

## WORLD ENERGY OUTLOOK 2015 FACTSHEET

### *The energy sector and climate change in the run-up to COP21*

- ▶ **The world is moving towards a crucial climate meeting in Paris in December 2015 (COP21).** As the largest source of greenhouse-gas (GHG) emissions, the energy sector must be at the heart of global action to tackle climate change. In advance of the meeting, over 150 countries – representing 90% of global economic activity and nearly 90% of energy-related GHG emissions – have submitted pledges to reduce emissions. Around half of these submissions include explicit energy-focused targets, either alongside a GHG emissions target or as a stand-alone goal. The most common energy-related measures are those that target increased renewables deployment (40% of submissions) or improved energy efficiency (one-third of submissions).
- ▶ **An energy sector transition is underway in many parts of the world.** Policies to support the transition are increasingly being adopted, the US Clean Power Plan and China’s newly announced carbon trading scheme to take effect in 2017 being among the most recent. Supportive policies led to the installation of a record-high 130 GW of renewables capacity in the power sector in 2014; collectively, renewables secured their position as the second-largest source of electricity, behind coal. Energy efficiency improvements helped restrain the growth in final energy demand in 2014 to just one-third of the level it would otherwise have been. The coverage of energy efficiency regulations in industry, buildings and transport has nearly doubled, rising from 14% of the world’s energy consumption in 2005 to 27% in 2014.
- ▶ **In the New Policies Scenario (the central scenario of *WEO-2015*), the cautious implementation of new and announced policies, including the energy sector components of the climate pledges, supports the greater adoption of low-carbon technologies and improved energy efficiency.** Energy demand grows at 1.0% per year to 2040, about half the average annual rate since 1990, thanks to increased energy efficiency in end-uses and structural changes to the economy. The power sector decarbonises more quickly than ever before: CO<sub>2</sub> emissions from power generation grow at only one-fifth the rate at which power output rises to 2040, breaking a longstanding one-for-one relationship. The deployment of renewables, which totals 3 600 GW from 2015-2040, is greater than for all other types of power plant combined as non-hydro (mostly wind and solar) become increasingly competitive.
- ▶ **Despite positive progress, efforts are not yet enough to move the world onto a pathway consistent with the 2 °C climate goal.** In the New Policies Scenario, energy-related CO<sub>2</sub> emissions increase to 36.7 Gt in 2040, 16% higher than in 2013. Having increased by 2.4% per year since 2000, these emissions are now projected to increase at the much more modest rate of 0.6% per year for the rest of this decade, and 0.5% per year in the 2020s and 2030s. Full implementation of the unconditional pledges made for COP21 by more than 150 countries by mid-October 2015 would require cumulative investment of \$13.5 trillion in low-carbon technologies and energy efficiency until 2030.
- ▶ **Lower oil prices require stronger policy efforts, so as not to hold back the energy sector transformation.** Lower prices have facilitated some positive policy shifts, such as the reform to fossil-fuel consumption subsidies in India, Indonesia and elsewhere (global fossil-fuel subsidies were around \$490 billion in 2014, but would have been around \$610 billion without reforms enacted since 2009). However, if lower prices prevail for a prolonged period, they could discourage \$800 billion of energy efficiency investments through to 2040. Without additional policy efforts, low oil prices could lock in a less efficient and less climate-friendly capital stock that leads to higher long-term emissions.
- ▶ **The energy sector in all countries can do more to restrain and reduce their GHG emissions.** In *Energy and Climate Change*, a *WEO* special report released in June 2015, the IEA highlighted how just five energy sector measures (relying only on proven technologies and policies) could help achieve an early peak in total energy-related GHG emissions, at no net economic cost. These measures, which were presented as a “Bridge Strategy” and intended to be a bridge to further action, include: improving energy efficiency in the industry, buildings and transport sectors; phasing out the use of the least-efficient coal-fired power plants; further boosting investment in renewables-based power generation technologies (to \$400 billion in 2030); gradually phasing out fossil fuel subsidies; and reducing methane emissions from oil and gas production.