• Good morning, Ladies and Gentlemen. It is a pleasure to be in Rome, and to be addressing such a distinguished Italian audience. I would like to thank the ENEL Foundation for inviting me and organizing this meeting.

• The world energy landscape is changing rapidly. Global energy needs are growing and shifting to emerging and developing economies. Supply patterns are also rapidly changing from region to region – but are still deeply rooted in fossil fuels, an unsustainable situation. The emergence of shale gas as an important energy source; the rapid rise in deployment of renewables and their increasing cost-competitiveness; and improving energy efficiency standards. These are all impacting the global picture.

• These changes have complex and interlinked global consequences, with increasingly interdependent markets.

• The challenges of providing secure but also sustainable energy are therefore daunting, but as we see it, manageable.

• So today I would to briefly present some key points from three of our recent publications – on climate, gas, and renewables.
First, climate. Our latest WEO Special Report, released last month, looks at how to keep the world on track in the medium term, to eventually reach our climate goals.

CO₂ levels in the atmosphere reached the record level 400 ppm this May. Average global temperatures have already increased by around 0.8 °C. According to scientific analysis, our climate is already changing and we should expect extreme weather events (such as storms, floods and heat waves) to become more frequent and intense, as well as increasing global temperatures and rising sea levels.

The energy industry itself will not be immune from the physical impacts of climate change.

- Energy demand patterns will change and infrastructure will be impacted – both requiring adaptation in the energy sector.
- The Mediterranean will be particularly affected by heat waves and temperature increase, and energy systems in the area should start adjusting.
•Our report emphasises four measures to take in the immediate term, even in the absence of international agreement. They are all feasible, do not impact economic growth, and based on proven technologies.

•First, improving energy efficiency – particularly in buildings, transport, and industry. This policy package accounts for half of the possible emission savings to 2020.

•Second, phasing out inefficient coal power plants in favour of cleaner fuels, including renewables and gas.

•Third, reducing methane emissions in upstream oil and gas production.

•And finally, achieving at least a partial phase-out of fossil fuels subsidies.

•These four measures taken together can stop emissions growth by 2020 and keep the 2°C target alive, without harming economic growth.

•But these actions must be taken in conjunction with longer-term policies – particularly the deployment of other low carbon measures such as carbon capture and storage, and renewables.
• So let’s have a look at our own medium term outlook for renewables. Their rapid growth of renewables continues to beat expectations. It is a bright spot in an otherwise bleak assessment of global progress towards a cleaner and more diversified energy mix – but how sustainable is this trend.

• Well, our medium-term outlook for renewables remains positive.

• Electricity generation from hydropower, wind, solar and other renewable sources is projected to scale up by 40% in the next five years.
• By 2016 global renewable electricity generation will overtake that of gas, and represent twice as much as nuclear.
• And by 2018 the share of renewable electricity will account for a quarter of the global power mix, up from 20% in 2011.
• There are two key trends driving the outlook.

  • First, renewable power deployment is continuing to expand geographically. Investments and renewable deployment are accelerating in emerging markets, mainly driven by fast-rising electricity demand, energy diversification needs, and local pollution concerns, while contributing to climate change mitigation. China alone accounts for nearly 40% of expected global growth.
  • This trend is expected to over-compensate for slower growth and smooth out volatility in other areas, notably Europe and the US.

• Second, more renewables are becoming cost competitive versus fossil fuels in a wider set of circumstances.

• But there are challenges that contributed to the year-on-year decline in investment in 2012 and early 2013.

  • Anaemic European economic and energy demand growth, and shrinking public expenditure, is one.
  • Second, grid integration of variable renewables like wind and photovoltaics is a continuing issue.
  • And finally there are non-economic barriers, such as social acceptance and burdensome authorisation procedures.
• To get investment up, risks must be reduced and shared. The main challenge for investors and business is policy uncertainty.

• Retroactive policy changes are the worst offender in this regard.

• But also stop & go decisions – for example around the extension of the Production Tax Credit in the US, and the reduction of accelerated depreciation incentives for wind in India.

• Finally, many countries have reduced economic incentives to renewables. Cuts in incentives are absolutely legitimate and desirable when technology costs fall and the savings can be passed to tax-payers. But those decisions must be transparent and predictable, allowing industry to adapt, and in line with long-term policy targets.
• Now let me move to another bright spot in the global energy system - the rapid progress of natural gas.

• We see this as a positive phenomenon, and one in line with the progress of renewables.

• Our new Medium Term Gas Market Outlook highlighted 3 important new phenomena.

• The first is the rapidly improving competitiveness of North America as a potential LNG exporter. Unconventional upstream in North America proved to be remarkably successful in maintaining production growth at low gas prices. That is thanks to technological progress in the industry – and also a shrinking environmental footprint.

• Outside North America we see a persistent tightness of LNG supply due to security problems and also booming demand among Middle East producers – often fuelled by subsidies.

• North American LNG exports are now firmly in the cards, and will relieve some of that tightness. We fully agree with the analysis of the Department of Energy that exports improve the welfare of the United States, and welcome the approval of Freeport – the second major export project. Those exports will provide the flexibly priced gas that will help to integrate and develop global LNG markets.
• But we are pessimistic about European gas demand. Gas in Europe faces a perfect storm of a weak economy, rapidly growing renewables, and market conditions that favor coal over gas. Still, we see the conditions that pushed the recent mini-boom in European coal to be fleeting.

• Largely, that is thanks to the forced decommissioning of older, less efficient coal plants over the next 5 years.
• The third major change in our expectations is the role of gas as a transport fuel. This is not a new technology. In fact Italy itself has a substantial fleet of compressed natural gas vehicles.

• In the next 5 years we see a game-changing acceleration in two key countries. In the US, gas in transport is a byproduct of the low prices brought on by the shale gas revolution. In China, the key driver is the relative cleanliness of gas in transport, with benefits for urban air quality.

• The easiest sector is public transport, with the predictable routes and high utilization of buses. If gas can be substantially applied to heavy duty transport, the potential gains are massive – this sector accounts for more demand than personal cars. But that requires LNG infrastructure, which is expensive. We believe that the next 5 years will witness significant roll-out of that supporting infrastructure. But even in the medium term we see 700 thousand barrels per day of oil replaced by gas in transport - a higher contribution than biofuels and electric cars combined.
• So there are real challenges in providing secure and sustainable energy supplies. The solution lies in a portfolio of measures in both the supply and use of energy. Progress can be and is being made.

  • Energy efficiency measures will be key, but will require policy leadership to be implemented. Our first Energy Efficiency Medium Term Market Report will be released in the coming months – and will highlight this prospect.

  • The supply and demand patterns for gas are shifting rapidly. Increased use of gas – produced domestically and traded internationally can play a role in improving energy access and in reducing emissions in power generation and increasingly in the transport sector.

  • And renewables are growing and increasingly competitive in emerging and developing economies, as costs continue to fall. But this progress will only be maintained if the right policy frameworks are established and maintained. Many renewables no longer require high economic incentives or subsidies. But they do need long-term policies that continue to provide a predictable and reliable market and regulatory framework compatible with societal goals.

  • In our view, energy efficiency, renewables and natural gas are all indispensable elements of a future secure and sustainable world energy mix, and their development and deployment should be promoted hand in hand.

  • Here in Italy, you are already adopting such a comprehensive approach to your energy situation in the national energy strategy, the SEN. It provides a crucially coordinated approach to energy efficiency, the gas and oil markets, and the important role of renewables. I’d like to congratulate you on this approach, which very much mirrors our own recommendations and analysis.
• The other overall conclusion I would like to draw today is about the geo-political dimension. Understanding and reacting to the changing energy landscape is challenging. **It will require new forms of international engagement, dialogue and collaboration** particularly with the major emerging economies, which now play extremely important roles in the global energy scene. For many years the IEA has had excellent relations with these countries on a bilateral basis. And we are now seeking to develop further our relations with key partners under a **new and developing multilateral framework**. Italy has played an important role in that process, providing crucial support to our efforts to remain globally legitimate. Only together can we tackle these challenges.

• Let me just finish by saying how pleased we are to be contributing to the Italian energy dialogue, and how much we appreciate the continued Italian participation in our own work to integrate policy and thinking on the energy market as a whole.

• Thank you all once again.