The Past: Production

Annual coalbed methane gas production data through 1985/1986 was obtained from the US Bureau of Reclamation in its capacity as a major producer company. Data for 1987 were not available for West Virginia and Pennsylvania in the 1986 annual report, so data for those states were not available. The cumulative CBM gas volumes for each state were calculated by adding up the volumes reported by each basin located within that state. Total CBM gas volumes for each state were computed with the CBM basins aggregated together whereas most of the Lower 48 States CBM basins were aggregated by economic region. Alaskan CBM basins are not aggregated. Given their relatively small areas, the Raton, Hanna-Carbon, Powder River, and Black Warrior basins were combined and shown as a single basin. The most obvious result of this data aggregation is the large increase in reported CBM production from 1987 to 1988.Tier 2 CBM production volumes are comprised of the Raton, Uinta, Centennial, Appalachian, and San Juan CBM Basins. The cumulative CBM volume can be further broken down into the interpretation of the Tier 2 basins.

The graph for the Tier 3 basins (0.5 - 5 BCF/year, top one on right) shows many “Tier 3” basins have seen a steady increase in CBM production over the last 2 decades. The Appalachian, Oriskany, and Loyalsock is a basin with declining production since the late 1970’s. The fourth graph (bottom one on right) displays the four smallest CBM production basins which comprise Tier 4 (<10 million cubic feet of CBM gas/year (MMCF/year)). There are no declines in CBM production shown in this time frame. Tier 4 CBM data is shown annually since 1990 for only three CBM basins plus the Great Plains CBM basin, which has been aggregated to show the production in the Tier 4 category.

The Present: Reserves

Proved reserves are the quantities of gas that geologic and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions.

The cumulative CBM reserves of the United States are distributed by geographic region. Central Appalachian dominates the graph with 35%, but note that Alaska is comprised of multiple known CBM basins.

The Future: Resources

Recoverable resource estimates of coalbed residual gas and these volumes, which are potentially recoverable resources, are determined by engineering calculations. They have not yet been discovered or developed, and are not included in proved or estimated resource categories. These CBM resource estimates are from Potential Supply of Natural Gas in the United States, Office of Natural Gas Analysis, 2006. The map at the right displays the various CBM resource estimates for the United States. The red layer displays the highest estimate of potential CBM resource, the orange layer displays the next highest estimate of potential CBM resource, and the yellow layer displays the lowest estimate of potential CBM resource.