the drop in cost is a result of the surplus allowances that may be available in the ETS during Phase 2, which could potentially be banked and used for compliance during Phase 3. **Given the recession and availability of the surplus allowances, the IEA estimates that the EU could meet a 20 percent target without any domestic abatement taking place, undermining the integrity of the ETS.**<sup>35</sup> How this banking issue will be handled, both by Europe and other Annex I countries, remains a critical point of contention in the international negotiations.

The most recent models of the economic and employment impacts of the EU targets consistently show that Europe can achieve a 30 percent (or greater) reduction while adding to growth and employment levels – or at minimal cost to the economy. Table 1 below lists the results of 5 studies produced in the past several months.

**Table 1: Summary of scenarios showing potential reductions and costs for EU**

Study	EU reduction achieved (% below 1990)	Cost (GDP) in 2020	Key assumptions
Cutting the Cost: The Economic Benefits of Collaborative Climate Action (The Climate Group)	30 percent	+1.3 percent (i.e. beneficial impact on the economy due to increased clean investment and efficiency savings)	EU achieves unilateral 30 percent target. Minimal action by other major economies. Carbon price is \$65/tonne in 2020.
Analysis of the Proposals for GHG Reductions in 2020 Made by UNFCCC Annex I Countries by Mid-August 2009 (IIASA)	30 percent	-0.11 – 0.17 percent	EU achieves 30 percent as part of a global deal. Based on ambitious estimates of current A1 pledges (-5 percent below 1990 levels for US)
How the Energy Sector Can Deliver on a Climate Agreement in Copenhagen: Special early	20 percent	-0.3 percent	EU target in the context of global mitigation levels consistent with stabilizing CO2 concentration at

<sup>35</sup> IEA (2009), 'World Energy Outlook 2009'.

excerpt of the World Economic Outlook 2009 (IEA)			450 ppm. Carbon price is \$50/tonne in OECD and EU countries by 2020.
New Energy Finance	30 percent	€203bn lower Feb 2009 than reported in June 2008	Carbon price falls to €40/tonne (down from €55/tonne in previous model)
Sectoral Emission Reduction Potentials and Economic Costs for Climate Change: Summary Report (Ecofys)	30 percent	Not provided	Bottom up and top down analysis of the technical mitigation potential in Europe

All of the studies modelling a 30 percent reduction find that it is technically and economically achievable for Europe – either when acting alone or in the context of a global deal. For example, the International Institute for Applied Systems Analysis (IIASA) finds that under optimistic assumptions of current Annex I pledges, including a US target of 5 percent below 1990 levels, **the EU could meet 30 percent at a cost of 0.13-0.17 percent of GDP even without the use of offsets.**

The figures tell a similar story when comparing a unilateral EU target of 30 percent with a 30 percent target that is part of a wider global deal. A scenario produced for The Climate Group, an independent NGO that works internationally with business and government leaders, shows that **even if the EU adopted a 30 percent target without commitments from any other countries, GDP would be 1.36 percent higher than the baseline and there would be a net increase of 1.1 million jobs by 2020.** This is due primarily to the effect of strong climate policy on driving clean investment, and the multiplier effect on the wider economy. Studies have reached similar conclusions at the Member State level. Germany, for example, could reach a 40 percent reduction by 2020 at a cost of approximately 0.6 percent of GDP.<sup>36</sup>

<sup>36</sup> WWF (2009), 'Blueprint Germany: A strategy for a climate safe 2050', October 2009.

### Section 3: Greater ambition is unlikely to harm EU industrial competitiveness

Much of the opposition to a stronger target comes from energy intensive industries worried about jobs moving overseas to countries without similar carbon constraints. This could in turn lead to “carbon leakage” whereby emissions would increase outside of the EU as industries relocate. To assess potential leakage and competitiveness impacts it is necessary to consider both the likely impact a carbon price will have on productivity costs in a sector or sub-sector, as well as the extent that sectors or sub-sectors are exposed to competition from global markets (also known as trade intensity).

Overall the evidence is mixed.<sup>37</sup> In its own analysis the European Commission found that out of 258 sectors studied, 27 had both trade intensity higher than 10 percent and a CO<sub>2</sub> cost above 5 percent. A recent survey of companies accounting for 5 percent of the emissions covered under the ETS – including those in the power sector and energy intensive industries – found that none of the companies interviewed reported a significant loss of business, nor had they relocated operations, reduced workforce or lost market share.<sup>38</sup> Other evidence suggests that only a few sub-sectors representing as little as 1 percent of GDP are at risk.<sup>39</sup> A review of the literature shows that employment impacts are concentrated in a few processes and facilities, and can be offset by technology spill-over.<sup>40</sup>

In practice, a great deal of political attention was paid to industry concerns during negotiations over the Climate Package and substantial concessions were granted to address potential competitiveness impacts. In December 2009 the Commission published a final list of 164 sectors deemed to be exposed to a significant risk of carbon leakage and therefore eligible for up to 100 percent free allocation of allowances.<sup>41</sup> State aid could also be provided to correct for any changes in relative prices. For political reasons, these generous concessions have been extended to a much wider range of industrial sectors than would be justified based on a hard-headed assessment of the economic evidence. As a

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<sup>37</sup> For an overview see: Hourcade et al. (2007), ‘Differentiation and dynamics of EU ETS industrial competitiveness impacts. Climate Strategies Report, Climate Strategies 2007. & Graichen et al. (2008), ‘Impacts of the EU Emissions Trading Scheme on the industrial competitiveness in Germany, ‘Climate Change 10/08. Umweltbundesamt, Dessau-RoBlau, Germany.

<sup>38</sup> ‘The Effects of EU climate legislation on Business Competitiveness: A survey and analysis’, The Climate Group, September 2009.

<sup>39</sup> ‘Competitive distortions and leakage in a world of different carbon prices: Trade, competitiveness and employment challenges when meeting the post-2012 climate commitments in the European Union’, European Parliament, Policy Department, Economic and Scientific Policy. IP/A/CLIM/ST/2008-03 07 08 & 14.

<sup>40</sup> Lehr & Lutz

<sup>41</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:001:0010:0018:EN:PDF>

result many sectors will continue to end up with surplus allowances which they can sell at a value higher than the cost of their abatement efforts.<sup>42</sup> According to one recent estimate if industries covered by the ETS were to sell their surplus permits by 2012 at €14/tonne this would amount to additional windfall profits of €5.4bn.<sup>43</sup>

A study by the French think tank iDDi (International Institute for Sustainable Development and International Relations) considered how major industrial sectors including steel, aluminium, cement and sheet glass, would be impacted by a carbon constraint of stabilizing atmospheric concentration at 450 ppm. The study took into account both the need for new low carbon technologies as well as the impact of a carbon price on demand for heavy materials. **The results show that carbon constraints in the EU consistent with a 2°C trajectory would reinforce demand for heavy materials and open new global markets for more efficient solutions such as low carbon steel, which play to the strengths of European manufacturers.**

The iDDi study further concluded that meeting carbon reduction goals will require large-scale shifts towards low carbon infrastructure for all sectors – power, industry, buildings and transport. Major materials producers – steel, aluminium, cement and glass – have the opportunity to benefit from this increase in demand; but only by adapting to a carbon constraint through early investment in more efficient production techniques.

In addition to free allocation some industries are also calling for the use of border tax adjustments to address competitiveness concerns. Such measures, they argue, would establish a level playing field by adjusting for the differential in carbon prices in traded products. However, for the reasons set out above, the economic case is hard to sustain and the political implications could be explosive – provoking relation by countries such as China and India. Due to these extreme sensitivities, any border adjustments should be part of multilateral agreements focused specifically on addressing carbon leakage and avoiding discriminatory practices.<sup>44</sup>

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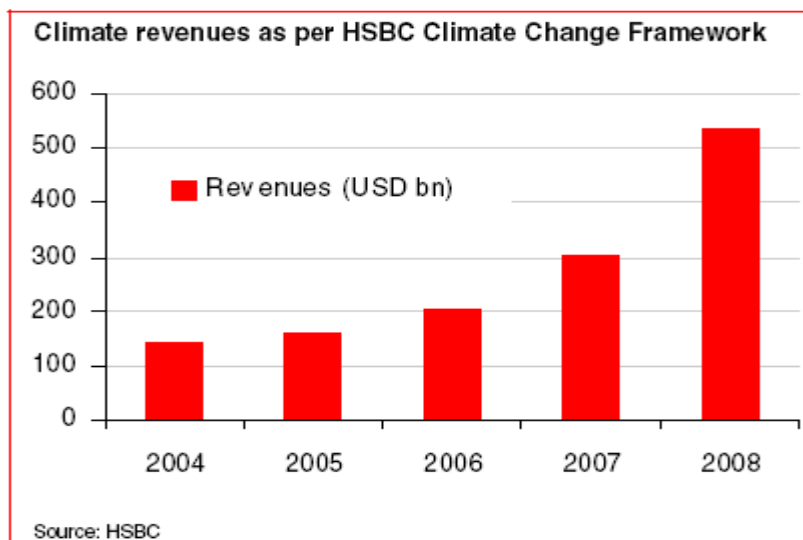
<sup>42</sup> Grubb et al. (2009), 'Climate Policy and Industrial Competitiveness: Ten Insights From Europe on the EU Emissions Trading System', Climate Strategies.

<sup>43</sup> ETS S.O.S: Why the flagship 'EU Emissions Trading Policy' needs rescuing', sandbag. July 2009.

<sup>44</sup> It is important to distinguish between border adjustments and border tax adjustments. The former can involve taxes but can also work through other methods, for example by requiring importers to submit allowances under a trading system.

All signs point to a global low carbon transition that is already in motion. Revenues from companies providing goods, products and services related to climate change rose 75 percent in 2008 and have already reached USD 530bn, exceeding the aerospace and defence sectors. They could reach USD 2 trillion by 2020.<sup>45</sup>

**Figure 3: Climate revenues, 2004-2008**



To remain competitive in the future Europe must move quickly to capture these new low carbon markets. A stronger reduction target would help give the private sector the certainty it needs to scale up investment leading to new clean energy jobs, wider deployment of low carbon technologies, and the innovation needed to sustain European leadership in the industries of the future.

#### **Section 4: The road to 30 percent should be consistent with 2°C**

A commitment from Europe of at least a 30 percent reduction below 1990 levels by 2020 would send a strong signal to the rest of the world, but the target itself is not the end of the story. The challenge for the EU domestically is to use this benchmark to drive structural economic change. This will require a

<sup>45</sup> de Lima, J. & Sumon, V. Climate Change – September annual index review. HSBC. 14 September 2009.

fundamental shift in investments across key sectors including energy, infrastructure, transport and buildings.

The Climate Package provides for up to half of the additional reductions under a 30 percent target to be met by international offsets.<sup>46</sup> While offsets can help to lower EU compliance costs, relying on them too heavily will weaken incentives for domestic economic restructuring. Instead the EU should agree on a clear roadmap to 30 percent that will deliver the best chance of 2°C while creating the new clean energy industries that will be the engines of growth and jobs in the coming decades. The private sector will provide the bulk of the capital and finance and will take its share of the risk but will need the government to provide greater certainty about the future. Three areas will be critical:

### **1. Energy Efficiency**

*“Doing the same with less energy is arguably the best way to reduce our carbon footprint and to reduce dependency on foreign oil and gas.”  
President Barroso, 26 June 2009*

The European Commission estimates that Europe wastes at least 20 percent of its energy. Depending on the price of oil this could be costing the economy some €200bn annually.<sup>47</sup> Immediate reductions can be achieved through efficiency improvements, primarily in buildings and transport; but their full potential is difficult to realise and will require government intervention to correct various and complex market failures. Interests are often not aligned - for example, infrastructure developers do not gain the benefits from efficiency improvements - and consumers are often not well informed about (or do not properly value) potential energy savings. There are also issues with access to up-front capital and, perhaps most importantly, reducing the transaction costs associated with what is a very fragmented opportunity.

Efficiency improvements are not only affordable but are often cost negative with short payback periods. The IEA has estimated that €6.7 trillion of investment would be needed by 2020 in order to encourage low carbon energy and reduce the use of fossil fuels enough to maintain a 50 percent chance of staying below

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<sup>46</sup> Texts adopted by the European Parliament

<sup>47</sup> The case for investing in energy productivity. McKinsey Global Institute, February 2008.

2°C. Pursuing energy efficiency measures could make up the large majority of this effort – totalling savings of €5.8 trillion between today and 2030.<sup>48</sup>

To date, energy efficiency has not been regulated because it is 'too hard'. This must be addressed: new legally binding measures are needed to give the Climate Package's voluntary 20 percent efficiency target the same mandatory status as the other "20/20/20" targets.<sup>49</sup> This means adjusting existing legislation to require Member States to account for energy efficiency reductions as part of their respective targets both on the demand / consumption side and on the supply side. Wider roll out of minimum energy efficiency standards is needed. Public procurement plans can be used to stimulate demand for the most efficient products. However this potential has only been marginally exploited and suffers from problems of fragmentation as the criteria that products have to meet often differ substantially between countries.<sup>50</sup> There is a need to harmonize these rules at the EU level.

Making the existing National Action Plans on Energy Efficiency mandatory would have the dual benefit of achieving cost effective reductions as well as making Europe a leader in the market for new products and services abroad. Europe is already playing a leading role in setting environmental standards and exporting these standards to other parts of the world – for example, China's adoption of EU standards for vehicle fuel efficiency. McKinsey estimates that European businesses creating new energy-efficient products and solutions could earn close to €30bn annually in energy productivity improvements across Europe while reducing emissions at the same time.<sup>51</sup>

## 2. The Power Sector

*“Preparing to decarbonise carbon electricity production by 2050 should be a key priority for the next Commission.” President Barroso, 24 June 2009*

Efficiency and power sector decarbonisation need to be closely linked because meeting low carbon electricity demand at current efficiency levels would be

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<sup>48</sup> IEA (2009), World Energy Outlook 2009, Early Excerpt.

<sup>49</sup> European Commission, 'Investing in the Development of Low Carbon Technologies', SEC(2009) 1295. [http://ec.europa.eu/energy/technology/set\\_plan/set\\_plan\\_en.htm](http://ec.europa.eu/energy/technology/set_plan/set_plan_en.htm)

<sup>50</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee on the Regions on the Sustainable Consumption and Production and Sustainable Industrial Policy. Brussels, 16.7.2008. COM(2008) 397 final.

<sup>51</sup> The case for investing in energy productivity, McKinsey Global Institute, February 2008.

extremely expensive. The power sector accounts for roughly one quarter of global GHG emissions and under BAU estimates it will account for the largest increase in emissions of any sector to 2020.<sup>52</sup> However it also has by far the greatest abatement opportunities.<sup>53</sup>

In the short term there is a need to increase efficiency in energy production, particularly in coal-fired power plants which are the most energy intensive fossil fuel and provide the largest potential source of emissions reductions in the power sector. Minimum standards for power plant efficiency should be considered. Efficiency gains can also be made by linking electricity generation to heating and cooling demands through Combined Heat and Power (CHP) systems.

In the longer term decarbonisation will require large-scale reductions through the deployment of more advanced technologies such as CCS as well as the infrastructure needed to integrate intermittent decentralized power from renewables like off-shore wind and concentrated solar thermal power. This will require investments in CCS demonstration plants and smart and super-smart grid technology – large-scale projects that will only be delivered through coordinated action at the supranational level. While the EU ETS has had some success in incentivising a range of dispersed emissions reductions particularly in efficiency and fuel switching, it has been less effective at delivering incentives for large-scale low carbon power investment. Volatility in the carbon price and policy uncertainty has meant that companies have tended to discount carbon prices in investment decisions.

While existing low carbon technologies must be scaled up there is also a need to dramatically increase funding for R&D. In the new Commission Communication on Investing in the Development of Low Carbon Technologies (Strategic Energy Technology Plan) the EU has assessed the levels of public spending needed for the development and demonstration of clean energy technologies. The Commission and Member States need to develop a blueprint to deliver the necessary investments, including a radically increased share of the EU Budget.

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<sup>52</sup> Pathways to a Low-Carbon Economy. Version 2 of the Global Greenhouse Gas Abatement Cost Curve. McKinsey & Company, 2008.

<sup>53</sup> Ibid.

### 3. Low Carbon Transport

*“The transport system's exclusive reliance on fossil fuels must also change radically in the decades to come.” President Barroso, 24 June 2009*

CO<sub>2</sub> emissions from new passenger cars account for about 12 percent of the EU's carbon emissions.<sup>54</sup> Energy demand from road transportation is projected to grow at 1.3 percent per year as car penetration rises in areas of north-eastern and southern Europe and larger vehicles account for an increasing share of new car sales.<sup>55</sup> While there will be large productivity gains due to strong efficiency standards, per capita emissions are still projected to rise.

Reversing this trend will require more hybrid electric vehicles as well as the supporting infrastructure (i.e. smart grids, advanced battery storage and recharging facilities) where cars can feed power back into the grid when not in use. Globally the fuel economy of new light duty vehicles could be improved by 50 percent by 2030 using cost effective technologies, including hybridization.<sup>56</sup> This would reduce CO<sub>2</sub> emissions by over 1 Gt a year by 2025, resulting in savings of annual oil import bills worth over €200bn. China, Japan and others are already investing heavily in this technology.

The EU has strict fuel economy standards, aiming for an average efficiency for the fleet of 130 g/km by 2012 with light duty vehicles reaching 120 g/km. This target is set to be strengthened further by 2020, to 95 g/km. However, recent analysis shows that even higher efficiency is possible. **For 2020 a target of 85 g/km for new cars is technically feasible, assuming that advanced light-weight construction can be widely applied.** The costs for reaching this target would be 20-30 percent of the 2006 retail price.<sup>57</sup>

Greening the European vehicles fleet for the long term requires government intervention now. The provision of a medium term upper CO<sub>2</sub> limit of 85 g/km would be the most effective way to help industry to deliver. There is also a need for government support for R&D programs into greener vehicles, advanced engine technologies, hybridisation and electric cars, high-speed rail networks and other clean technology public transportation systems which can make a

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<sup>54</sup> European Commission, 'Reducing CO<sub>2</sub> emissions from light duty vehicles, [http://ec.europa.eu/environment/air/transport/co2/co2\\_home.htm](http://ec.europa.eu/environment/air/transport/co2/co2_home.htm).

<sup>55</sup> Capturing the European Energy Productivity Opportunity, McKinsey Global Institute, September 2008.

<sup>56</sup> IEA (2008), Energy Technology Perspective.

<sup>57</sup> AEA (2009), 'Assessment with respect to long term CO<sub>2</sub> emission targets for passenger cars and vans. Report to European Commission.

major contribution to CO2 reduction in the transport sector whilst empowering citizens with greater mobility. Tax breaks for environmentally friendly cars and “cash for clunkers” premiums are already in use and having positive effects. Further policy initiatives need to address the issue of grid capacity, quality and smart management.