Effects of Climate Change on Energy Production and Use in the United States

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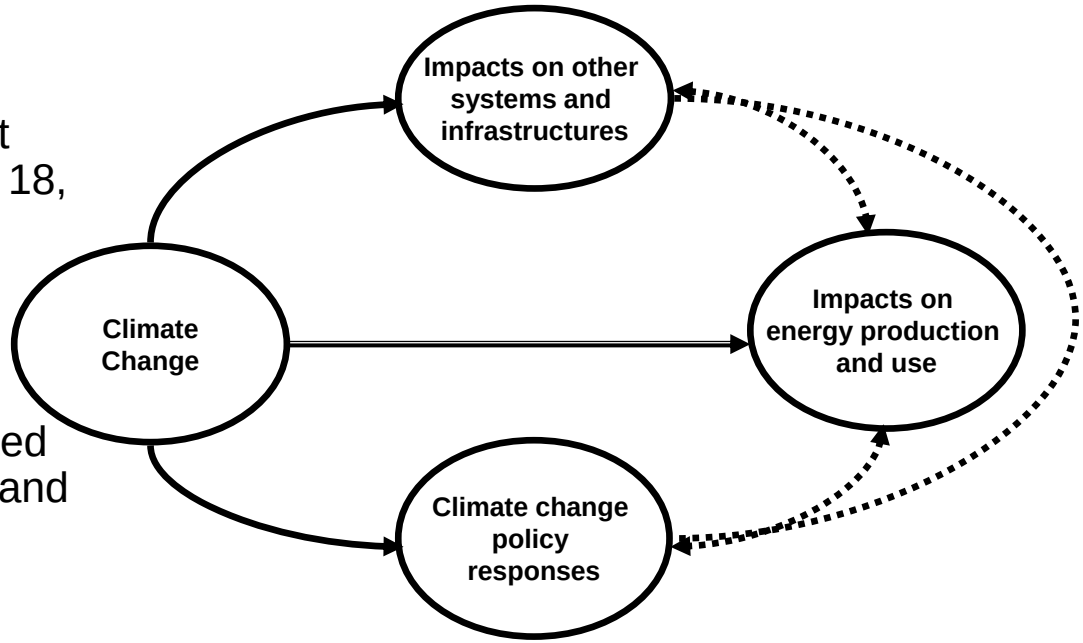
- The U.S. Climate Change Science Program's Synthesis and Assessment Product 4.5 was released on October 18, 2007.
- This report is the first comprehensive summary of what is known about potential effects of climate change on energy production and use in the United States, possible adaptive responses, and research priorities.



Conclusions

- Climate change raises a variety of concerns varying by energy source and region, mainly related to severe storms and water availability; but the general picture is cautionary rather than alarming
- If the nation's energy institutions take climate change seriously in their risk management strategies, there is time to develop strategies for adaptation that would reduce many possible negative impacts and take advantage of possible positive impacts.

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Abstract: Synthesis and Assessment Product 4.5 [1] of the U.S. Climate Change Science Program summarizes what is currently known about effects of climate change on energy production and use in the United States. It finds that climate warming is likely to lead to increased demands for electricity, which supplies nearly all cooling energy services. Climate change could affect energy production if extreme weather events become more intense, where regions face reductions in water supplies, where temperature increases reduce thermoelectric power generation efficiencies, and where changed conditions affect facility siting decisions. Climate change is expected also to have indirect effects on energy production and consumption by affecting energy technology choices, and other possible indirect effects need further study as well. The report concludes that, based on what we know now, there are reasons to pay close attention to possible climate change impacts on energy production and use and to consider ways to adapt to possible adverse impacts and take advantage of possible positive impacts. Because the current knowledge base is so limited, there is a need for a rich partnership among federal and state governments, industry, nongovernmental institutions, and academia to expand knowledge related to key concerns in order to inform longer-term strategic planning and investment.

[1] U.S. Climate Change Science Program, 2007: *Effects of Climate Change on Energy Production and Use in the United States.* A Report by the U.S. Climate Change Science Program and the subcommittee on Global change Research. Thomas J. Wilbanks,, Vatsal Bhatt, Daniel E. Bilello, Stanley R. Bull, James Ekmann, William C. Horak, Y. Joe Huang, Mark D. Levine, Michael J. Sale, David K. Schmalzer, and Michael J. Scott). Department of Energy, Office of Biological & Environmental Research, Washington, DC., USA, 160 pp.