

**25%** ↓  
Repsol will reduce its greenhouse gas (GHG) emissions by over 25% by 2020, compared to 2005.

**OGCI**  
The Oil and Gas Climate Initiative is a CEO-led initiative which aims to show sector leadership in the response to climate change.

**\$1 billion**  
OGCI announced an investment of \$1 billion over the next ten years, to develop and accelerate the commercial deployment of innovative low emissions technologies.

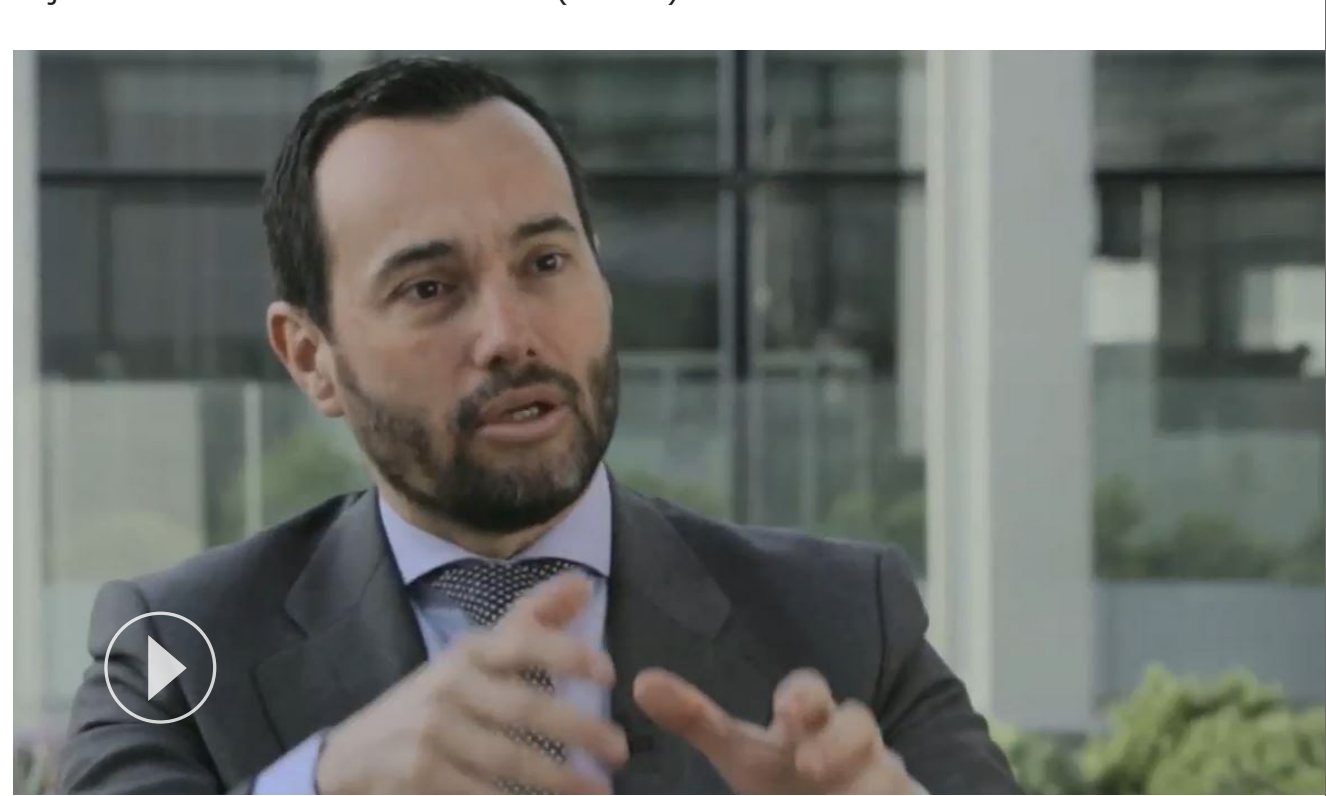
OGCI has identified two initial focus areas: accelerating the deployment of carbon capture, use and storage; and reducing methane emissions from the global oil and gas industry in order to maximize the climate benefits of natural gas.

## Technology to fight climate change

Repsol policies against climate change will allow the Company to reduce its greenhouse gas (GHG) emissions by over 25% by 2020, compared to 2005. These best practices have led the company to be invited to the Oil and Gas Climate Initiative (OGCI), a project by 10 large oil companies that make up one-fifth of global production and will invest 1 billion dollars over the next decade to take a leap forward in technology to fight global warming.

The OGCI will focus its collaborative work on developing CO2 capture and storage strategies and controlling methane emissions, areas with great potential to reduce emissions in which the oil industry can contribute its knowledge and experience.

For Jaime Martín Juez, Corporate Director of Technology and Energy Ventures, it is "an unprecedented initiative because it is the first time that a group of companies from the oil and gas industry will take a step to be part of the solution, not a passive player, and lead technological change that will allow the objectives made in the Paris summit (COP21) to be attained."



Video – Jaime Martín Juez, Corporate Director of Technology and Energy Ventures of Repsol

### OGCI: 1 billion dollars to fight climate change

The OGCI is led by the CEOs of the 10 participating companies, including industry giants like Saudi Aramco, the Chinese company CNPC and the largest European companies. "We cannot wait any longer if we would like for the global temperature at the end of the century to not increase by more than 2 °C compared to the preindustrial period", says Jaime Martín.

The current GHG emissions trends indicate that said target is far off and a very strong global commitment will be necessary in order to reach it. According to the International Energy Agency (IEA), the hydrocarbon industry contributes over half of the primary energy needed by the global economy and emits around 5% of total GHG. The use of oil and gas in power generation, transport, and industry represents another 32%.

OGCI member companies' efforts are not new. Over the last 10 years they have reduced emissions by about 20% on average, but "our ambition is to contribute to an additional reduction of 1 gigaton (Gt) in the next decade."

"It's not about declaring intentions, we want to effect real change," continues Martín, and to do so the OGCI has committed an investment of 1 billion dollars in cutting-edge technology that will become part of each company's existing reduction programs. "We would like to plant the seed of greater investment throughout the value chain in this sector and in others," including support of technology start-ups to incubate solutions in the long term.

### Repsol, a consistent trajectory

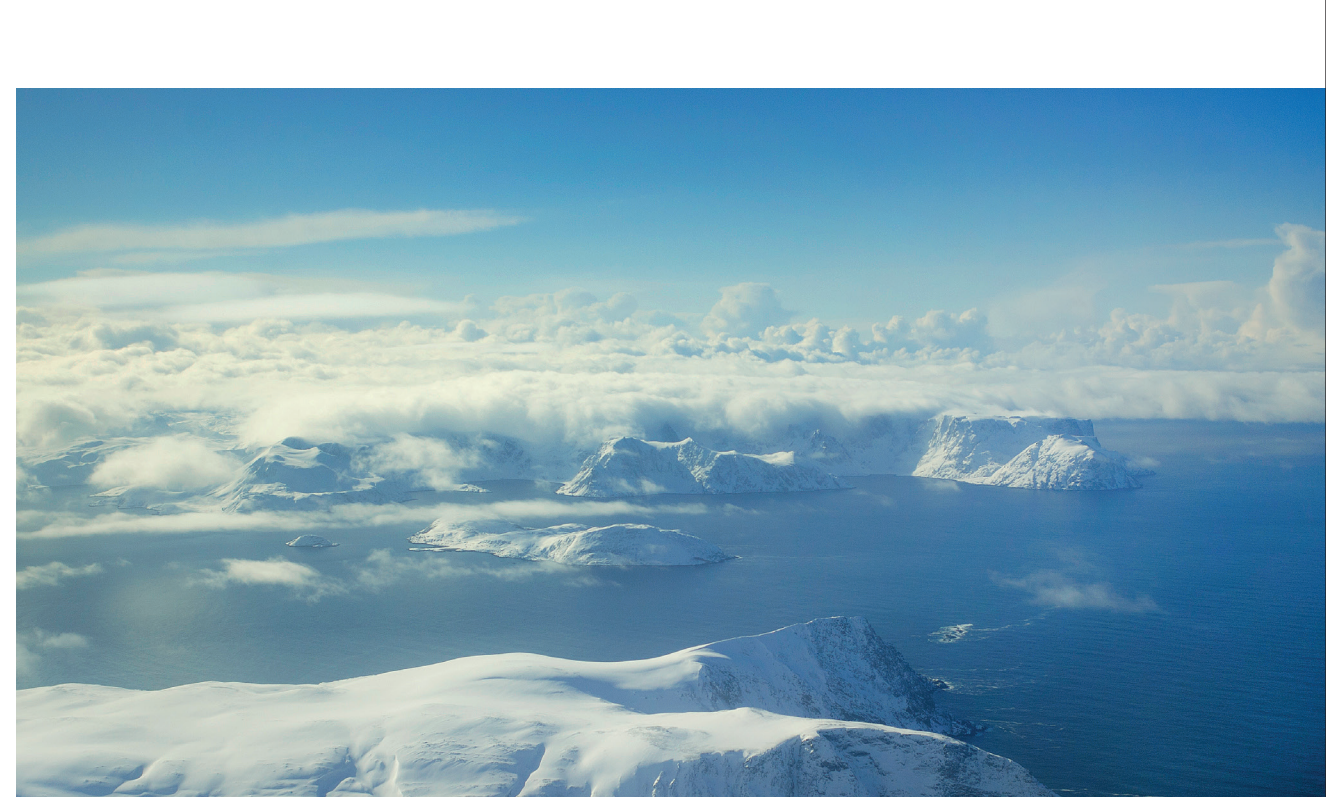
Repsol, which already became the first oil and gas company in the world to state its support of the Kyoto Protocol, has gained entrance to this club against climate change thanks to the transparency and results of its energy efficiency programs that were implemented more than 10 years ago. On an emissions inventory of 20 million tonnes of CO2, "we are going to reduce it by 6 million by 2020."

This is a commitment that translates into an investment of 500 million euros and is broken down annually into 150 specific actions for energy integration, consumption optimization, and saving 380 kilotons of CO2 per year to reuse gases that used to be burned in flares.

Energy efficiency measures will continue to be the main source of reductions until the middle of the century, "but a time will come when there are no more advancements to be made and the industry will have to commit to technological developments that will take over. Being members of the OGCI allows us to share that challenge."

Repsol's contributions to the OGCI include its work in areas like using captured CO2 to manufacture other products with greater added value, "a very novel line where we are pioneers." In a demonstration plant located in Puertollano, Repsol is making advances in research and development to start using CO2 as a raw material in the production of plastics "and convert it into a solution instead of a problem."

The Spanish company will also share its experience in formulating efficient fuels associated with very different engines, a crucial sector because transport consumes one-fifth of the world's primary energy, a percentage that will grow with the vehicle fleet.



### Driving CO2 Capture and Storage

"The solution to climate change will be technological or it won't happen," continues Martín, "and for that we'll need to make technological industries that are still in the demonstration stage a reality," like CO2 Capture and Storage (CAC), without which it will be very difficult to overcome the 2 °C challenge. Today there are 32 large CAC projects underway throughout the world, demonstrating that it is a viable and safe alternative, but their storage capacity, some 46 million tonnes per year, still represents less than 1% of the volume the IEA estimates will be necessary.

"The OGCI may function well as a catalyst for these efforts" and its experts are assessing up to 200 new technologies in the hopes of "the landscape changing radically" in the next five years. The first CAC projects associated with industries with high CO2 emissions, like coal thermal power stations.

One of the obstacles to overcome is the lack of more specific knowledge about the storage capacity existing on the planet. This is why the OGCI is collaborating on preparing a geological atlas that will indicate where to store CO2 safely.

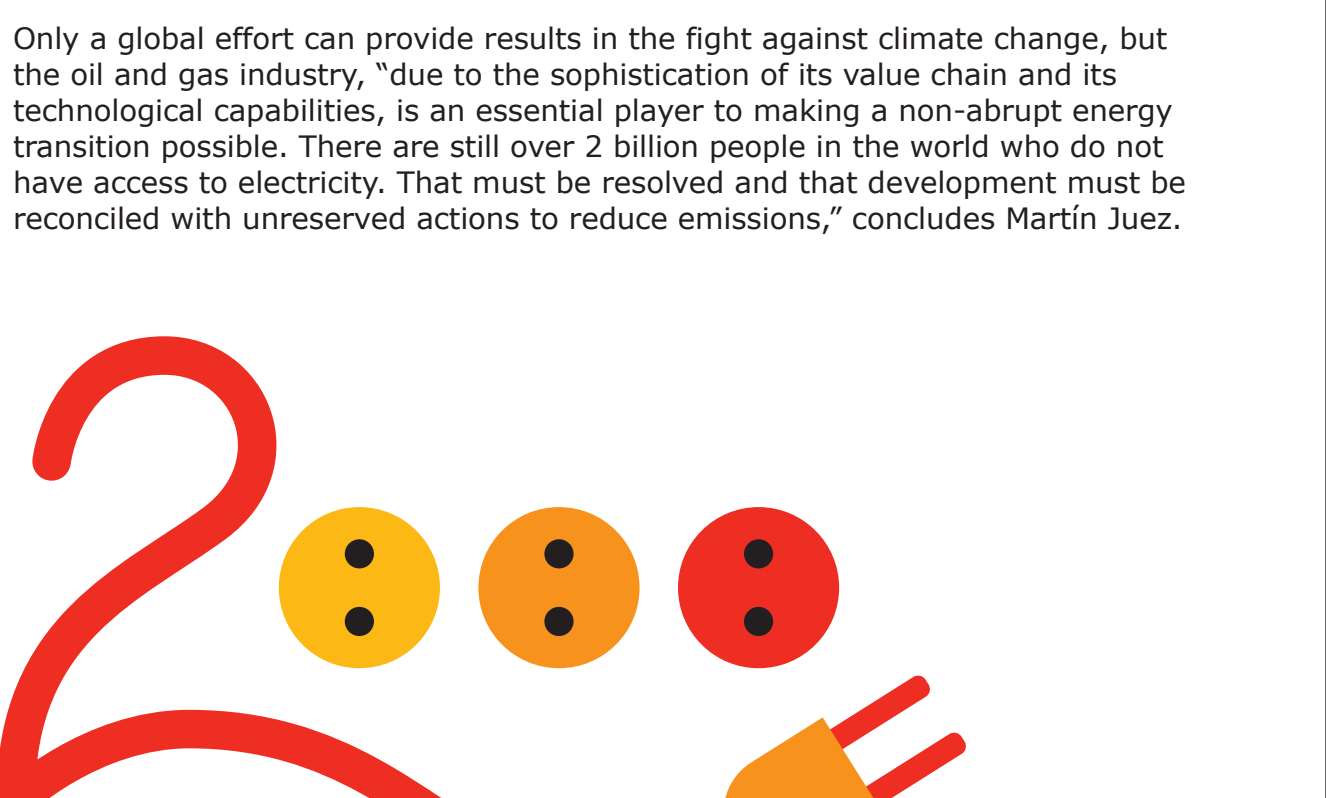
Economic incentives are also key, with the most global CO2 market possible rewarding the most efficient companies. Today the cost of storing one tonne of CO2 is about 60-80 euros, while on the European carbon market one tonne has a value of five or six euros. "We have to close that gap and garner support from governments so that this technology is deployed."

### Natural gas for a cleaner mix

OGCI members also share their commitment to natural gas as a central fuel in the transition toward a lower carbon energy model. Gas is already a very solid alternative in fields like power generation, where it emits half of the carbon and technologically supplements renewables, where it is a portfolio. "At Repsol we are well-positioned for this change," with a portfolio where 65% of production comes from gas and 75% of reserves are gas.

This commitment "has a side that we need to work on: methane emissions." The OGCI will allocate one-third of its investments to progressing on early detection and correction of these emissions, which are usually due to small leaks distributed in ducts, tanks, and valves. Solutions to this challenge, such as continuous monitoring with drones equipped with infrared cameras, are being tested.

Only a global effort can provide results in the fight against climate change, but the oil and gas industry, "due to the sophistication of its value chain and its technological capabilities, is an essential player to making a non-abrupt energy transition possible. There are still over 2 billion people in the world who do not have access to electricity. That must be resolved and that development must be reconciled with unreserved actions to reduce emissions," concludes Martín Juez.



**10 years**

In 10 years the OGCI would like to achieve a joint emission reduction of one gigaton

## Puertollano

Repsol researches how to use captured CO2 to manufacture plastics in its Puertollano refinery



**CO2**

"We would like the CO2 Capture and Storage landscape to change radically in the next five years"

**2 billion people**

Over 2 billion people do not have access to electricity. This must be resolved and that development should be reconciled with emission reduction

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