

BREAKING \_\_\_\_\_  
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## GTL Technology Offers Viable Solution for the Billions Russia is Losing in Flared Gas

*Technology start-ups and Russian oil companies are partnering up to turn flared gas into an economic benefit through gas-to-liquid generation*

By Ilya Golubovich



Satellite data from the National Oceanic and Atmospheric Administration (NOAA) [shows that Russia flared](#) 35 billion cubic meters of gas in 2011 and is on par with the amount they've previously burned into the atmosphere. This represents the most globally.

This number may be much larger, as it assumes oil companies are reporting accurate figures, which typically isn't the case. [Nigeria comes in second, and Iran and Iraq follow with about 10 billion cubic meters.](#) Flared gas

is the means of burning off the gas associated with the petroleum crude oil extraction process.

Russian oil companies are currently utilizing 55 percent of their associated gas. This means that the rest is burned on top of a vertical tower, or in a pit as waste or unusable gas. Most of the gas is flared because the oil fields are in areas lacking pipelines or infrastructure to process and transport the gas. The lost associated gas represents a potential \$4.6 to \$7.1 billion market in processed products, [according to the World Bank estimates.](#)

These products would include those that oil companies are already creating with the gas that they choose to capture: processing natural gas to be transported via pipeline or burned in nearby power plants for electricity generation. But much of the exciting market potential lies in refining the gas and converting it into liquid fuel — a process known as [gas-to-liquids \(GTL\).](#)

Why is Russia the biggest flared gas perpetrator? The [World Bank sites](#) “weak legislation, an ineffective regulatory system, limited midstream infrastructure, low domestic hydrocarbons prices, and effective monopoly positions in the gas processing and transmission industries.”

GTL technology would circumvent many of these challenges, while also offering a product with the lowest carbon footprint. GTL results in a synthetic crude oil that can then be mixed with petroleum

crude oil. The GTL product also achieves a higher volume of usable crude as it doesn't contain undesired chemical elements such as sulphur.

Most Russian oil companies are exploring GTL in remote locations and in small to medium oil fields where some infrastructure difficulties are most apparent. Traditionally, GTL has been used at large-scale facilities, but in the last decade, advancements in the chemical process make GTL economically viable at small scale, as well. There are currently a handful of GTL start-ups, both Russian-based and foreign, that are leading the charge in Russia: [CompactGTL](#), [Velocys/Oxford Catalyst](#), [Infra Technology](#) and [Gazohim](#). In the next few years, the market will see the development of pilot production facilities, and in the next five, it's expected that there will be global-scale production out of Russia.

The lag in capturing excess gas is in fact on the radar of the Russian government, but their efforts haven't produced the intended results. In 2009, Prime Minister Vladimir Putin announced measures that would go into effect in 2012 that would enact serious fines if more than 5 percent of excess gas was flared, versus the approximately 45 percent of all associated gas that's currently flared. Historically, oil producers have been focused on oil production, and not on utilization of excess gas, because it didn't have the economical draw.

In spite of tightening governmental regulation, Russian oil companies have been unable to utilize the 95 percent of the flared gas. However, oil companies are beginning to pay closer attention to the flared gas and the economic loss it represents, as the country's peak oil turning point has already come and gone. There aren't many ways left to grow the production base for oil in Russia.

This is pushing them to GTL technology, which can achieve intensive growth. Capturing this potential cooperation between the technology providers is key, because of the complexity of the chemical process. Different companies tend to focus on refining certain steps in the process, and through collaboration, they'll be able to produce the most efficient and highest quality fuel.

If the existing companies and Russian oil companies continue to make progress with GTL technologies in Russia, the market can expect to see \$1 to \$2 billion of the total market potential to be reached in the next five years.

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