

At-a-Glance Issue Overview: Energy Sources

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What are Fossil Fuels?

- Fossil fuels are high carbon energy sources like coal, crude oil, and natural gas that are formed from fossilized remains of plants and animals.
- Buried deep underground, fossil fuels are difficult to extract and need to be refined or processed in order to be used by consumers.
- When burned, fossil fuels release large amounts of energy used to create electricity.
- Burning fossil fuels also releases greenhouse gases like carbon dioxide into the atmosphere.
- Once burned, fossil fuels cannot be replenished.

What is Renewable Energy?

- Renewable energy is produced from sources that are naturally replenished, like wind, sunlight, and flowing water.
- Solar energy is collected from sunlight and converted directly into electricity.
- Wind energy is harnessed with turbines that turn a generator to produce electricity.
- Since the sun and wind are intermittent sources of energy, batteries are produced to store electricity to use during unfavorable conditions.
- Hydroelectric energy uses the natural flow of moving water to generate electricity.

What is the Virginia Clean Economy Act?

- In 2020, state lawmakers passed the Virginia Clean Economy Act (VCEA), which pledged to transition 100% of the state's electric grid to renewable energy by 2050.
- Dominion Energy Virginia and American Electric Power (two of the largest electricity providers for VA) are required to produce 100% of their electricity from renewable sources by 2045 and 2050, respectively.
- These companies also need to follow certain guidelines for their transition, including
 - Reaching a certain capacity of solar and offshore wind energy each year
 - Increasing their overall capacity of energy production each year
 - Increasing their storage capacity for solar and wind energy

Why the Virginia Clean Economy Act is Controversial

Arguments supporting the VCEA

- Converting to renewable energy will be cheaper for households in the long run.
- The renewable energy sector has the potential to create more jobs than the fossil fuel industry.
- Burning fossil fuels releases carbon dioxide and other greenhouse gases that contribute to global warming and climate change, with high ecological and economic costs.
- Burning fossil fuels also releases harmful air pollutants, which negatively affect plants, animals, and humans living in proximity to energy plants.
- It would be more expensive to do nothing and let fossil fuels continue to change the climate than to invest in renewable energy and slow climate change.

Arguments opposing the VCEA

- Fossil fuels are reliable and can maintain the current demand for energy. Renewable energy sources are not reliable or powerful enough to meet the energy needs of society.
- Coal, natural gas, and oil are relatively easy to transport anywhere in the world.
- Fossil fuel projects and related industries create a lot of jobs.
- It will cost a lot of money to convert to clean energy, which will disproportionately affect poorer households.
- Society has already invested a lot of research into the safe and efficient use of fossil fuels, making them relatively cheap to use.