Good morning ladies and gentlemen,

It is my pleasure to welcome you to the third IEA Unconventional Gas Forum, co-hosted by the IEA and the National Energy Administration of China, with the support of the CNPC Economics and Technology Research Institute. We are truly grateful for the excellent partnership and support that we have enjoyed with the NEA and the Institute in the preparation of this event.

Of course you know that it is no coincidence that this third forum is being held here in Chengdu.

The IEA’s relationship with China has been getting ever stronger over recent years, encompassing engagement on a wide range of issues, from renewable energy to energy efficiency and energy security. To take but a few examples, we have jointly held five workshops on oil security since 2001, and just a few months ago the IEA hosted the first Emergency Response Exercise to be held in China. The topic of today’s Forum is again of vital importance, both for China and for the global energy outlook.

As we all are aware, China is one of the world’s largest resource-holders of unconventional gas. But significant uncertainties remain about the extent to which this resource will be developed. Today’s Forum represents an opportunity to have an informed and frank discussion on these challenges, but also the tremendous opportunities presented by unconventional gas.

We have already seen the progress that has been made, during yesterday’s site visit to the CNPC shale gas drilling site. For me, this site visit was also an opportunity to reflect on the way that technology is shaping our energy future.

We would not be having this conversation today if countries and industry were content to rest on past success. Technological change is constantly opening up new possibilities in the energy sector, disrupting the status quo. This has been abundantly clear in the oil and gas business over recent years, where technologies – of course combined with high prices – have unlocked new types of resources – most notably shale gas and tight oil.

These resources have had transformative effects for energy markets and beyond.

Access to cheap shale gas and natural gas liquids is a key element in the revitalised fortunes of certain energy-intensive industries in the United States. At the same time, a surge in tight oil from North America has contributed to the halving of oil prices since mid-2014. Of course this has come with significant repercussions for economic prospects, trade and fiscal balances across the globe.

Given the recent market trends, much of the focus today is on oil. But in resource terms, the IEA expects that shale gas could play a more lasting role in shaping global energy trends.
This conclusion is based on the size of the recoverable resource base: in terms of energy content, the worldwide resource base for shale gas is almost four times larger than that of tight oil. Shale gas resources are the equivalent of 45% of remaining conventional gas, but tight oil is the equivalent of a much smaller share – less than 15% – of remaining conventional oil.

The boost that unconventional gas can provide to global gas supply could bring a significant number of benefits, not only in terms of diversity and security of supply, but also in reduced energy costs. Where gas replaces coal, there are also significant environmental gains on offer.

**But these gains will be realised only if the world’s unconventional gas resources can be developed profitably and in an environmentally and socially acceptable manner.**

Such conditions cannot be taken for granted. Although shale gas is often thought of as “cheap” because of the way that it has driven down natural gas prices in the United States, this resource is far from easy to produce. The gas is trapped in very tight or low-permeability rock, and producing it efficiently is a challenging and intensive industrial process.

There is also a range of social and environmental hazards that need to be addressed: unconventional developments can have major implications for local communities, land use and water resources. It is difficult to get the regulatory balance right. Overly restrictive regulatory frameworks can limit access or drive up costs, to the extent that operators are prevented or deterred from investing. On the other hand, a failure to address the social and environmental aspects of unconventional gas production can mean poor industry performance, air and water pollution, and ultimately a public and political backlash.

**The IEA believes that the technologies and know-how exists for unconventional gas to be produced safely.**

But a continuous drive from governments and industry is required to ensure the necessary level of environmental and social performance.

To aid policy makers, regulators, operators and others, we produced a set of “Golden Rules” in a *World Energy Outlook* special report published in 2012 – ten principles that can allow for responsible development of unconventional gas and to ensure that producers earn and maintain a “social license to operate”. We also took the initiative to set up an Unconventional Gas Forum, to allow governments, industry and other stakeholders to exchange views on best practice. The first meeting of the Forum took place in Paris two years ago; the second was co-hosted by the IEA and Natural Resources Canada in Calgary last year, and focused specifically on best practices for minimising water use and for protecting water resources from the risk of contamination during unconventional gas production. This year we are delighted to be here in Chengdu to discuss the outlook for China.

The principles which should guide this Forum – inclusion, transparency, and frank exchange – are the same ones which ultimately must guide the wider political and public dialogue about unconventional gas extraction. I urge you to participate with those principles in mind. Indeed, I was pleased to see that the US Government relied on these principles as part of the process it undertook to update rules governing hydraulic fracturing on federal lands. Those rules, which were unveiled on 20 March, appear to share a lot of common ground with the IEA’s “Golden Rules”. This is the kind of concrete action that can result from the seeds planted in today’s meeting.
I trust that, over the course of today’s meeting, we can have an open discussion about China’s achievements with unconventional gas as well as the problems that remain – and the areas where international experience and knowledge might be relevant. With the expertise gathered in this room, this is real opportunity to ensure that unconventional gas development in China moves on a secure and sustainable path; I am sure that all of you here will have contributions to make to that effort.

I look forward to today’s discussion.