There are several different technologies for burning coal to produce electricity and Basin Electric has assessed several of the most promising: integrated gasification combined cycle coal, circulating fluidized bed, and pulverized coal.

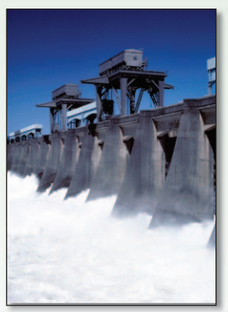
Integrated Gasification Combined Cycle Coal (IGCC) is a process in which coal is converted to low heating value synthetic gas in a process called gasification. Subsequently, the gas is burned as the primary fuel for a combustion turbine. The gasification process in itself has been proven with various gasification technologies; however, integrating those technologies with a gas turbine combined-cycle power plant is relatively new. IGCC using western fuels has not been commercially demonstrated. Basin Electric did consider using IGCC technology for the proposed NextGen project and filed an application for an Investment Tax Credit (ITC) with the U.S. Department of Energy (DOE) to construct such a facility. The tax credit would have offset some risks of the proposed project; however, that application was rejected by the DOE. The DOE has revised the application requirements and is currently soliciting new applications for another round of ITC awards.

Circulating Fluidized Bed (CFB) technology is a combustion process in which crushed coal is mixed with limestone in a chamber where air is introduced from the bottom to mix and suspend the particles. The mixture is ignited in a process resembling a boiling fluid. The limestone removes the sulfur and converts it into an environmentally benign powder that is removed with the ash. Capacity needs of the proposed project would require the use of multiple boilers feeding steam to a single steam turbine generator. In addition, CFB boilers produce a waste product that is a combination of ash, lime, and calcium sulfate. This material does not have much suitability for reuse. The CFB process is not as efficient as pulverized coal burning technologies. It can, however, utilize a wide variety of low quality fuels.

Pulverized Coal boilers burn a coal that has been crushed to a fine dust in a grinding mill. The powdered coal is blown into the combustion zone of a boiler and burns very rapidly and efficiently. This mature technology has been selected by Basin Electric for the proposed project because it is an efficient method of converting the energy in an abundant fossil fuel to electricity. Additionally it has reasonable capital and operating and maintenance costs. Furthermore, the environmental effects can be very effectively controlled with modern pollution control devices.

Technology Alternatives

Basin Electric is committed to using a range of generation technologies and aims to provide a mix of electricity generation that balances the economic and environmental needs of our customers.



It is important to understand that demand for electricity is met by a host of energy facility types—which can generally be categorized as baseload, intermediate or peaking facilities—based on how often and how long they produce electricity. Capacity factor is the ratio of the actual amount of electricity produced in a given period to the hypothetical maximum possible. Typical capacity factors for baseload facilities are greater than 80 percent. Intermediate facilities have capacity factors that range between 20 and 80 percent. Peaking facilities typically have capacity factors of less than 20 percent. Technological and economic limitations of some generation technologies affect how they can contribute to the generation mix.

Basin Electric has prepared an Alternative Evaluation Study that compared energy fuel sources and technologies to determine the best solution to meet the need for a baseload generation facility. The following fuel sources and technologies were analyzed.

Wind

Wind turbines convert the power from wind into electricity by using the wind's energy to generate electricity through a mechanical generator. Wind facilities have capacity factors that range between 30 and 40 percent, because of their dependence on when the wind blows as opposed to when demand occurs. Wind resources, therefore, cannot contribute significantly as baseload facilities. However, Basin Electric currently owns or purchases 136 megawatts (MW) of wind energy from seven sites in North Dakota, South Dakota, and Minnesota, contributing to its generation mix. In addition, Basin Electric plans to add 300 MW of wind energy by 2011 in North Dakota and South Dakota.

Solar

The sun's energy can be converted to electricity directly through photovoltaic cells or by concentrating solar power to produce heat and, subsequently, electricity by use of a steam turbine generator. Solar energy varies greatly by location and by the time of year. As a result, solar power cannot effectively fulfill the current need for base load capacity within Basin Electric's eastern service territory. Solar power generation would be intermittent in this area and costly compared to other alternatives on the basis of cost of power.

Hydroelectric

Hydroelectric power uses the flow of water through a hydroelectric turbine generator to convert the kinetic energy of falling water to electricity. As such, appropriate hydrogeological features are necessary to produce hydroelectric power. While improvements to the efficiency of existing hydroelectric power facilities are ongoing, hydroelectric power cannot fulfill the need of a long-term, cost-effective generation of base load capacity within Basin Electric's eastern service territory.

Geothermal

Geothermal energy brings heat from the earth's interior to the surface as steam or hot water to produce electricity. Geothermal energy cannot currently fulfill the need of a cost-effective generation of baseload capacity within Basin Electric's eastern service territory because commercial geothermal resources for generation of electric power are not available within the area.

Geothermal energy is not a cost-effective power source for many areas in the United States. Hot rocks of a suitable type must be present, at a depth that can be easily drilled down into. In addition, hazardous gases and minerals may come up from underground, and can be difficult to safely dispose of.

Combustion Turbine Generators

In simple terms, a combustion turbine generator is a jet engine turning an electrical generator shaft. In this type of engine, pressure differences caused by burning liquid or gaseous fossil fuels move gases through a series of turbine blades that turn a shaft connected to an electrical generator. Combustion turbines are relatively inexpensive to build, but the cost of maintenance and fuel can make them costly to operate. They are not very efficient at converting the energy in fuel to electrical energy. The efficiency can be improved by capturing some of the energy lost as heat in a waste heat recovery boiler that is used to operate a steam turbine. Combustion turbine generators are typically more viable as peaking or intermediate resources, and Basin Electric plans to add approximately 186 MW of natural gas peaking capacity and 260 MW of natural gas combined cycle capacity to their portfolio mix over the next few years.

Steam Electric Generators

Converting the energy of fossil fuel to steam and then to electricity by use of a steam turbine generator has been employed for more than 120 years. It is a technologically refined generation source that can operate for extended periods with high efficiency. As a result, it is a proven baseload generation technology.

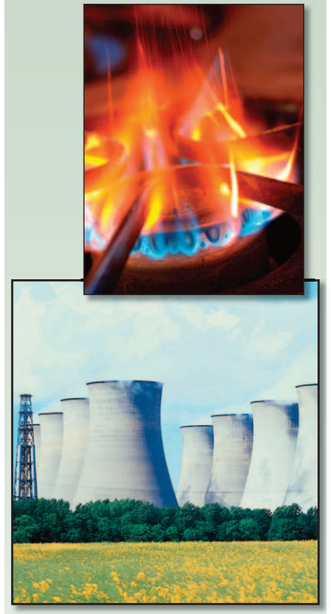
Fuel Options

Natural Gas

Natural gas is a major fuel source for electricity generation used in combustion turbines and steam turbines. Relatively high efficiencies can be achieved through combining gas turbines with a steam turbine in combined-cycle mode. However, natural gas is an expensive fuel that also has highly variable prices over time and available domestic supplies are declining.

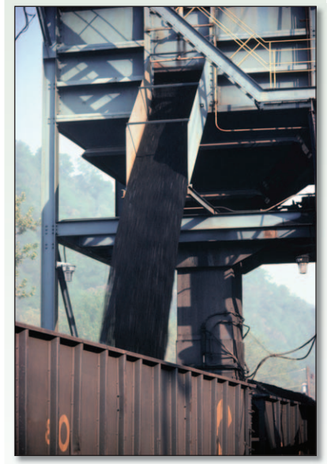
Nuclear

There are a number of power plants in the United States that use a controlled nuclear reaction to generate the heat necessary to make steam for a steam turbine generator power plant. However, few new nuclear power plants have been constructed during the past 10 years. The uncertainties associated with the permitting process, which can potentially result in significant costs, have been a deterrent to many companies considering this type of facility. Furthermore, public concern about the perceived safety issues of such plants has made utilities reluctant to add nuclear power as a generating resource.



Basin Electric's Design Considerations for Generation Technology Alternatives

Alternative Technology	500–700MW in 2014	Baseload Operations	Environmentally Permitable	Cost-Effective	Fuel Cost Stability	High Reliability	Commercially Available	Meets All Criteria
Wind	YES	NO	YES	YES	YES	YES	YES	NO
Solar—Photovoltaic	NO	NO	YES	NO	YES	YES	YES	NO
Solar—Thermal	NO	NO	YES	NO	YES	NO	YES	NO
Hydroelectric	NO	NO	DIFFICULT	YES	YES	YES	YES	NO
Geothermal	NO	YES	YES	N/A	YES	YES	NO	NO
Nuclear	NO	YES	DIFFICULT	YES	YES	YES	YES	NO
Natural Gas Combined Cycle	YES	YES	YES	YES	NO	YES	YES	NO
COAL	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**



Coal

Coal is the proposed fuel of choice for the planned project to develop baseload capacity within Basin Electric's eastern service territory for the following reasons:

- Coal is abundant and domestic.
- The coal supply is secure and prices are stable.
- The overall costs are lower than other potential fuel sources for baseload generation, and there is extensive experience operating coal-based generating plants.
- Technological advancements in operating efficiencies and emission controls are making the use of coal a cleaner option.