



Potential Gas Committee



Potential Gas Agency
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Press Release

For release on October 19, 2021, 11-00 EDT

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POTENTIAL GAS COMMITTEE REPORTS NO GROWTH OF NATURAL GAS RESOURCES IN THE U.S.

GOLDEN, COLORADO — The Potential Gas Committee (PGC) today released the results of its latest biennial assessment of the nation’s natural gas resources, which indicates that the United States possesses a total mean technically recoverable resource base of 3,368 trillion cubic feet (Tcf) as of year-end 2020. This is 6 Tcf or 0.2% less than the amount of gas assessed in the previous period (from year-end 2018). This slight decrease breaks a trend of seven consecutive record-high resource evaluations.

“Although there is a minor decrease in total gas resources, the PGC confirms that the U.S. has an abundance of natural gas. These resources are present in various reservoirs both onshore and offshore,” said Dr. Alexei V. Milkov, Professor of Geology and Geological Engineering and Director of the Potential Gas Agency (PGA) at the Colorado School of Mines. PGA provides guidance and technical assistance to the PGC.

The PGC’s year-end 2020 assessment of 3,368 Tcf includes 3,212 Tcf of gas potentially recoverable from “traditional” reservoirs (conventional, tight sands, carbonates, and shales) and 157 Tcf in coalbed gas reservoirs. Compared to year-end 2018, traditional resources decreased by 6 Tcf, while coalbed gas resources did not change.

Accompanying Table 1 summarizes the national resource assessment for year-end 2020 and acknowledges changes from the previous year-end 2018 assessment.

PGC assesses technically recoverable resources and does not consider a specific price or schedule for the discovery and production of gas. The U.S. Energy Information Administration (EIA) of the U.S. Department of Energy (DOE) estimates the proved gas reserves, which are additional to the resources assessed by PGC. When the PGC's assessments of technically recoverable resources are combined with EIA's latest determination of proved reserves (495 Tcf of natural gas as of year-end 2019), the U.S. future supply of natural gas stands at a record 3,863 Tcf, a modest increase of 25 Tcf (<1%) over the previous evaluation (Table 1).

Dr. Milkov highlighted that, "Market conditions and the COVID epidemic resulted in less drilling activities and relative lack of progress with delineation and characterization of U.S. gas resources in 2020. The gas resources slightly decreased and the future gas supply (resources plus reserves) slightly increased. Although there is a break from the long period of significant increases in gas resources that we observed in 2006-2018, it is important to emphasize that the U.S. still has a strong supply of natural gas for many years to come."

PGC reports the potential resources at the national level as well as for seven individual geographic areas and 90 geological provinces. Such detailed area-level and province-level results offer great value for purposes of analysis, planning and exploration.

The Atlantic Area ranks as the country's richest resource area with 39% of total U.S. gas resources, followed by the Mid-Continent with 18%, the Rocky Mountains with 17%, and the Gulf Coast (including the Gulf of Mexico) with 16%. Changes in the total assessment from year-end 2018 to year-end 2020 arose primarily from the evaluation of recent drilling, well-test and production data from these four areas.

Mid-Continent and North Central assessments of traditional gas resources decreased by 23 Tcf (3.7%) and 2 Tcf (10.5%), respectively. The Gulf Coast Area had a modest overall increase of 23 Tcf (4.5%). Changes in the remaining areas are minor (Table 2).

The importance of shale gas in the USA is evidenced by the fact that the PGC's mean total assessed shale gas resource of 2,130 Tcf for year-end 2020 accounts for approximately 63% of the country's total potential resources. The growth of shale gas resources from year-end 2018 to year-end 2020 was 23 Tcf (1%).

PGC's assessment results are presented in the report *Potential Supply of Natural Gas in the United States (December 31, 2020)*. The first chapter of the report includes a complete review of the national aggregated mean value assessment statistics (summarized in tables and figures), together with an area-by-area comparison of assessment results for year-end 2018 and 2020 and decennial changes in area-level assessments from 2010 to 2020. The second chapter examines the 2020 evaluations at the area and province levels and discusses the factors behind the changes in assessments between 2018 and 2020. Also included are graphs for each area that track historical trends in the Committee's "most likely" (non-aggregated) assessments since

1984, as well as trends in the aggregated mean values since 1990. The concluding chapter presents definitions and details of the PGC's resource assessment methodologies, as well as statistical tabulations of all non-aggregated area- and national-level assessments.

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Details of the Potential Gas Committee's Natural Gas Resource Assessment (December 31, 2020)

The PGC reports its biennial potential gas resource assessments in three categories of decreasing geological certainty - Probable, Possible and Speculative. For each category, a minimum, most likely and maximum volume is assessed in each of 90 onshore and offshore provinces in the Lower 48 States and Alaska. The category and total mean values shown in Table 1 below were computed by statistical aggregation of the minimum, most likely and maximum value distributions for each category and for all provinces combined. This procedure allows for more direct comparison of PGC's assessments with those made by other organizations.

The PGC's assessments are not static. Based on new exploration results, drilling and production information and various other data that become available, PGC members may reclassify resources at the province level from one category to another and to proved reserves.

Table 1. Summary of year-end 2020 national-level resource assessment and comparison with the year-end 2018 assessment.

Resource Category	Mean Values (rounded), trillion cubic feet (Tcf)		Change from 2018 to 2020	
	2020	2018	Tcf	%
Traditional Gas Resources:				
- Probable resources (current fields)	1,126	1,120		
- Possible resources (new fields)	1,351	1,376		
- Speculative resources (frontier)	735	722		
- Total	3,212	3,218	-6	-0.2
Coalbed Gas Resources:				
- Probable resources (current fields)	15	15		
- Possible resources (new fields)	47	47		
- Speculative resources (frontier)	96	96		
- Total	157	157	0	0
Grand Total Potential Resources	3,368	3,374	-6	-0.2
Proved gas reserves (EIA)	495*	464*	+31	+7
U.S. Future Gas Supply	3,863	3,838	+25	+0.7

Notes:

* Total gas (dry and wet), latest available figure is for year-end 2019.

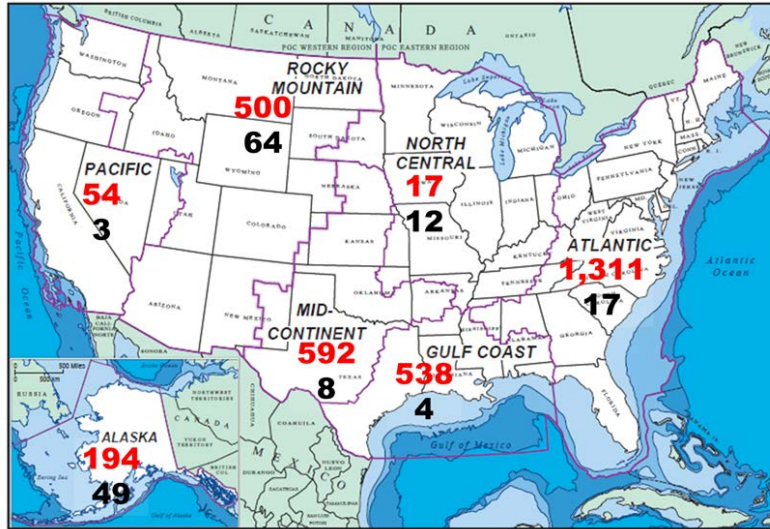
PGC's 90 geological provinces are grouped into seven geographic assessment areas. Table 2 compares the mean values of total traditional gas resources for these areas for year-end 2020 and year-end 2018.

Table 2. Summary of year-end 2020 area-level assessment of traditional gas resources (conventional, tight sands, carbonates and shale reservoirs) and comparison with the year-end 2018 assessment. The values are rounded. This Table does not include coalbed gas resources.

Assessment Area	Mean Values (rounded), trillion cubic feet (Tcf)		Change from 2018 to 2020	
	2020	2018	Tcf	%
Total Traditional Gas Resources:				
- Atlantic	1,311	1,311	0	0
- Mid-Continent	592	615	-23	-3.7
- Gulf Coast (incl. Gulf of Mexico)	538	515	+23	+4.5
- Rocky Mountain	500	502	-2	-0.4
- Alaska	194	194	0	0
- Pacific	54	54	0	0
- North Central	17	19	-2	-10.5
Total U.S. Traditional Gas Resources	3,212	3,218	-6	-0.2

Figure 1 shows the assessment areas and summarizes the results of year-end 2020 assessment for both traditional and coalbed gas resources.

Figure 1. PGC assessment areas and the results of year-end 2020 assessments for mean traditional (red values) and coalbed (black values) gas resources (rounded mean values, Tcf).



All resource values reported above are mean values. However, the PGC assessment of potential natural gas resources is probabilistic, and Table 3 shows the full range of assessed resources with associated probabilities.

Table 3. Probabilistic assessments of potential natural gas resources of the U.S. as of year-end 2020. P95 represents a 95-percent probability of at least the amount tabulated, and other P values are defined similarly.

Resource Category	Total Potential Resources (Tcf, rounded)					
	Min	P95	P50	Mean	P5	Max
Total U.S. Traditional Resources (Conventional / Tight / Shale)	2,467	2,807	3,196	3,212	3,667	4,144
Total U.S. Shale Gas Resources	1,416	1,731	2,116	2,130	2,581	2,982
Total U.S. Coalbed Gas Resources	103	130	158	157	182	204
Grand Total U.S. Resources	2,650	2,959	3,354	3,368	3,830	4,263

How to Obtain the Potential Gas Committee Report

Orders for the PGC’s report, *Potential Supply of Natural Gas in the United States (December 31, 2020)*, may now be placed with the Potential Gas Agency, Colorado School of Mines, Golden, CO 80401-1887. The cost of the report is US\$375 (plus applicable sales tax for Colorado orders). All purchasers will receive both the printed report and a digital version (PDF file) of the document.

For additional information about ordering the new and previous reports, please contact Dr. Alexei Milkov, Director, at the Potential Gas Agency, telephone 303-273-3887, fax 303-273-3574, or e-mail: amilkov@mines.edu.

This press release and the accompanying slide presentation are available for viewing and download at the PGC website, <http://www.potentialgas.org>.

About the Potential Gas Committee

The Potential Gas Committee (PGC) consists of ~80 knowledgeable and highly experienced volunteer members who work in the natural gas exploration, production, transportation and distribution industries and in technical services and consulting sectors. The PGC benefits from the input of respected technical advisors and observers from federal and state government agencies, academia, and various industry and research organizations in the United States. Although the PGC functions independently, the Potential Gas Agency at the Colorado School of Mines provides the Committee with guidance, technical assistance, training and administrative support, and assists in member recruitment and outreach. The PGA receives financial support from prominent E&P companies, gas pipeline companies and distributors, trade associations and individuals.

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