***Press release***

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***PwC: Global economies must lower carbon emissions at five times the levels currently achieved***

*PwC analysis of economic growth rates and greenhouse gas emissions data for G20 economies*

PwC’s climate change analysts estimate global economies need to cut their energy-related carbon emissions for every $ of GDP by 6.2% every year from now to 2100. That’s more than five times the rate currently achieved. The reduction target is an estimate of how much countries need to reduce their energy-related emissions by, while growing their economy, in order to limit global warming to 2°C. A rise of temperature of 2°C of warming is the limit scientists have agreed upon to ensure the serious risks of runaway climate change are avoided.

For the sixth successive edition of the PwC analysis, the Low Carbon Economy Index, *2 degrees of separation – ambition & reality,* finds that the reduction target of the global carbon intensity (greenhouse gas emissions per $GDP) has been missed. The gap between what countries are doing and what needs to be done continues to grow.

Current total annual energy-related emissions are just over 30 GtCO2 and rising, on the back of a GDP growth of 3.1%. In the same period, carbon intensity was reduced by only 1.2%, a fraction of what was needed. As a result, the global challenge going forward is tougher than before, averaging 6.2% every year, to 2100.

***Australia, the unexpected champion***

In the Index’s G20 analysis, an unexpected champion surpassed the annual target: Australia recorded a decarbonisation rate of 7.2% in 2013, propelling it to the top of the table for the second year in a row. Three other countries – the UK, Italy and China – achieved a decarbonisation rate of between 4% and 5%. Five countries, however, increased their carbon intensity in 2013 – France, the US, India, Germany and Brazil.

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| Country | Carbon Intensity (tCO2/2013$m)  2013 (2012-13) | Change in carbon intensity 2012-13 | Change in carbon intensity 2011-12 | Annual average change in carbon intensity 2008-2013 |
| World | 323 | **-1.2%** | *-0.8%* | -0.6% |
| G7 | 281 | **-0.2%** | *-2.7%* | -1.9% |
| E7 | 404 | **-1.7%** | *-0.1%* | -0.3% |
| Australia | 338 | **-7.2%** | *-5.3%* | -4.6% |
| UK | 206 | **-4.8%** | *+2.4%* | -2.9% |
| Italy | 172 | **-4.1%** | *-3.5%* | -2.9% |
| China | 561 | **-4.0%** | *-1.4%* | -1.6% |
| South Africa | 635 | **-3.0%** | *-1.5%* | -3.0% |

Current rates of carbon intensity mean the total amount of carbon the IPCC have advised the world can emit this century to limit climate change to 2°C will be depleted within 20 years. However the analysis shows encouraging signs that momentum is building in critical areas for low-carbon economic growth:

* The E7[[1]](#footnote-1) outperformed the G7 in carbon reduction (1.7% vs. 0.2%) for the first time in six years, indicating how it can be possible to maintain economic growth while slowing the rate of growth in emissions.
* Renewable electricity generation, excluding hydroelectricity, grew at a rate of 16% - a continuing trend over the last decade with double-digit growth every year. Renewables now account for nearly 10% of the total energy mix in six of the G20 economies.

**Laurent Rouach, Partner and Sustainability Leader at PwC Luxembourg** said: *"After a decade of carbon inertia, we are way behind and now need to decarbonise at more than five times our current rate to avoid a temperature rise of 2°C. But there are reasons for optimism. The E7 has woken up to the business logic of green growth, decarbonising faster than the G7 for the first time. And globall,y renewables are gaining traction. As they approach cost parity, the stage is set for a policy framework that shifts subsidies away from fossil fuels and accelerates the renewables rollout. Making up for the inadequacy to date will be technologically harder, financially costlier, and riskier for the climate in the future.”*

***Two degrees of separation***

The research is released just two weeks before a UN summit on climate change in New York (23 September) to be attended by world leaders, aiming to up the ante on national commitments to reduce GHG emissions. The PwC research demonstrates the disconnect between the global climate negotiations aiming for a 2°C limit on global warming, but national pledges may only manage to limit it to 3°C, and current trajectory actually on course for a 4°C rise.

The analysis describes as “unforgiving” the timeline to achieve what is now necessary in terms of carbon emissions reduction:

* Annual energy-related emissions in the G20 bloc need to fall by one-third by 2030 and just over half by 2050 to stay below the 2°C target.
* Collectively, the G7 group needs to almost double its decarbonisation efforts to 3.8% per year between 2014 and 2020. They have achieved an average decarbonisation rate of 2.3% between 2010 and 2013. Absolute carbon emissions (i.e. not just those related to energy) need to fall by 44% by 2030 and 75% by 2050 compared to 2010 levels.
* For the E7, a carbon intensity reduction of 8.5% per annum is required from 2020 onwards, followed by further reductions of 5.3% a year from 2030 to 2050 in order not to exceed the 2°C limit.

*“What we’ve seen over the past 12 months is a subtle change in the carbon rhetoric. The costs of climate inaction – from flooding and food insecurity to energy costs and commodity pricing – appear to be growing constantly. A broader recognition is needed by both business and political leaders that taking decisive action to avoid the extremes of climate change is a pre-condition for sustained economic growth”,* concluded Laurent Rouach.

You can download the PwC Low Carbon Economy Index *2014* on [www.pwc.lu](http://www.pwc.lu/en/sustainability/docs/pwc-sustainability-pwc-low-carbon-economy-index-2014.pdf)

**Notes**

1. Amongst the Low Carbon Economy Index results for G20 nations:
   1. **Australia** recorded a 7.2% decarbonisation rate, partly driven by a fall in energy demand against a growing economy and a 30% increase in hydroelectricity output.
   2. **China** recorded one of the top performances for a developing country, with a 2013 decarbonisation rate of 4%. A flourishing renewable energy sector played an important part. However, China’s strong achievement needs to be seen in the context of its role as the world’s largest emitter as well as its high overall carbon intensity – double that of G7 economies.
   3. The **UK**, third from the bottom in the 2012 list, is now the most-improved G20 nation in terms of carbon intensity, and it is already one of the world’s most energy-efficient economies. Improvements in energy efficiency, a national rise in renewable energy consumption and the closure of two large coal plants meant that UK carbon intensity fell significantly in 2013, alongside relatively strong economic growth.
   4. The Index finds that coal in the **US** has regained some market share from natural gas in power generation since its low in April 2012, causing an increase in emissions since 2007 and dispelling the myth that a shale gas revolution will necessarily result in emissions reductions.
   5. **Germany** – the large-scale transition away from nuclear to renewable power has caused a short-term increase in fossil fuel use.
   6. In **Brazil**, almost a third of the country’s energy comes from hydropower, but multiple droughts means the energy gap had to be filled by importing liquefied natural gas.
   7. Five countries increased their carbon intensity over 2013: **France, the US, India, Germany and Brazil**. Contributing factors included increased coal consumption to meet energy demands; a slower pace of change to renewable energy compared to other nations; and short term challenges in energy production.
2. Under the UN climate negotiations process, all countries are expected to put forward their pledges, with the collective aim of reducing greenhouse gas emissions globally to limit warming to 2°C by 2100.
3. The E7 designates China, India, Brazil, Mexico, Russia, Indonesia and Turkey.
4. According to the IPCC, levels of carbon dioxide (C02) are at their highest levels for forty years. The IPCC has warned that our current trajectory will lead to a warming estimated to range from 3.7°C – 4.8°C over course of the 21st century, with severe adverse impacts predicted for both people and ecosystems, including water pollution and scarcity, food security threats, coastal inundation, extreme weather events, ecosystem shifts and species

extinction on land and at sea. At the higher levels of warming, many of these impacts are likely to be systemic, global and irreversible.

1. About the Low Carbon Economy Index (LCEI): The LCEI model considers energy-related carbon emissions, driven by a series of assumptions including economic growth projections, primary energy intensity and fuel mix share. The model covers energy and macroeconomic data from individual G20 economies as well as world totals. Details of our model structure are available in our first LCEI report. Data on estimates of the required pledges are based on the IPCC findings on potential emission pathways, as described in Chapter 6 of the Working Group 3 in the AR5 series, and comparisons with the emissions data/projection in the LCEI model. Data is also checked against the UNEP Emissions Gap report. An important caveat is that we have presented point estimates on required pledges and decarbonisation based on a series of assumptions, but in practice pledges and decarbonisation rates can fall within a range due to modelling uncertainties and climate variability.

**Notes to editors:**

**About PwC**

1. PwC Luxembourg (www.pwc.lu) is the largest professional services firm in Luxembourg with 2,300 people employed from 57 different countries. It provides audit, tax and advisory services including management consulting, transaction, financing and regulatory advice to a wide variety of clients from local and middle market entrepreneurs to large multinational companies operating from Luxembourg and the Greater Region. It helps its clients create the value they are looking for by giving comfort to the capital markets and providing advice through an industry focused approach.
2. The global PwC network is the largest provider of professional services in audit, tax and advisory. We’re a network of independent firms in 157 countries and employ more than 184,000 people. Tell us what matters to you and find out more by visiting us at www.pwc.com and www.pwc.lu.

1. The E7 is a group of seven countries with emerging economies: China, Russia, India, Indonesia, Mexico, Brazil and Turkey [↑](#footnote-ref-1)