

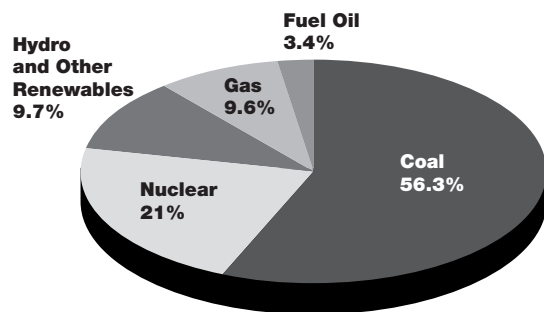
ELECTRICITY GENERATION

■ A Key Element of Reliability

Choosing a Fuel to Make Electricity

Electric companies use a broad mix of fuel and technology sources to generate electricity. The combination of energy sources used is referred to as the generation mix. More than half of the nation's electricity supply is generated from coal. Nuclear fuel produces over twenty percent of the supply. Hydropower and other renewable resources – such as wind, solar, and biomass – provide nearly ten percent of the electricity supply. Natural gas also supplies nearly ten percent, while fuel oil provides about three percent of the generation mix.

Electric companies consider numerous factors to determine their generation mix. Chief among them are price, availability, and reliability of supply. Historically, government policies also have influenced fuel choice. For example, in the late-1970s – the midst of an energy crisis – electric utilities were prohibited from building new gas-fired power plants burning petroleum products. Instead, decisions were made to build more nuclear and coal-fired plants. The fuel choice also depends on whether the power plant will be used continuously or only during peak usage times. In selecting a fuel, utilities also consider potential environmental impacts and necessary environmental controls.



Current Fuel Mix

Source: U.S. Department of Energy, Energy Information Administration

By using a varied fuel mix, electric companies and their customers are protected from contingencies such as fuel unavailability, price volatility, and changes in regulatory practices. A varied fuel mix also helps ensure stability and reliability in electricity supply, and strengthens national security.

Electricity Competition, Generation, and Reliability

Today the electric utility industry is being restructured from one that is regulated to one in which there is significant competition in power generation and sales to consumers. (Electricity transmission and distribution remain regulated.) The evolution to competitive markets is placing reliability into sharper focus.

The major reliability concern related to generation is the ability of current generators to meet projected customer demand. According to the North American Electric Reliability Council (NERC), current and planned generation projects are likely to meet the needs of customers between now and 2008 – even after accounting for a 15 percent increase in summer and winter power consumption. Still, while it is expected that generation resources will be adequate to meet the future demands for electricity in the near term, certain areas of the country might experience shortfalls because of difficulties that arise in obtaining permission to site generation or transmission facilities.

There are steps that electricity customers can take to meet potential generation shortfalls. For example, some industrial and commercial firms generate their own power and are connected to the distribution system primarily for back-up purposes. Excess power that they don't use can be interconnected to the distribution system and can be used by other consumers. Some utilities also offer interruptible service programs, allowing customers to enter into voluntary contracts with the utility. In exchange for reduced rates, the customers agree to reduce their electricity consumption during times when the electricity demand exceeds the amount of power that a utility can generate or deliver to its customers, as occasionally occurs during summer heat waves or winter cold snaps.

What Can Policymakers Do to Address Potential Generation Shortfalls?

It's important for policymakers to recognize the key role that electricity generation plays in ensuring reliability. Likewise, they also must recognize that a varied generation mix enhances reliability and keeps U.S. electricity costs low. Federal and state lawmakers must involve electricity suppliers and stakeholders in a collaborative process to address solutions to siting and fuel supply difficulties and other mechanisms needed to keep the growth in generation on track with the nation's energy needs.

Here are some specific ways to enhance the long-term adequacy of electric generation systems:

- Regulators should avoid the use of price caps in competitive power markets.
 - Market forces should determine prices – at least for larger commercial and industrial customers – so that consumers and potential power suppliers respond appropriately. Market prices give consumers appropriate incentives to cut back on power usage when prices rise in tight markets and to make appropriate investments in cost-effective means for reducing and managing their electric demand. Similarly, potential suppliers are better able to determine when to enter markets with competitive offerings.
 - Because price caps limit what consumers pay for power and not what it costs to produce and deliver it, caps can have the unintentional effect of limiting consumer choice by making it uneconomical for potential suppliers to enter markets. Caps also can undermine investment in new generation and transmission facilities.
- Congress should support research and commercialization of more efficient generation technologies in order to promote reliability, as well as environmental protection.