

Speech by Eni Chief Executive
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Energy for development

Special contribution in the context of the course in Energy
Economics

Good morning.

Coming here to Eur, we were, as usual, stuck in traffic and I was reflecting on the fact that we have not been able to adapt to change. Choices made many years ago, if not decades ago, continue to condition our daily lives.

The same is true in the energy sector. Certain decisions were taken in the '60s. But in recent years the scenario has changed completely and is the task of all of us to do what we can to adapt.

But let's start from the choices made.

Most probably the lights in this hall and all the other lecture rooms in this university work thanks to gas. In fact, 60% of Italy's electricity is generated by gas and the result is that while when we switch on a light we are actually turning on the gas.

But this is a quite bizarre state of affairs for a country that produces less and less gas. Just as it is very strange that while we have reserves of some 50 billion cubic metres in the upper Adriatic, we can't exploit them because of laws passed ten years ago.

When Italy opted for gas, it was a daring decision. In 2006 every Italian "imported" more than 1300 cubic metres of gas, around double the EU average. But Europe is catching up, and fast.

Gas production in Europe accounts for just 8% of the world total - a figure that is destined to fall if we consider that we have only 1% of the world's gas reserves. But despite this, Europeans have chosen, and continue to choose, to use gas wherever possible.

The electricity sector is the most obvious example: 80% of new electricity generation capacity installed in Europe over the last 10 years is powered by gas. Today 20% of Europe's electricity production is powered by gas, compared with 7% in the 1980s.

The same has happened in the residential sector. In the '80s our homes mainly used petroleum products and one in five homes still used coal! Today none of the boilers of residential buildings are fired by coal and one in two European buildings use natural gas.

Also the industrial sector over the last 25 years has drastically increased its consumption of gas, at the expense of fuel oil and coal.

The combined effect of these choices has been that European gas consumption has doubled in the last 25 years, while that of fuel oil and coal has decreased by 20%. Today, around a quarter of Europe's primary energy requirements are met by gas.

But why do I think that the decision to go for gas was a risky one? Because once you have decided to "go for gas" it is very difficult, in the medium term, to go back. Gas-fired power stations will never be able to run on coal, Gas-powered boilers will never work with fuel oil.

The explosion in gas consumption, in the context of falling European production and modest reserves, has inevitably brought us to a situation in which we are massively dependent on imports.

In fact, today, 60% of the gas consumed in Europe is imported.

Of course, the decision to go for gas has enormous implications. So who was it that decided to go down this path?

The answer is nobody. It was not a political decision, taken collectively in Brussels or some other European capital. It was simply the spontaneous result of a combination of investment decisions taken autonomously by individual investors and consumers.

From the standpoint of the individual investor, the gas option made sense. It was a clean, efficient and economic fuel. Moreover, the alternatives were difficult to pursue. After all, no one wants a coal-fired or nuclear power station in their backyard.

However, the sum of all the decisions taken individually led to a reconfiguration of Europe's energy mix which, in turn, has economic and political implications. Only now that the energy scenario has changed can we see how significant these are.

The alarm bells started to ring on 1 January 2006, when a crisis unfolded between Russia and Ukraine.

And it was a rude awakening. In a flash, it became clear how fragile the balance was. We understood that our gas supplies come from a limited number of producer countries, and pass through a handful of gas pipelines. We also discovered, to our cost, that these gas pipelines pass through other countries and that each of these transit countries, for its own reasons, could seriously threaten the security of our supplies.

And all this on a single day, immediately after the New Year celebrations!

The crisis between Ukraine and Russia is only the tip of the iceberg in the new power relations between producer and consumer countries. And they have the stronger hand because industrialised countries continue to consume more, but also and above all because there are new consumer countries.

In short, the competition to secure gas supplies is destined to become much tougher. In some traditional consumer countries, such as North America, internal production is in decline while demand continues to grow constantly. Moreover, new consumer countries are entering the international gas market, China being the most significant example, that can for Russia - our main supplier - become an alternative market to Europe.

And just to complicate the situation, also the consumption of gas producing countries is increasing at a great rate, with the obvious effect of reducing the quantities available for export. The Middle East, for example, will use an additional 200bn cubic metres of gas by 2020 compared with today, due to pressures from demographic and industrial expansion, but also as a result of the re-injection of gas in oilfields to increase the recovery rate. And with oil prices at around \$100 a barrel, this will remain one of the most profitable uses of gas.

This, therefore, is what has happened: we are no longer sure that we will have the gas we need. Producer countries have realised their bargaining strength and with great satisfaction see a growing number of customers. Customers who, on the one hand, are discussing how to spend and buy less, while, on the other, having an increasing need of both gas and oil.

The problem of security is consequently perennially at the centre of media attention and the focus of political debate. Unfortunately, we are still a long way from a solution.

There is much discussion about countermeasures to be taken, in particular by focusing on the development of alternatives to gas, above all nuclear and renewables.

But while it is true that nuclear and renewables can be part of the solution, it is naive to imagine that they are a complete solution.

Let's start with the nuclear renaissance. It is true that there is great potential in nuclear, given that it can produce safe, abundant and clean energy, But if we wanted to fire even just the incremental energy demand in Europe only with nuclear we would need to build 70 new nuclear power stations, in other words 115 GW of new capacity between now and 2020. And given that over the last ten years, in the whole of the European Union, we have managed to install only 9 GW of new capacity, it's easy to see how desperate the challenge is.

Turning to renewables, the prospects are even less clear. If we wanted to use just wind and solar power to meet Europe's incremental energy needs, we would need to install 15,000 wind turbines - a line from Rome to Beijing - and 50,000 football fields of photovoltaic panels. And all this in just a year!

In reality there is a third option: coal. But here, in Europe we have our hands tied, in the wake of the Kyoto Protocol, regardless of the existing trade-offs between environmental objectives and energy security.

In short, it seems clear that these alternatives will not even be able to cover our incremental requirements for electricity between now and 2020. Consequently, the majority of this growth will inevitable be met by gas.

Ma beware, we mustn't only be concerned about incremental demand. In reality, over the next decade, around 25% of Europe's current installed capacity can be shut down, mostly due to obsolete coal and fuel oil plants and some old nuclear plants.

But what will replace these plants? Given Europe's environmental policies, the difficulty in building new nuclear capacity and the limitations of renewables, it is most likely that a substantial proportion of these new power stations will be gas-fired.

However, replacing a quarter of existing capacity with gas-fired plants will mean consuming an additional 130 billion cubic metres of gas per year.

So, if we add the expected growth in demand to the greater demand that would result from the replacement of old power plants with gas-fired power stations, overall European demand in 2020 risks being 40% higher than it is today.

Over the same period, European gas production is forecast to halve.

This would result in a dramatic increase in the requirements for imports: from the current 300 bcm to more than 600 bcm in 2020.

A truly arduous proposition.

Combining our growing demand to our dependence on imports and fierce competition for supplies, it seems clear that we run the risk of being short of gas in the near future.

But a gas shortage is really too grave a risk to contemplate. For Europe gas means light, heating, industrial production. To be without gas is a risk that we cannot afford to run.

But there is not a single magic solution to avoid such a risk. There are, however, some counter measures that can be taken.

- 1. The first is to ensure that Europe has access to as much gas as possible, and that it should be available where and when needed**

In the first instance we need to reinforce our relations with our usual suppliers. And here I'm thinking of Russia and Algeria. We mustn't forget that Russian gas is much closer to China than to Europe. And in recent years China has been seen to be much more active in reaching long-term supply agreements and MoUs for the construction of new gas pipelines.

We must, therefore, not lose the competitive advantage that we have gained in recent years and strengthen these relationships with new agreements, extending the duration of existing agreements, set up joint ventures, build new gas pipelines of mixed ownership and participate as much as possible in their gas equity.

We also need to expand and diversify our sources of supply, both by pipeline and via LNG.

We need also to minimise transit risks, by diversifying import routes. This is the logic behind the *North Stream* and *South Stream* gas pipeline projects which bring Russian gas directly to Europe.

Finally, we have to improve interconnections within Europe in order to ensure that gas gets to where it is needed, and to invest in storage facilities that will enable us to deal with fluctuations in demand and temporary interruptions in supplies.

2. The second thing we need to do is to reduce the importance of gas in our energy mix

This means a return to betting on nuclear and a re-launch of research into renewables. While none of these can on their own solve in the short term our problems, they remain important pieces of a single puzzle.

Renewables, in particular, may, in the long term, turn out to be of inestimable value. Think of the potential of solar power: to be able to capture a greater proportion of the sun's energy could provide us with a concrete alternative to fossil fuels.

When we examine the alternatives to gas, we mustn't forget coal, which is abundant and widely available. The challenge here is to find an efficient and effective way of capturing and storing the CO₂ emissions that would allow us to make a greater use of coal without endangering the planet.

3. The third thing we need to focus on is energy saving

Energy efficiency is by far the best “alternative” we have: it immediately reduces energy demand, imports, investments and CO₂ emissions. It is immediate, clean and generally cost free. On the contrary, it becomes an economic advantage for consumers.

The potential here is enormous.

And not only in the residential sector, according to the European Commission, we could save the equivalent of 100 billion cubic metres of gas per year. In other words, by become aware of a number of small measures we could save a third of our incremental gas imports between now and 2020.

And some of these measures really are small: just by switching of the stand-by function of our domestic appliances we could save up to 30 TWh a year, the equivalent of a years production of two nuclear power plants.

In the last analysis, to deal with the problem of security of our gas supplies we need to operate along three lines: maximise gas availability, develop alternative energy sources and save as much energy as possible. These are not alternative options, we need to make use of all three of them together.

But we also need to be aware that even if we do all this, we will still be dependent of a limited number of suppliers. Algeria and, in particular, Russia, will continue to be the pillars of our energy security in the coming years.

Just to give you an idea of the extent of the European Union’s dependency on Russian gas, Russia currently supplies 100% of the gas used in Finland, Slovakia, Lithuania, Latvia, Estonia, Bulgaria, Romania and Hungary. It also supplies 80% of the gas imported by Austria, the Czech Republic, Poland and Greece, and 40% of that imported by Germany- a dependence that will rise to 60% - and 30% of that imported by Italy and France. This

situation will not change in the short term. On the contrary, our dependence is likely to increase.

Given these circumstances, it is important for the European Union to establish and safeguard relationships of cooperation with its main suppliers and, especially, with Russia, with which it has obvious geographic, historical and cultural links, links that have been deepened by decades of mutually advantageous commercial relations.

It is precisely on the basis of reciprocal cooperation that the European Union, the member countries and European energy companies, must work to create strong and lasting commercial relations with these countries.

But, unfortunately, on this point I am rather pessimistic. Member states have not given the European Commission the necessary tools to meet the new challenges.

It seems incredible that the European Union, which debates and passes legislation on every aspect of our existence, has not been able to appreciate the transformation that is taking place in a sector of such vital importance to its citizens.

The European Union is concentrating its efforts on defining the details of the rules governing the internal market and not on an effective strategy for foreign energy policy.

There is no consensus on the direction to take and the decision making process is so complex and desperately slow that facts become irrelevant in such a rapidly changing and evolving situation.

I am absolutely convinced that we need to make a sharp about turn. Member states need to give to the Commissioners Piebalgs and Solana the instruments that will allow the European Union to adopt and pursue a really common foreign energy policy. Safeguarding the bases of our energy security is, in fact, one of

the most important challenges facing us, both individually and - perhaps more importantly . collectively.