



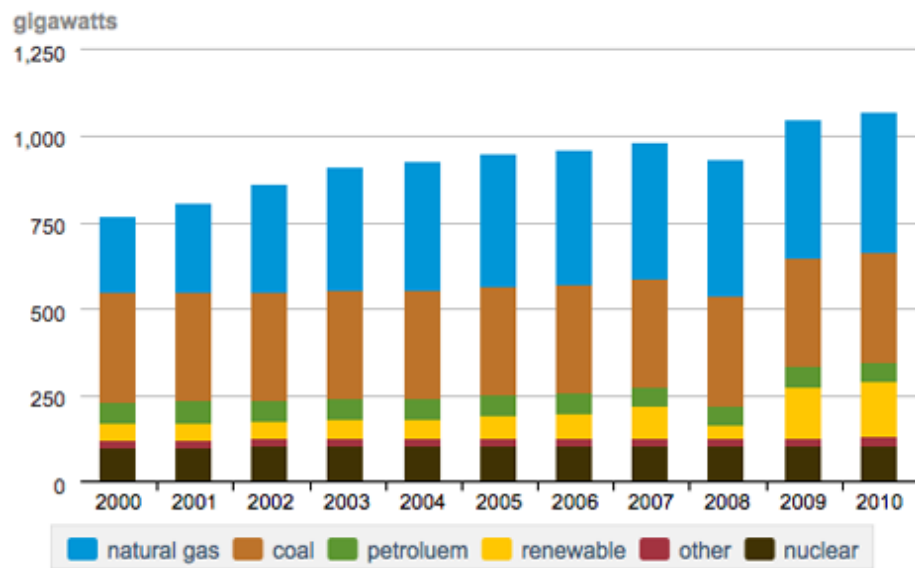
## Tech Talk - Future Natural Gas Production from Western Siberia

Posted by [Heading Out](#) on February 27, 2012 - 10:24am

Topic: [Supply/Production](#)

Tags: [bovanenkovo](#), [gazprom](#), [germany](#), [natural gas production](#), [nord stream](#), [united kingdom](#), [yamal](#) [[list all tags](#)]

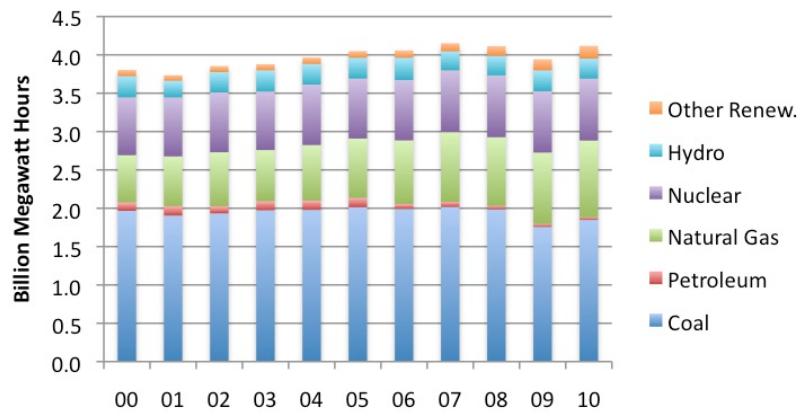
The bitterly cold weather in parts of Europe over the past few weeks has had an impact on power consumption. Russia saw the highest demand yet for electricity at [156.96 Gigawatts](#), while at the same time [reducing the volumes](#) of natural gas that it is supplying to Europe. To put the Russian power level in perspective, while there has been an increase in power generated from natural gas in the United States, the capacity to generate [more than 1,000 GW](#) still relies considerably on coal and nuclear power, although renewable sources are becoming more prominent.



U.S. Energy Information Administration, Form EIA-860, Annual Generator Report

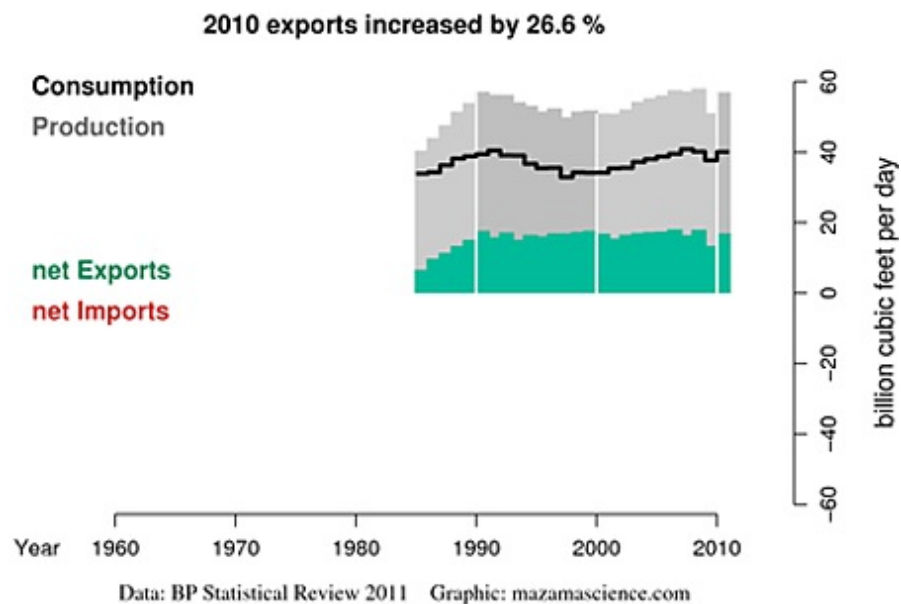
### *Sources of Electrical Power in the United States ([EIA](#))*

The above plot, however, shows capacity rather than actual contribution, and I am grateful to Gail, who took the time to develop a plot of actual use that shows how the different sources actually contribute. I am putting in both, since each addresses a different point in comparison with Russian production.

**US Electricity Generation by Source**

*U.S. Electricity as supplied, by source ([Gail Tverberg](#))*

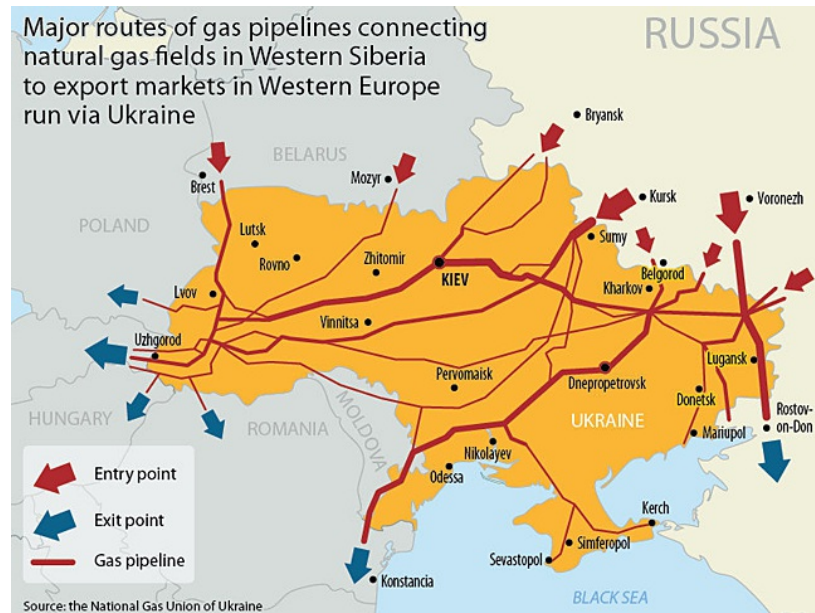
In contrast to the US, some [56.2% of the total energy in Russia comes from natural gas](#); oil produces some 18.3%, coal 14.4%, nuclear power is 5.3%, and hydropower is at 5.6%. This high demand for natural gas is compounded by the sales which Russia makes to Europe, where it provides about [25% of the market supply](#), down from the 27% levels a couple of years ago. And Gazprom is further marketing its product to India (through LNG sales) as well as to China, where it will now be in competition with natural gas piped from Turkmenistan (which used to have Gazprom as its only customer). (note that the identifier has been corrected to reflect that this is total energy not just electrical.)



*Russian natural gas production, consumption and exports ([Energy Export Databrowser](#))*

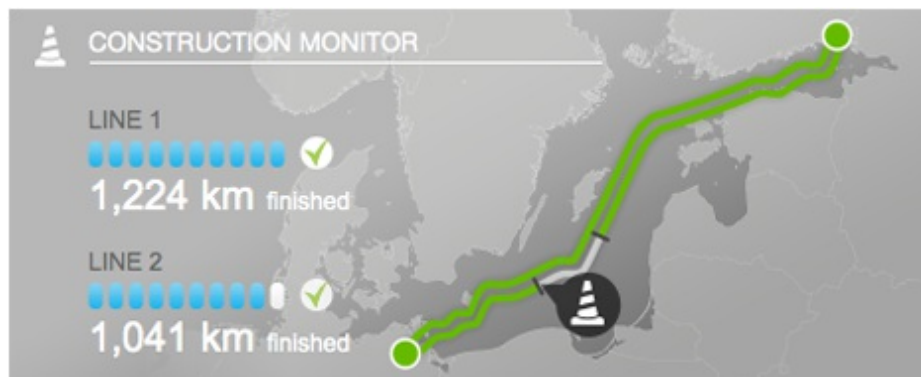
Natural gas is more often supplied on demand rather than from large storage facilities. So when local demand in Russia recently rose due to the severe cold spell, there was less available for Europe, and supply fell, for example, by [30% in Italy](#). Though having been that route before, European nations have learned to keep some reserve available for these situations. Gazprom has also seen the need for more storage, and now plans on investing some 2-300 million euros to [double the volume available in gas reservoirs](#) around Europe. During the peak cold spell, Europe was using [around 17 bcf per day](#) up 20% from the average demand during 2011.

The problems that Gazprom faces are two-fold: the first is to produce the gas, and then the second is to ensure that the customer has enough available when needed. And at the moment (to address the latter problem first) one of the critical issues is that the gas must pass through Ukraine.

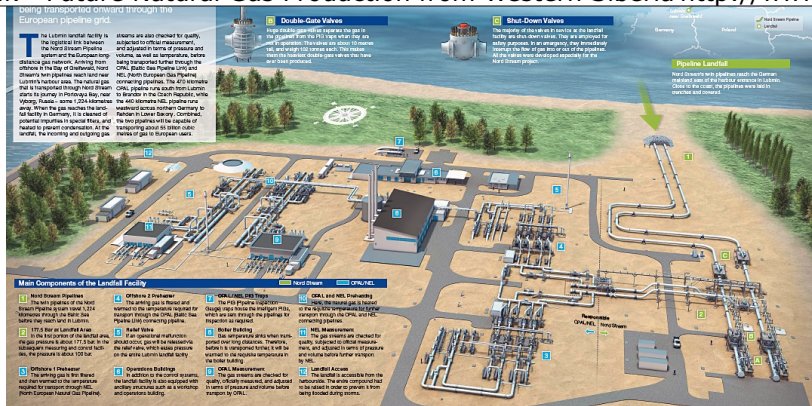


### Major routes of gas pipelines feeding Europe from West Siberia ([RIANovosti](#))

Unfortunately, Ukraine and Russia have an uncomfortable history in regard to the passage of natural gas through the country, and because of the cold this year, this is no different, with [disputes over volumes contracted for](#) and used still continuing. However, the Nord Stream pipeline has now [completed the first pipeline](#) to Germany, bypassing Ukraine. The second lacks only one section and will be installed this year. The twin pipelines will carry the equivalent of 5.3 bcf/day into Lubmin in Northern Germany, with delivery from Portovaya Bay in Russia already flowing through the first pipeline, starting on 8 November, 2011.



### Nord Stream pipeline path through the Baltic, showing remaining construction ([Nord-Stream](#))



### Landfall operations in Germany ([Nord-stream November 2011 newsletter](#))

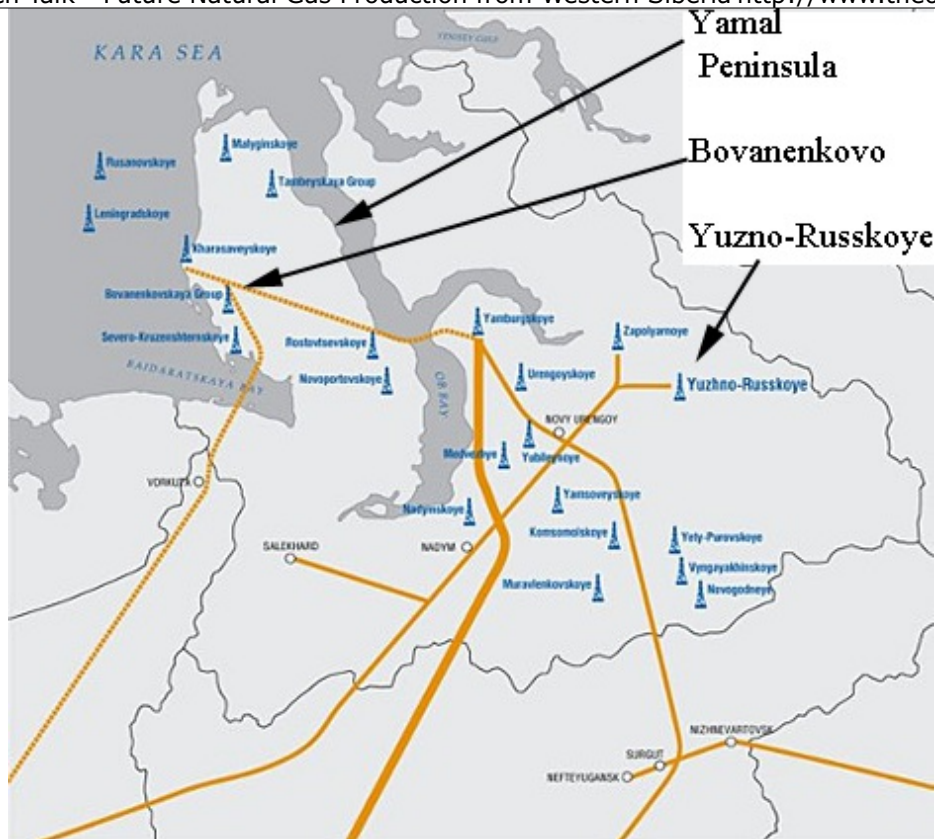
The Russian end of the pipeline connects into the [Gryazovets-Vyborg pipeline](#), which brings the gas from the producing fields.



### The Gryazovets-Vyborg pipeline bringing natural gas from Western Siberia ([Gazprom](#))

The gas that comes through the pipeline is from Novy Urengoy in Western Siberia, where some 74% of Russian natural gas is being produced, at present. This is where the [Yuzhno-Russkoye gas field](#) is located, with current estimated reserves of 21 Tcf of natural gas. The gas is currently coming from some 142 wells spread over an area of 424 sq miles, with the field producing 2.6 bcf a day. The gas field came on line in 2007 and it takes 10 days for the gas to make the trip.





*Fields feeding into the supply pipeline to Germany ([Gazprom](#))*

It should be noted that the pipelines going up into the Yamal Pensinsula are still being developed and the gas fields of that region are not therefore fully available, though drilling is taking place.



*Drilling at 70deg00'01.85" N 70deg00'02.05" E (kim46 at Google Earth)*

There are a number of fields in the Peninsula that are still to be fully developed, including Bovanenkovo, and these will provide some of the reserves that Russia will need as their main

It is one of 11 natural gas and 15 oil and gas condensate fields in the Peninsula, with aggregate reserves, for just the three largest fields (Bovanenkovo, Kharasavey and Novoportovskoye) of [208 Tcf of natural gas](#), 730 million barrels of condensate, and 1.6 billion barrels of oil. At present, the first 1.5 bcf/day production is scheduled to begin operation in the 3rd quarter of this year. A railroad is being connected into the region in order to maintain supplies and provide equipment for further construction.

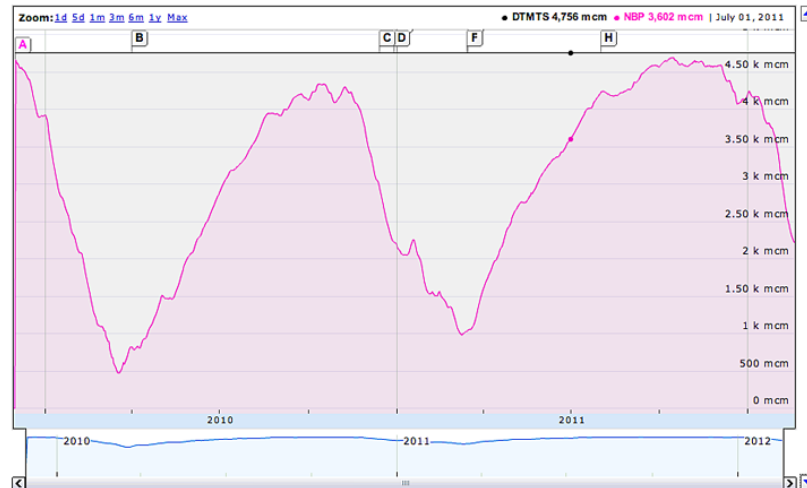


*Current Gas flaring at 71deg03'32.30" N 67deg25'23.41 E (DDS7 at Google Earth)*



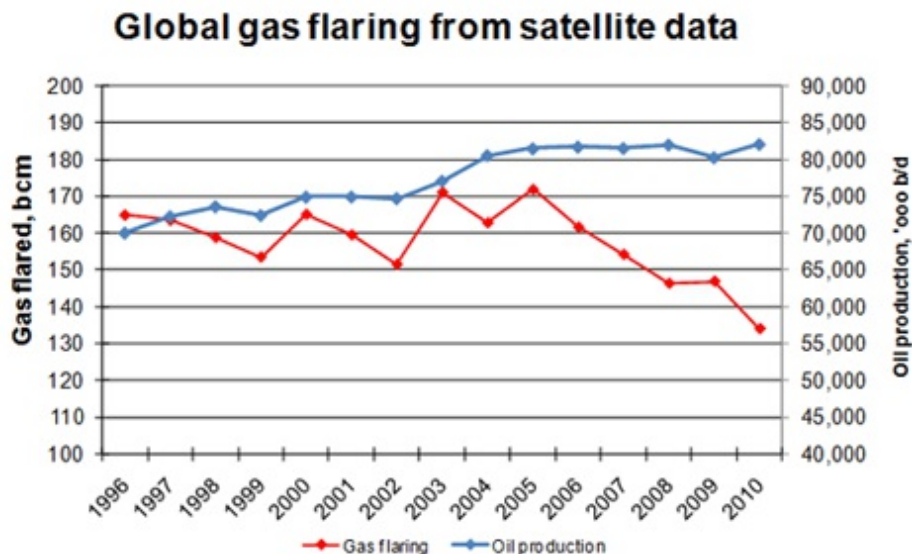
*New construction at Bovanenkovo ([Gazprom](#))*

With the growing prospects of additional natural gas from Yamal, and with further facilities being built in Europe for storage to get through inclement weather, it does appear that Russia will be able to supply Western Europe with natural gas for at least the next 30 years that they are predicting. Although should demand rise, as it well might with the closure of nuclear and coal-fired power stations, then the reserves will be drawn down considerably faster. At present, the



*Natural gas stored in the UK (on 19 Feb 2012) ([Gas Infrastructure Europe](#)) (as an example).*

This is while Russia is [still flaring](#) considerable volumes of natural gas that cannot be otherwise used. And while the trend is going down ([by about 15%](#)) it still has a way to go. There just aren't that many folk in Siberia that appreciate the slightly warmer air that is being generated. And while that part of the news is good, the failure to date of the Polish trials to find commercial reserves of [natural gas in domestic shale deposits](#) may mean that Gazprom's market will continue, since the presence of as much as 187 Tcf of natural gas in the Polish shales does not do anyone any good if it cannot be viably recovered.



*Global gas flaring volumes ([The World Bank](#))*



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