

European Autumn Gas Conference

Key note speech: European Market Perspective – Setting The **New** Scene

Ladies and gentlemen,

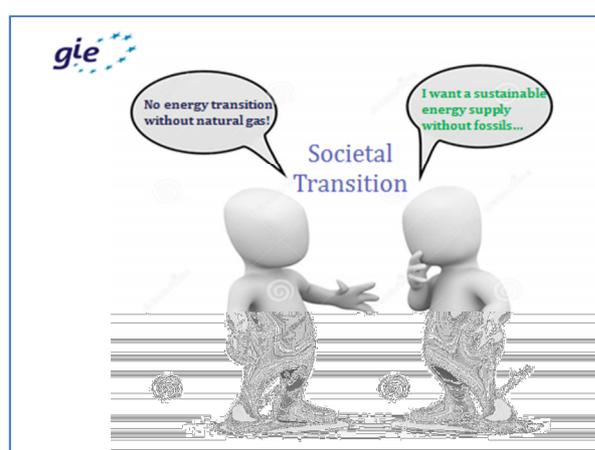
As you can see I am deviating from the mandate of the organizers of this conference by inserting the word 'new'. Because we feel a 'new' scene is emerging.

The gas sector in Europe is going through interesting times. The partnership between gas and renewables is not yet materializing. And the often cited triple-A qualities of gas – gas is abundant, affordable and acceptable - are seriously under question.

So we have doubled and redoubled our efforts to try to convince our stakeholders that natural gas is the cleanest fossil fuel, that it is much cheaper than energy from renewables and that it is the natural partner for the renewables because it can act as a backup.

Unfortunately, the only ones we seem to be convincing are ourselves...

Partly as a result of the social media revolution, we have seen the emergence of political movements focused on accelerating the transition to renewable energies and getting rid of fossil fuels. Information spreads rapidly and groups of people can very quickly mobilize themselves, thereby shifting the balance of power from traditional environmental and political organizations to impromptu virtual gatherings of individuals that share a particular view or ideal. **Energy transition is clearly also a societal transition.** And the gas sector has so far failed to come up with the new approaches and new strategies to address this adequately. Paradigm shifts: we will need a new generation of young people to help us reinvent ourselves in order to stay meaningful.



More than ever public opinion matters and we will need to understand the views and values of these new powers and focus on the contribution that gas, and gas infrastructure, can make in *their* world. Understanding that perspective automatically means that we should not focus just on gas. After all, who needs gas? No one! We need a warm home, we need the ability to cook our meals, we need our energy to be there when you press a button or flip a switch and we need a modest energy bill. **Natural gas should not be the starting point of discussion, but a preferred outcome.** Our starting point should be the end consumer and how each energy carrier can optimally contribute to delivering energy to him or her.

Gas and gas infrastructure delivering optimal contribution to our energy needs

- Gas not the starting point of discussion, but a preferred outcome
- Maximize potential of renewable gases

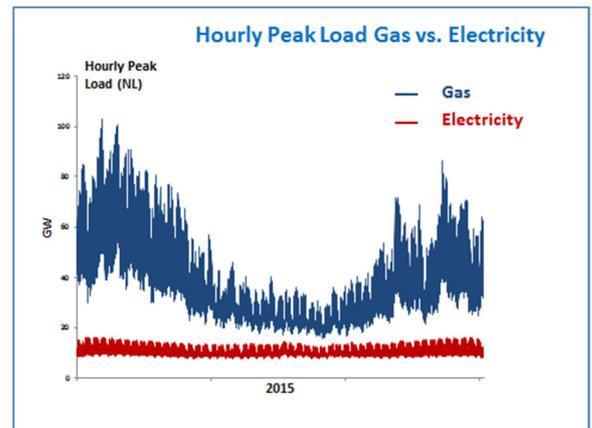
Tailor-made Solutions

And I deliberately use the word energy *carrier* here. Increasingly, in the future, natural gas will be mixed with renewable gases produced from biomass or from renewable electricity. And just like you cannot say that electricity is by definition ‘gray’ or ‘green’, the new gas will also not by definition be ‘fossil’ or ‘renewable’, it will be ‘all of the above’.

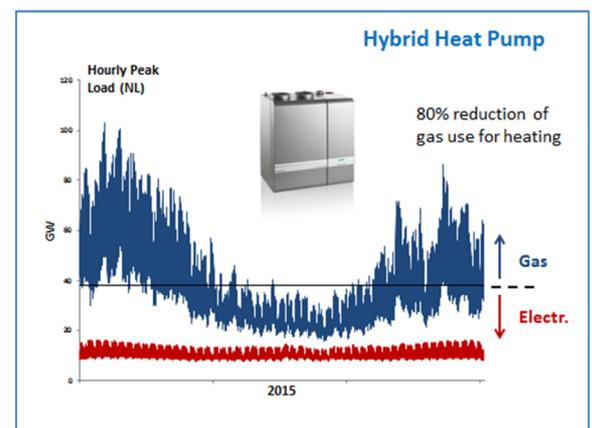
And for gas and gas infrastructure to play an important role in the future energy system, we will need **innovation**. Innovation in the way we do business, in the way we engage with stakeholders, in our markets, in the services we offer, in the infrastructure and in the actual product itself.

As time is limited, I will be able to give you just two examples.

The first concerns how we look at gas in heating our homes. In particular here in Northwest Europe, and the Netherlands is at the forefront, we are very used to natural gas being used to heat our homes. At the same time we need to make our heating system CO2 neutral. The obvious solution to turn to a completely all-electric system would require huge investment to increase the capacity of the system. Just look at the peak capacity that is provided by the current gas infrastructure and compare that with the electricity system. Replacing all that capacity by electricity only will make for a very expensive energy system.

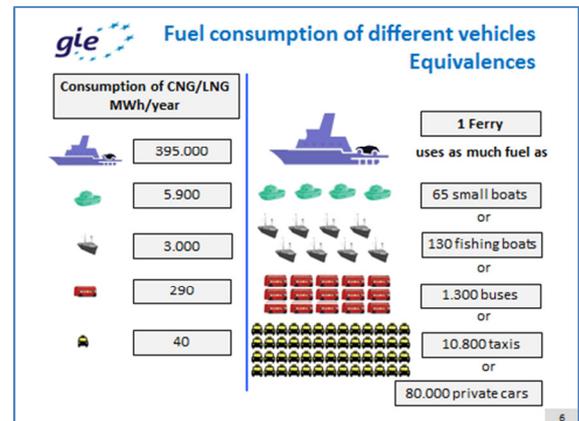


So should we just keep our very efficient gas condensing boilers and do nothing? Well, no. Just as we developed the condensing boiler in the eighties, we should look to further innovations to bring down the gas consumption for heating our houses. There is a solution that combines the best of both worlds. Especially in existing houses, we can install a ‘hybrid heat pump’, a combination of an electric-driven heat pump and a gas condensing boiler. The heat pump will run under normal conditions, which will be most of the time. Under peak conditions, however, the gas condensing boiler will kick in to assist the heat pump and provide the



peak load. This will prevent the massive investment of a system based on electricity alone, but will at the same time drastically reduce the volume of gas being used, in this example by 80%. And this much-reduced volume then opens the door to replacing the remaining gas in heating in the longer term completely by renewable gases and achieve a fully CO2-neutral heating system.

Another example, and one that I am personally very excited about, concerns the use of gas as a fuel in transport. The transport sector is truly one of the last frontiers, as it is very difficult to replace the heavy fuel oil and diesel that are being used especially in heavy trucks and in ships. Batteries may work fine in a Tesla, but for a sea-going ferry, cruiseship or containership they are not very useful considering the amount of fuel being used.



And yet, the emissions from the heavy transport sector pose a formidable environmental challenge. Did you know that the 16 largest ships emit as much sulfur as all the cars in the world combined? And that the soot emitted by vessels using the northern routes through the arctic, that ironically are now emerging as a result of climate change, that this soot is deposited as black particles on the snow, making it melt twice as fast as otherwise? Did you know that the fine particles that are emitted by these ships are viewed as a major health risk? That just in the Netherlands the number of people that die prematurely as a result of emissions of fine particles is estimated to be between 12 and 24 thousand per year?



But also here, gas can offer a solution. By using LNG as a fuel we can all but eliminate most of these harmful environmental effects and even reduce CO2 emissions, by up to 25% using natural gas, by even more if we start adding renewable gases to the mix.

And we are making a lot of progress in this area. Just a few weeks ago IMO, the International Maritime Organisation, has slashed the allowed sulfur allowance from 3.5 to 0.5%. And the infrastructure to allow vessels to bunker LNG are being built.

Here in the Netherlands for example, Gate LNG terminal has recently commissioned a dedicated new harbor and loading facilities for small ships that want to take in LNG, for example bunker vessels that can supply fuel to other ships. Shell has been the launching customer for this development and it is a sure sign that they also firmly believe in the future of LNG in transport. But not just Shell. Also other major companies such as Gazprom for example, and ENGIE. And this is not just



happening in the Netherlands but all over Europe. **I am not exaggerating when I say that this is a quiet revolution, and we should be very proud that gas and gas infrastructure can make this happen.**

To conclude: the author Robert Graves once said: The future is not what it used to be. Ladies and gentlemen, dear colleagues, I am convinced that the future of gas looks downright exciting! And as we all know, the future is not a gift but an achievement and the best way to predict the future is to invent it. If we put our minds to it, as well as our hearts, and change our game and provide society with exciting new solutions, the gas sector can make a huge contribution. We in Gas Infrastructure Europe are ready to play our part, what about you?

