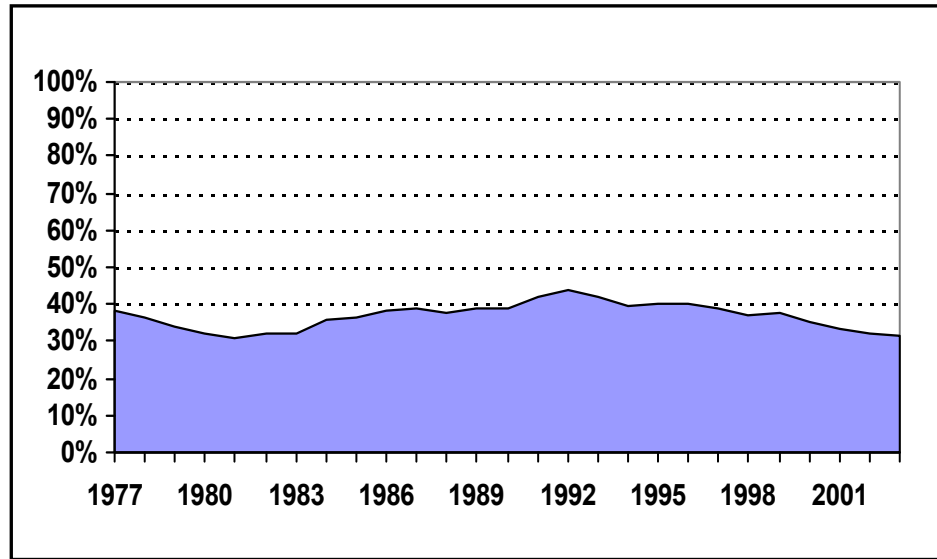


## 3.2 Production of Other Energy Resources

### 3.2.1 Petroleum Crude Oil

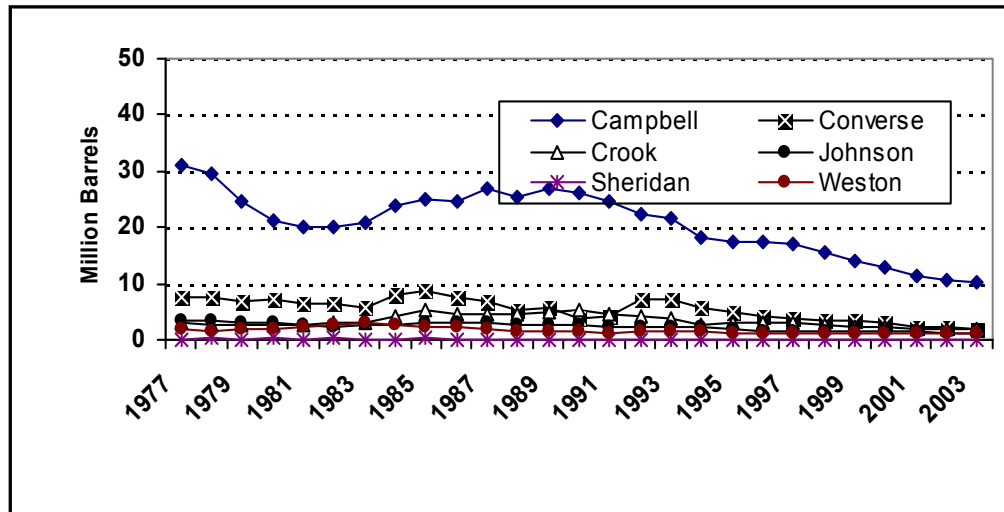
Petroleum crude oil also has been a major driver of development in the PRB. Over the last 25 years, the PRB has produced between 30 and 40 percent of the total oil produced in Wyoming (Figure 3-7).



Source: WTA 1977 – 2004; Wyoming Oil and Gas Conservation Commission (WOGCC) 2003.

Figure 3-7 PRB Oil Production as a Share of Statewide Production (1977 – 2002)

Campbell County has produced most of the PRB oil. From a high of 20 to 30 million barrels per year in the 1970s, production in the county had fallen to about 10 million barrels per year in 2002, as shown in Figure 3-8.



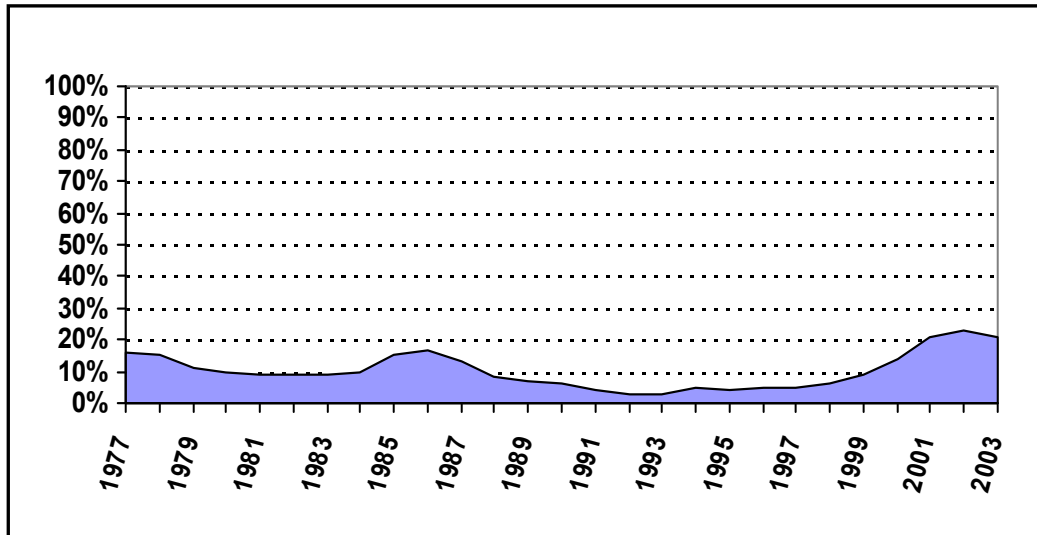
Sources: WTA 1977 – 2004; WOGCC 2003.

Figure 3-8 Oil Production by County (1977 – 2003)

## 3.2 Production of Other Energy Resources

### 3.2.2 Natural Gas

Although substantial, the PRB's share of statewide natural gas production has been less dramatic than its share of coal and oil. As shown in **Figure 3-9**, the PRB's share of total Wyoming gas production had been below 10 percent from the mid-1980s until recently, when the CBNG boom drove the basin's share above 20 percent.



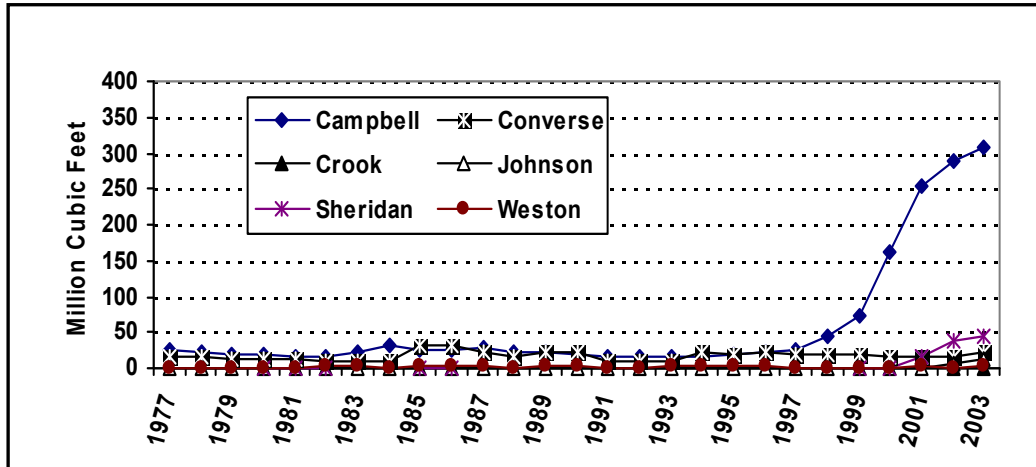
Sources: WTA 1977 – 2004; WOGCC 2003.

**Figure 3-9 PRB Gas Production as a Share of Statewide Production (1977 - 2003)**

From 1977 through 1997, most gas produced in the PRB was from conventional sources. During that period, the PRB produced on average approximately 7 percent of the total natural gas produced in the state (**Figure 3-9**). Since 1998, when CBNG gas production in the PRB increased dramatically, the PRB has averaged approximately 17 percent of statewide gas production.

As shown in **Figure 3-10**, Campbell and Converse counties produced most of the natural gas in the PRB between 1977 and 1997. In 1998, CBNG production in Campbell County began to increase dramatically, followed by less dramatic increases in Sheridan County in 2000 and Johnson County in 2002.

### 3.0 Description of Current Social and Economic Conditions

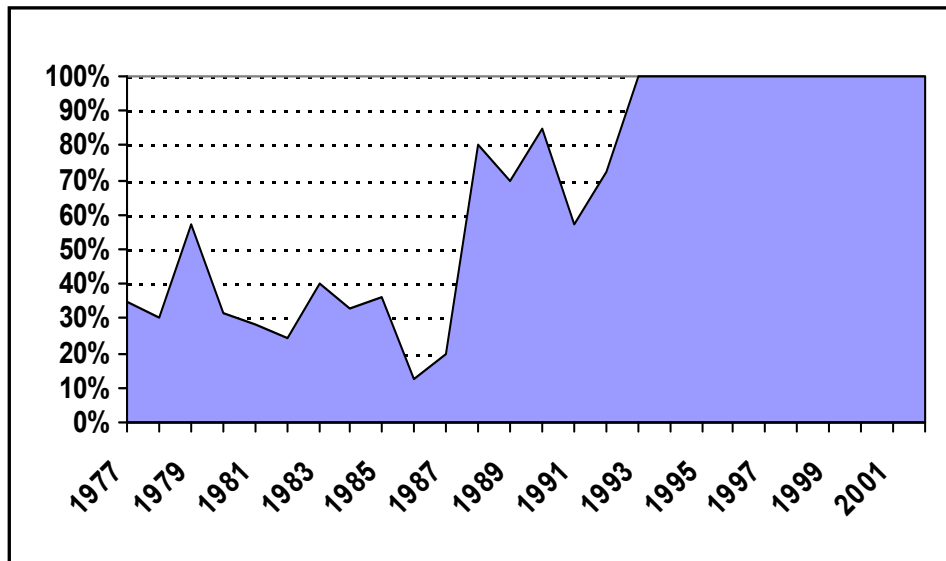


Sources: WTA 1977 – 2004; WOGCC 2003.

Figure 3-10 Annual Gas Production by County (1977 - 2003)

### 3.2.3 Uranium

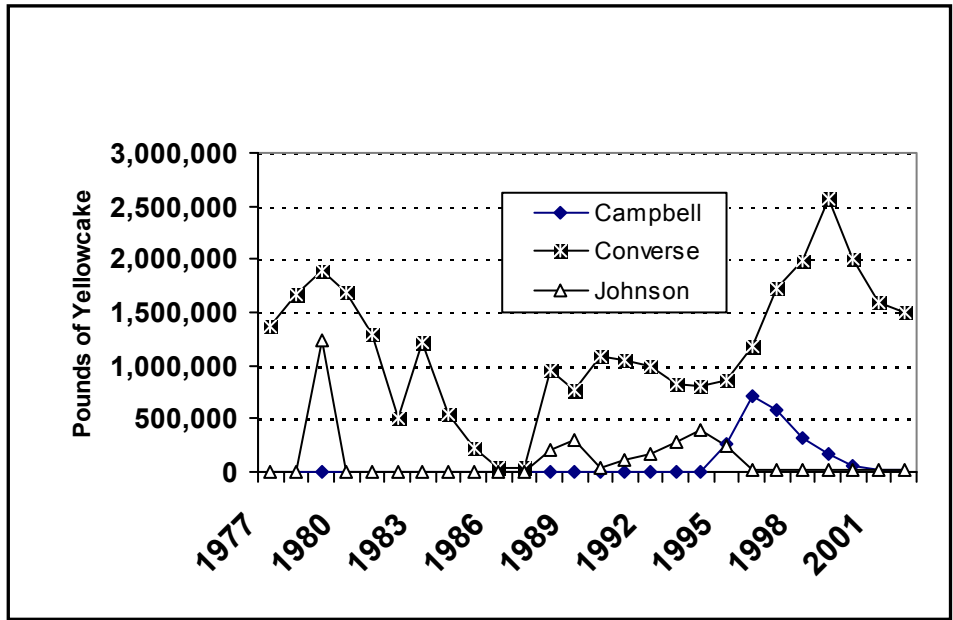
Uranium at one time was an important part of the state’s economy and seen as a vital component of the nation’s energy future. Demand for uranium has, however, declined sharply in the wake of the Three Mile Island accident, the post-Cold War environment and environmental concerns regarding the long-term disposal of spent fuel from nuclear reactors. Today, uranium is a smaller contributor to Wyoming’s energy economy, but production from Wyoming is now centered in the PRB (Figure 3-11). Most of the uranium in the state currently is produced in Converse County (Figure 3-12). All of the existing production comes from in situ operations, which is a process to extract the uranium without excavation of the ore bodies (Wyoming Mining Association [WMA] 2003).



Source: WTA 1977 – 2004.

Figure 3-11 PRB Uranium Production as a Share of Statewide Production (1977 – 2002)

### 3.2 Production of Other Energy Resources

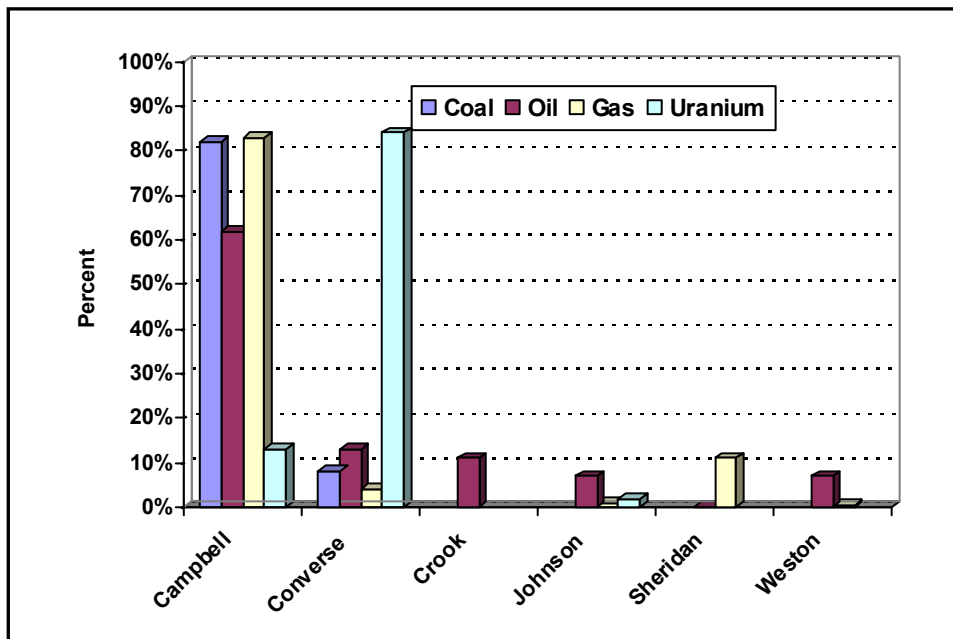


Source: WTA 1977 – 2004.

Figure 3-12 Annual Uranium Production by County (1977 – 2002)

#### 3.2.3.1 Energy Resources by County

Energy commodity production varies across the counties in the PRB (Campbell, Converse, Johnson, and Sheridan), both in volume and energy commodity produced (Figure 3-13).



Source: WTA 2004.

Figure 3-13 Share of PRB Energy Production by Commodity Type and County

### 3.0 Description of Current Social and Economic Conditions

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#### **Campbell County**

Campbell County and the City of Gillette have been at the center of PRB energy development. The county has been the center of successive energy booms for almost 50 years, since the first major oil strike at the Belle Creek field during the mid 1950s. A major oil strike at the Hilite Field in 1967, development of 9 large-scale coal mines during the 1970s and 6 additional coal mines in the 1980s, construction of multiple electric power generating units east of Gillette beginning in the 1960s, and a CBNG boom beginning in the late 1990s have resulted in long-term growth for the county. In 2003, Campbell County accounted for 92 percent of the coal produced in the PRB, 62 percent of the oil, and 79 percent of the natural gas (including CBNG). In 2002, in situ production by COGEMA Mining from ores located in Campbell County accounted for 1 percent of the uranium produced in the PRB and the state; the county averaged about 13 percent of the uranium produced in the state between 1995 and 2002<sup>3</sup>. Campbell County also hosts the Wygen, Wyodak, and Neil Simpson Nos. 1 and 2 coal-fired power plants (totaling 599.7 megawatts [MW] nameplate capacity) and two Neil Simpson gas turbine power plants (totaling 80 MW nameplate capacity), with a combined total of 679 MW (USDOE-EIA 2004b).

The period of energy development between 1950 and the present generated a corresponding level of ancillary development in Campbell County and the PRB. The Burlington Northern and Santa Fe and Union Pacific railroads expanded their rail facilities and added employees, rolling stock, and maintenance facilities. Heavy equipment companies and other mine and oilfield vendors have developed large regional facilities in the county. Housing and commercial infrastructure was developed to accommodate the work force and population growth associated with energy development. In addition, public facilities such as schools, water and sewer systems, streets, an airport, a regional hospital, recreation centers, and numerous other public facilities were constructed, improved, and expanded during the last 50 years to keep pace with population growth.

This economic activity has resulted in jobs for Campbell County residents, residents of surrounding counties, and people living in Casper, Cheyenne, and elsewhere throughout the state.

#### **Converse County**

Energy resources in Converse County include the Antelope and Dave Johnston (now in reclamation) coal mines, Dave Johnston electric power generating station (four coal-fired units totaling 816.7 MW nameplate capacity), and oil and gas development. In 2003, the Antelope Mine accounted for 8 percent of the coal produced in the PRB. Converse County accounted for 12 percent of the oil and 5 percent of the natural gas production. The vast majority of uranium produced in Wyoming has come from Converse County, which accounted for about 97 percent of total statewide uranium production in 2002 and averaged about 84 percent between 1995 and 2002.

Converse County and its communities also are affected by energy resources located outside of the county. A number of workers employed at coal mines in southern Campbell County live in Douglas and Glenrock and commute daily to work. Recently, several natural gas pipelines have been

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<sup>3</sup> This production was part of the total output reported for COGEMA's Irrigay and Christensen mines, the surface facilities of which were located in Johnson County.

## **3.2 Production of Other Energy Resources**

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constructed across the county, and a number of natural gas pipeline construction workers established temporary residences in Douglas, living primarily in recreational vehicles at local campgrounds and at the state fairgrounds. Glenrock and Rolling Hills serve as bedroom communities for some Casper-based oil and gas workers. Converse County and its municipalities have been actively pursuing coal-based industrial development in recent years.

### **Crook County**

Energy production in Crook County includes oil and natural gas. In 2003, about 11 percent of the oil produced in the PRB came from Crook County, but less than 1 percent of the natural gas. Those percentages are similar to the county's share of oil and gas production since 1977. Crook County serves as a bedroom community for Campbell County, and a substantial number of workers at Gillette area coal mines, power plants, and oil and gas industry service firms live in Crook County communities.

### **Johnson County**

Johnson County produces oil, natural gas, and uranium. Johnson County produced about 7 percent of the total oil produced in the PRB in 2003 and about 3 percent of the total natural gas. In recent years, CBNG production has been increasing in Johnson County, which may increase the county's share of PRB natural gas production in the future. Since 1995, Johnson County has produced about 2 percent of the total uranium produced in the state.

### **Sheridan County**

Although a major producer of coal in the 1970s and 1980s, the Big Horn Coal Company ceased production in 2000. Currently, no coal is produced in Sheridan County, but many of the workers at the Decker and Spring Creek coal mines in Montana live in the county, primarily in the Town of Dayton. Sheridan County has produced less than 1 percent of the oil produced in the PRB since 1977 and, until 2001, substantially less than 1 percent of the natural gas. The recent development of CBNG resources in the county has increased natural gas production to 12 percent of all gas produced in the PRB in 2003. Sheridan County also hosts the Arvada electric power generating plant, which has four natural gas-fired units totaling 22.5 MW nameplate capacity.

### **Weston County**

Energy development in Weston County has included about 5 percent of all PRB oil since 1977 and about 3 percent of all PRB natural gas. In 2003, the county's share of PRB oil production increased to 7 percent, but the share of natural gas production decreased to 1 percent. Many employees of southern Campbell County coal mines live in the Weston County communities of Newcastle and Upton, as do some oil, gas, and CBNG service company employees. The Wyoming Refining Company employs about 66 people at its Newcastle refinery. The Osage power plant is located in Weston County, which has three coal-fired units totaling 34.5 MW nameplate capacity.