



CHAPTER 1

Introduction

Reliable and affordable energy is a cornerstone of modern life. We use energy, mostly in the form of gasoline derived from crude oil, to power the vehicles that ferry us to work and play. Electricity from coal, natural gas, nuclear or wind power provides us with light, powered appliances, heating and cooling. And some sources of energy are used as chemical feedstocks to make other products, an industry in which Texas is a world leader. Our standard of living, then, depends upon readily available sources of energy.

Energy use historically has been tied to population and economic growth. Texas' population is expected to continue to increase for decades to come, and our economic growth will depend on the availability of energy.

For much of the twentieth century, Texas' economy was tied to the oil and gas industry, which accounted for more than one-quarter of the gross state product at the height of the oil boom in the early 1980s. Tax revenues from energy production and use, particularly oil and gas, have long contributed a significant share of state revenues; at their peak in the early 1980s, tax revenues from oil and gas alone accounted for more than a quarter of all state revenue. Though the state's economy has diversified over the last 25 years, and the share of our economy accounted for by oil and gas has declined, the industry has seen a recent resurgence due to rising oil and gas prices and remains a major component of the Texas economy and contributor to the state's fiscal coffers.

DIVERSIFYING OUR ENERGY PORTFOLIO

Texas, like most of the world, still relies on fossil fuels to meet most of its energy needs. Resources such as oil, gas and coal have been relatively abundant and inexpensive. And all of these fossil fuels benefit from an energy infrastructure developed over decades to make use of them. Unfortunately, these fuels are not without drawbacks.

Texas and the U.S. as a whole are increasingly reliant on foreign imports to meet our petroleum needs. While neighboring countries Canada and Mexico are the largest and fourth largest sources, respectively, of U.S. oil imports, much of the world's reserves of oil and gas are found in politically unstable regions of the world, and in some cases are controlled by governments hostile to the U.S.

Furthermore, burning fossil fuels can have an environmental impact. Our government established policies decades ago that have ameliorated some of the air and water quality problems associated with the use of fossil fuels. A growing environmental concern today, however, relates to unregulated "greenhouse gas" emissions. Congress is debating plans that would limit such emissions, especially of carbon dioxide. Indeed, major financiers in the U.S. are working now to set up markets to trade carbon emission permits in the event that new laws are enacted.

The possibility of such policies, combined with rising oil and gas prices, has prompted a wave of investment in alternative energy sources, as well as new technologies to reduce the negative consequences of fossil fuels. Wind and solar power, bio-fuels and other renewable resources are increasingly important. And recently revised federal regulations have renewed interest in nuclear power.

Fortunately, Texas has the resources, both natural and human, to lead the way in developing new sources of energy. We have an abundance of renewable and clean fuel sources, including the winds of the Panhandle, West Texas and the Gulf Coast; the sunlight of West Texas; the forests of East Texas; uranium in South Texas that is mined and then enriched for use in nuclear reactors; and land that might be used to grow crops for the next generation of ethanol and other biofuels.

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Texas is uniquely positioned to lead the way in developing new technologies that will allow us to use fossil fuels in a more efficient, environmentally friendly manner; to make the technological advances necessary to make better use of our abundant renewable resources; and to reduce the demand for energy through efficiency gains.

In fact, Texas is already making progress in the transition from traditional fossil fuels. Texas, for example, is the nation's leader in installed wind capacity, though wind still generates less than three percent of the state's electricity. We also are the nation's leading producer of biodiesel. And two of the first new commercial nuclear applications in decades are for projects to be built in Texas.

ABOUT THIS REPORT

Comptroller staff conducted exhaustive research on the existing and potential resources Texas can employ to meet its energy demands. We talked to scores of individuals in the energy sector; visited mines, power plants, research centers and control rooms; and studied thousands of research reports.

One thing we heard repeatedly is that there is no single solution to meeting our energy needs. And

almost everyone seems to agree that Texas — and the rest of the world, for that matter — will have to rely on an array of resources to meet those needs. This new energy portfolio will include renewable resources, nuclear power, and traditional fossil fuels linked with new technologies to reduce their environmental impact.

It is important to remember, however, that there are *always* tradeoffs to be considered in energy policy. The fuels we have relied on for decades, despite recent increases in the cost of oil and gas, will continue to be the dominant means to meet specific energy needs. Our current energy infrastructure is designed to take advantage of them. Any policies that discourage their use, directly or indirectly, will likely entail costs to taxpayers and consumers.

This report is intended to be a resource for policymakers as they consider such tradeoffs. It provides an overview of a variety of energy sources that Texas can use to meet its future energy demands, with a fact-based assessment of each. Our report frames the critical issues and presents the objective information Texans will need to make informed choices about one of the most important issues facing the state.

Texas has the opportunity to influence the expanding public debate over energy use and production. Our state — and our choices — can set a new direction for the nation.

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