

# GAS IN THE “ACCELERATED” TRANSITION CONTEXT

BY RAQUEL MARTÍNEZ FARRERES

As stated on Sep. 17th, the European Parliament wants gas projects in regions heavily reliant on coal, lignite or oil to be eligible for funding from the EU Just Transition Fund (JTF) if they meet certain sustainability conditions. The fund will help to mitigate the socio-economic repercussions of the transition to a carbon neutral EU on the bloc's most vulnerable regions.

Negotiations between the parliament, commission and European council on the JTF are expected to start as soon as possible and budget has not been agreed at this moment. But to benefit from the JTF, gas projects should meet several conditions in order to accelerate the full phase-out of coal, lignite, peat or oil while encouraging the use of clean hydrogen, biogas and biomethane among others.

This materializes the European intention concerning the decarbonisation and acceleration of the energy transition, ensuring the presence of natural gas in the process. Reading between the lines, there is a technological commitment to develop other sources "not relevant" till now.

Obviously, these "new sources of energy" will need appropriate economic and regulatory support, to take advantage of the current context of technological optimism.

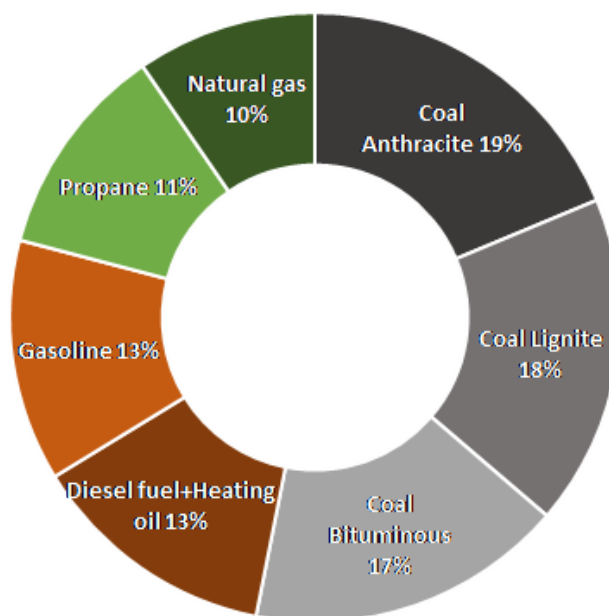
But their development raise inherent questions about whether natural gas is a solution to the emissions problem or just an intermediate step towards achieving decarbonisation.

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## The current role of natural gas in the energy transition environment

The use of natural gas for energy production produces fewer CO<sub>2</sub> emissions and fewer air pollutants compared to coal or petroleum products to produce an equal amount of energy.

GRAPH 1  
PERCENTAGE OF CO<sub>2</sub> EMISSION BY FUEL  
TYPE IN THE U.S.



SOURCE: EIA (SEP. 2019).

In the graph above, the case of the U.S., where the use of natural gas produces about 10% of total CO<sub>2</sub> emissions, figure much lower than the 54% of total coal.

This "clean combustion" feature of natural gas has helped to increase its use for electricity generation and transport fuel, especially in developed countries, where regulation has supported its use as countries have intensified efforts to meet climate obligations.

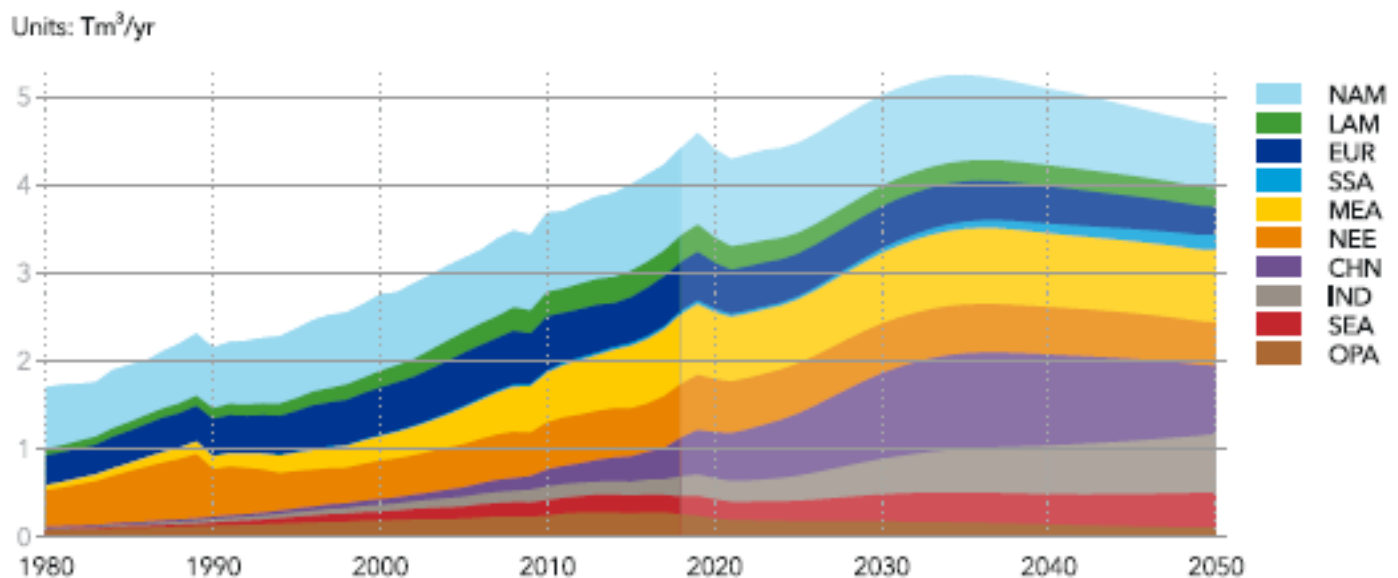
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Despite this, natural gas has seen its reputation tarnished due to the release of methane into its value chain. In fact, this has always happened but recently, it has become controversial to the public eye.

On top of that, the geopolitical tensions emerged between key countries are jeopardizing the viability of large gas infrastructures (Nord Stream 2 project, stagnated due to U.S. -imposed sanctions and reluctance shown by Ukraine).

The current situation is extremely complex for gas with markets dealing with Covid-19, which has worked as an accelerator of the transformative process and has led to revisions of the long-term trends expected for the natural gas market. It is now estimated that natural gas will start contracting by 2035, suffering a faster decline than contemplated before the pandemic.

GRAPH 2  
EXPECTED EVOLUTION OF DEMAND FOR  
NATURAL GAS, BY REGION



SOURCE: EIA(HISTORICAL UNTIL 2019), DNV  
(FORECASTS)

## The role of medium and long-term gas: solution or intermediate step?

Until Covid's eruption, the "energy transition" assigned to natural gas the role of "transitional energy". It means that gas was considered "the bridge of union" between the known world to be left behind (based on economies dependent on fossil fuels generating polluting emissions) and the desired world (the one to be achieved in 2050, decarbonised, sustainable and why not, based on circular economies).

But the expansion of the Covid has significantly "cut" the length of this "bridge", at least on paper, according to policies that supranational entities want to implement "shaking" gas hegemony to the detriment of other energy sources (hydrogen, biogas...).

However, the path already walked cannot be forgotten. Investments in infrastructure and the high production costs of these new energy sources make possible to think of the use of gas as a "destination", rather than a "bridge". But to achieve this, it is necessary: to decarbonise the gas value chain, convert CH<sub>4</sub> (methane) into hydrogen or other carbon-free gases by capturing and storing CO<sub>2</sub> (CCS) and of course, have a clear regulation and investment availability.

Transforming the gas value chain to obtain other energy sources such as hydrogen could be a low-cost solution for decarbonizing heating systems or supplying energy to the industry by using existing infrastructure.

But given the current situation, many analysts do not see gas as the most viable long-term solution in comparison with the momentum experienced by renewable electricity. The main reason is that lower costs of existing gas infrastructure would be offset by energy production costs, which still are very high.

In addition, much of today's gas infrastructure will need to be replaced by 2050, so there is a clear loss of the competitive advantage of gas relative to the cost of grid replacement, compared to new power grid constructions.

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According to some analysts, natural gas could be positioned between the most carbon-intensive coal and nuclear/renewable energy in the current range of energy sources. To estimate how emissions could impact on gas price, sensitivity tests have been run by them, integrating different assumptions regarding natural gas and carbon prices, and different interactions with the development of renewable technologies.

DNV found that “50% reduction in the price of gas would increase demand by 22%. However, a relative equivalent increase in price would result in a 15% drop in gas demand by 2050”. On the other hand, progress in the learning curve of solar and wind techs plus the reduction of its costs, would have limited effects on reducing gas demand (power plants).

### Gas in a decarbonized energy system

From my point of view, there would be two important roles to play by natural gas in a context of “accelerated transition”:

- As catalyst to reduce coal dependence in emerging countries (India and other Asian countries), where electricity demand grows rapidly while renewables does not. making impossible to replace coal.
- When combined with other technologies, working as "zero emissions" energy source.

Until now, natural gas has played a concrete role in solving problems related to air quality and reducing CO2 emissions. The switch coal to gas will keep contributing to reduce emissions as the energy transition evolves, but industry needs to address the problem of methane emissions to make gas a viable, cost-effective solution.

Sooner than later, the gas market will need its own decarbonisation strategy to maintain its presence in the market.

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