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Chapter 1 : Energy Policy - Journal - Elsevier

Analysis and policy prescriptions of major foreign policy issues facing the United States, developed through private deliberations among a diverse and distinguished group of experts. Given the.

The Center will explore the intersection of policy and technology and draw upon the extensive expertise in the Southeast, including academia, utilities, industry, key national labs, and other public and private stakeholders. Motivation for a Regional Center: Broader views and approaches for energy innovation are similarly viewed as mission critical, for example by including policy, economic, even social considerations along with conventional technological factors. The region already provides national leadership in efficiency, reliability, and cost due in part to the vertical integration of data, networks and physical resources by regulated utilities across the entire value chain. In June, Georgia Tech helped co-author a whitepaper in which distinguishing features of the energy system in the Southeastern United States were identified as follows: The presence of large, vertically-integrated, regulated utilities; A comparatively low carbon resource mix that includes leadership and progress in Nuclear Power, Photovoltaics PV , and Carbon Capture and Sequestration CCS ; Leadership and growth in natural gas for electricity, innovative integration of electricity and natural gas markets, and natural gas infrastructure; Pioneering efforts in smart metering and grid modernization; One of the largest global concentrations of industrial big data and analytics, that aggregate, analyze, and remotely control major energy infrastructure; Energy intensive industry and manufacturing; Favorable regional climates for employment, access to capital, and innovative business models. This Center will specifically address characteristic resources, challenges, and capabilities with regional expertise, and deliver realistic solutions with maximum impact. This initiative is the first known implementation of a regional partnership to focus on the interdependencies of energy policy and technology toward the pragmatic realization of meaningful, affordable, and market-based carbon reductions. The Center will strive to accelerate a diversity of reliable, affordable and increasingly low-carbon energy options in the Southeast. The Center will put a premium on regional contributions that can enhance U. The Center will investigate challenges in both power generation and in transportation on a regional basis. Techno-economic, social and policy factors, as well as near and longer term impacts, are within the scope of consideration. The Center will produce and disseminate rigorous, fact-based policy studies that will address southeastern perspectives on global, national and regional energy issues; Events: The Center will host conferences, workshops and symposiums on relevant energy issues, serving as a nonpartisan facilitator for academic, business and nongovernmental stakeholders; Educational outreach and workforce development: The Center will provide opportunities for learning and information exchange among students, faculty and visiting scholars. It will also support training and workforce development with regional utilities and energy equipment providers, facilitating stakeholder collaboration and public-private energy partnerships. Funding Model and External Advisory Mechanism: All cash and in-kind support will derive entirely from voluntary contributions of interested parties, and will be directed to a foundation established and overseen by Georgia Tech. Any requests for non-cash support made on behalf of the Center will be non-binding, performed entirely at the discretion of its partners. The Center will establish an external advisory body and invite selected regional representatives to participate. Advisors may be asked to provide recommendations and input on an as-need basis for the selection and review of work products, or for other purposes. A variety of strategic entities will be invited to participate in the Center, with the philosophy that a focus on common resources and shared challenges will be most effective in accelerating regional progress and disseminating learning. Stakeholder categories from which partners will be invited include:

Chapter 2 : Integrated Energy Policy Report

Strategic Energy Policy Page Content Energy Initiatives are cross cutting issues and developments in the Energy sector that impact across a range of energy areas.

Email This week, Mr. This is the first such plan since the Fukushima Daiichi nuclear disaster. Read on for a synopsis of the plan. For the English translation, please click here. To hear a live presentation of the plan, please virtually attend his discussion at Brookings on June The plan, the fourth of its kind, is the first adopted since the March meltdown at the Fukushima Daiichi Nuclear Power Plant. The plan emphasizes long term reliance on clean energies. In particular, Japan will seek to ensure its energy security by enhancing U. As part of the Strategic Energy Plan, Japan will limit greenhouse gas emissions and enhance energy security through the adoption of a large-scale plan to advance efficiency. To this end, industry-specific energy saving plans will be adopted and residential and commercial standards for all buildings and houses will be implemented. Energy demand will also be better managed through the installation of smart grid technology in all homes and businesses. Japan will promote onshore wind, offshore wind, geothermal, and other types of renewable power by expediting environmental assessment, encouraging investment in new technologies, and reducing private sector risk. The Japanese government will also help in the search for the next generation of renewable energy by supporting the construction of the Fukushima Renewable Energy Institute. The first Strategic Energy Plan since the Fukushima disaster, the plan comprehensively addresses the future of Japanese nuclear energy policy and sets a new agenda for the industry. The plan calls for the Japanese government to play a more proactive role in the decommissioning of the Fukushima Daiichi Nuclear Power Plant and the ongoing efforts to address contaminated water. The plan also tasks the government with becoming more involved in compensation efforts. This initiative will proceed in coordination with a fundamental reexamination of the role of the government in overseeing nuclear power and ensuring a stable environment for nuclear operations and the highest levels of safety for Japanese citizens. The government also commits itself to establishing appropriate nuclear risk management systems and working with host communities to ensure enhancement of emergency planning. In the Fourth Strategic Energy Plan, the Japanese government commits itself to searching for measures to address spent fuel management and storage. In particular, the government will promote the search for geologic disposal of high-level radioactive waste that ensures both reversibility and retrievability in the case of future technological disposal advancements. The government also will undertake construction and utilization of intermediate storage facilities and dry cask storage and promote research and development on methods for volume reduction and radioactivity mitigation for spent fuel. However, the Japanese government remains committed to maintaining its nuclear fuel cycle policy and to retaining flexibility to manage its fuel cycle in both the medium- and long-term. This effort includes the promotion of research and development of fast reactors through cooperation with the U. Crucially, the Fourth Strategic Energy Plan commits the Japanese government to rebuilding trust between the Japanese nuclear industry and the broader populace both in Japan and abroad. The government seeks to achieve this by appealing directly to the Japanese public through increased consultation with local municipalities, focusing on addressing safety concerns, and developing robust emergency planning. Internationally, Japan will rebuild trust in its nuclear industry through supporting human resource and institutional development in emerging nuclear markets. In addition to power sector reforms, the Japanese government is committed to reform of the electricity market through the introduction of full retail competition and unbundling of the transmission and distribution sectors. Simultaneously, the plan calls for a reinforcement of oil, gas, and liquefied petroleum storage and transmission systems to create more redundancy and resiliency. Lastly, the Fourth Strategic Energy Plan establishes an outline for the future of Japanese energy technology research and development, calling for additional investment in co-generation, high-efficiency vehicles, methane hydrates, battery storage, fuel cells, and technologies to improve efficiency and reduce fuel waste in the fossil fuel sector. The government has committed to formulate a technology research and development roadmap over the next year.

Chapter 3 : Energy policy of the United States - Wikipedia

The published report of this Task Force, Strategic Energy Policy: Challenges for the 21st Century, defines the energy problems facing the United States today and outlines findings and.

First and foremost, I am indebted to the superb chair, Dr. Morse, for his dedication, wisdom, insights, superior writing and editing skills, guidance, and steadfast support during the past five months. Ed Morse made this challenging assignment look easy through his outstanding leadership and deep analytic understanding of the subject matter. I congratulate him on drawing together this outstanding group of professionals and policymakers into a broad consensus on highly complex and divisive issues. But most importantly, I would like to thank Ed Morse for his loyalty and faith in me that extends back more than a decade and has truly made a difference in my life and career. I am also indebted to the Task Force members, observers, and reviewers who generously shared experience, information, ideas, and concepts. This report reflects their views and concurrence on the broad thrusts of this examination of U. Although not every member signed on to every word or prescription, I am grateful for every view presented in this report, including the concurrence with the main report as well as additional views and dissent. The dedication of our Task Force members to enhancing the debate on this important matter of public policy is the cornerstone to a better framework. The Task Force benefited greatly from the counsel and input provided by a group of reviewers with broad academic, economic, and energy expertise. These individuals reviewed drafts of the report at various stages and participated in the Task Force meetings. Throughout the period of their supportive collaboration, the Task Force benefited from their keen observations, and their insights greatly enhanced the final report. Additionally, the Task Force recognizes the contributions of those members of the James A. I want to thank Sarah Miller, Vice President of the Energy Intelligence Group, for her invaluable editing contribution to this project. Also, I extend my deep gratitude to the staff that made this project run so well, including Col. I would also like to thank my research interns Matthew Chen and Rachel Krause. I extend a special thanks to Falah Aljibury for his astute observations about the Middle East and his always sympathetic ear. Finally, and most importantly, to my husband and three great children, Jordan, Rebecca, and Daniel, for the personal sacrifices made in the hopes of a better U. The Task Force reflected a productive institutional collaboration between the James A. I want to express my special appreciation to Ambassador Edward Djerejian, Director of the Baker Institute, for his mentoring, wise guidance, and insights, and to Dr. Ric Stoll, associate director for Academic Affairs at the Baker Institute, whose astute advice and counsel has kept me on track for this and many other equally challenging projects. I also owe a debt of gratitude to the faculty of Rice University who have taken me in and taught me the art form of academic discourse, and to Joe Barnes and Robert Manning for their excellent counsel in matters of policy formation and writing. This final report reflects an extraordinary amount of work by a broad range of experts who took the time to participate in this important endeavor. They responded in detail to several drafts, improving the structure, providing understanding on regional issues, providing information on federal and state regulatory policies, expanding the horizon of the members on the impact of globalization on energy issues, and filling in the gaps while suggesting new approaches to challenging problems. Without the hard work and collaboration of the Task Force members this project would not have been possible. Now, the consequences of this complacency have revealed themselves in California. Bush and his administration need to tell these agonizing truths to the American people and lay the basis for a comprehensive, long-term U. That Americans face long-term situations such as frequent sporadic shortages of energy, energy price volatility, and higher energy prices is not the fault of President Bush. The failure to fashion a workable energy policy rests at the feet of both Democrats and Republicans. Energy policy was permitted to drift even though oil price spikes preceded virtually every American recession since the late s. The president has to begin educating the public about this reality and start building a broad base of popular support for the hard policy choices ahead. This executive summary and the full report address the following questions. What are the potential effects of the critical energy situation for the United States? How did this critical energy situation arise? What are the U. What should the United States do now? As the 21st century

opens, the energy sector is in critical condition. While the origins of a crisis are hard to pinpoint, it is clear that energy disruptions could have a potentially enormous impact on the U. An accident on the Alaska pipeline that brings the bulk of North Slope crude oil to market would have the same impact as a revolution cutting off supplies from a major Middle East oil producer. A revolution in Indonesia would paralyze the liquefied natural gas LNG import-dependent economies of South Korea and Japan, affecting domestic politics and all of their trading partners. While oil is still readily available on international markets, prices have doubled from the levels that helped spur rapid economic growth through much of the s. The situation is, by analogy, like traveling in a car with broken shock absorbers at very high speeds such as 90 miles an hour. As long as the paving on the highway is perfectly smooth, no injury to the driver will result from the poor decision of not spending the money to fix the car. But if the car confronts a large bump or pothole, the injury to the driver could be quite severe regardless of whether he was wearing a seatbelt. An energy crisis need not arise abruptly. One can emerge through slower contagions. Electricity outages already have our most populous state in a vice and are threatening to spread from California to other parts of the country. Natural gas is available to heat homes and run power plants in some parts of the United States only because prices soared over the winter to many times previous historic peaks. Gas markets dealt successfully with a supply shortage, but only at the cost of driving a few lower priority industrial users to close plants and lay off workers, and many to desert gas for fuels that were more polluting. If economic growth continues, price spikes and supply shortages could become widespread recurring events challenging expectations of free energy and making the United States appear more similar to a poor developing country. How the United States and indeed the rest of the world got into this difficulty is a long and complicated story. The situation did not develop overnight. But one of the fundamental reasons it could develop is unambiguous. The United States has not had a comprehensive, integrated strategic energy policy for decades. Infrastructure constraints, inadequate infrastructure development, rapid global economic expansion, the lack of spare capacity and the changes in inventory dynamics, a lack of trained energy sector workers, and the unintended side effects of energy market deregulation and market liberalization all contributed to the critical energy situation. The reasons for the energy challenge have nothing to do with the global hydrocarbon resource base, which is still enormous, and everything to do with infrastructure constraints that can and must be addressed as a matter of the highest priority at the highest level of government. In the United States, years of rapid economic expansion coincided with tightening restrictions on building new facilities and capital flight from smokestack to high-tech industries that discouraged investment in conventional energy sources. The result was sudden, severe strains at critical links in the energy supply chain. Now, acute shortages are evident in electric power generation and transmission capacity. Oil refineries are barely able to produce enough of the cleaner fuels that are increasingly in demand, refined product imports are soaring, and isolated but politically troublesome shortages have already occurred in both gas and heating oil. Oil and gas pipelines are operating at so close to capacity that unexpected outages can quickly lead to price spikes and even regional physical shortages, as witnessed with heating oil in parts of New England last winter. And the industry faces critical shortages of trained personnel, as well as of the capital equipment required to overcome these constraints. At the same time, to bolster profitability and share prices, industry has adopted strict "just-in-time inventory" policies that further weaken the safety net. Internationally, too, rapid economic growth during the past decade has stretched to the limit world capacity to produce oil and natural gas. Meanwhile, across much of the developing world, energy infrastructure is being severely tested by the expanding material demands of a growing middle class, especially in the high-growth, high-population economies of Asia. As demand growth collided with supply and capacity limits at the end of the last century, prices rose across the energy spectrum, at home and abroad. Since the s, governments around the globe have, to varying degrees, retreated from heavy regulation of national energy sectors. Market forces were freed to stimulate investment and allocate resources. And up to a point, the strategy worked. In the United States, as elsewhere, deregulation did bring initially the expected lower energy prices in most cases. But market liberalization brought some less desirable consequences, as well. For all their advantages, deregulation and reliance on consumer preferences failed to provide incentives either to build surplus infrastructure capacity or hold the inventories of fuel needed to smooth out market

dislocations. Capacity cushions that had built up earlier gradually eroded. Shortages that have been years in the making seem to be springing up overnight. There are no easy overnight solutions. The United States faces three policy paths to deal with the energy problem. One option is to continue the easy approach of "muddling through" with marginal Strategic Petroleum Reserve SPR management and complete free market solutions. A second option is to take a near-term, narrow approach by expanding supply to ensure cheap energy while enduring conflict with environmental and consumer groups and others. Finally, the United States could develop a comprehensive and balanced energy security policy with near-term actions and long-term initiatives addressing both the supply side and demand side including diversification of energy supply resources, which would enable the United States to escape from a pattern of recurring energy crises. Long-term, dedicated programs are required and explicit tradeoffs might well be needed between energy objectives and other areas of public concern, including economic growth, the state of the human habitat, and certain foreign policy objectives, if these problems are to be overcome. Long-term problems require long-term solutions and may literally require a higher price of energy goods if the right supply and demand responses are to emerge. Supply-side responses alone will not suffice. Indeed, if quick fixes on the supply side alone brought prices back down in the absence of effective efforts to promote energy efficiency, they might actually prolong the problem the United States now faces in the energy arena, by bringing even greater reliance on imports. As it is, national solutions alone cannot work. Politicians still speak of U. More flexible environmental regulation and opening of more federal lands to drilling might slow but cannot stop this process. Dependence is so incredibly large, and growing so inexorably, that national autonomy is simply not a viable goal. In the global economy, it may not even be a desirable one. The United States must stake out new paths as it adjusts to economic interdependence in energy. Alliances, effective diplomacy, freer trade, and innovative multilateral trade and investment frameworks will all be tools for securing reliable energy supplies in the 21st century. Traditional policies and long-standing institutional approaches, developed mainly in the s, are inadequate to the challenge. Much has changed in the last 30 years, yet institutions such as the International Energy Agency IEA have done little to revamp their outmoded missions, memberships, and mechanisms. The energy problems we face today are complex, and our response to them must range from a review of our domestic environmental, tax, and regulatory structures to a reassessment of the role of energy in American foreign policy. We need not to apportion blame but to seek workable, integrated solutions that balance energy priorities with economic, environmental, and national security objectives. Such a strategy will require difficult tradeoffs, in both domestic and foreign policy. But there is no alternative. And there is no time to waste. The problems facing the energy sector will take at least three to five years to solve. Some will take longer.

Chapter 4 : An Analysis of Japanâ€™s 4th Strategic Energy Plan : Forum on Energy

ACKNOWLEDGEMENTS. The Independent Task Force on Strategic Energy Policy Challenges for the 21st Century was a collective endeavor reflecting the contributions and hard work of many individuals.

It produced around 6. The Grand Coulee Dam is the 5th largest hydroelectric power station in the world. The largest of these solar thermal power stations is the SEGS group of plants in the Mojave Desert with a total generating capacity of MW, making the system the largest solar plant of any kind in the world. As of early , new projects are underway. At this rate of development, geothermal production in the United States could exceed 15, MW by This policy-stimulus combination represents the largest federal commitment in U. As a result of these new initiatives, many more utilities are expected to strengthen their clean energy programs. Biofuel in the United States , Food vs. Increased domestic production of these fuels could reduce US expenditure on foreign oil and improve energy security if methods of producing and transporting the fuels do not involve heavy inputs of fossil fuels, as current agriculture does. Most cars on the road today in the U. By mid, there were approximately 6 million Ecompatible vehicles on U. According to the Renewable Fuels Association , the ethanol industry created almost , U. Efficient energy use A spiral-type integrated compact fluorescent lamp , which has been popular among North American consumers since its introduction in the mid s. There are many different types of energy efficiency innovation , including efficient water heaters; improved refrigerators and freezers; advanced building control technologies and advances in heating, ventilation, and cooling HVAC ; smart windows that adapt to maintain a comfortable interior environment; new building codes to reduce needless energy use; and compact fluorescent lights. Improvements in buildings alone, where over sixty percent of all energy is used, can save tens of billions of dollars per year. Their state planning officials, citizens, and industry leaders, have found these very cost-effective, often providing greater service at lower personal and social cost than simply adding more fossil-fuel based supply. This is the case for several reasons. Energy efficient technologies often represent upgrades in service through superior performance e. So these innovations can provide a better, less expensive service. Another example is more efficient vehicles, which not only save immediately on fuel purchases, but also emit fewer pollutants, improving health and saving on medical costs to the individual and to society. This vehicle would have ultra-light construction with an aerodynamic body using advanced composite materials , low- drag design, and hybrid drive. List of United States Energy Acts An incentive resulting from US energy policy is a factor that provides motive for a specific course of action regarding the use of energy. Examples of these include tax breaks, tax reductions, tax exemptions, rebates, loans and specific funding. Throughout US history there have been many incentives created through U. Most recently the Energy Policy Act of , Energy Independence and Security Act of , and Emergency Economic Stabilization Act of , each promote various energy efficiency improvements and encourage development of specific energy sources. The ability to do this depends upon which industries and products the government chooses to subsidize. USDOE The budget that President Obama submitted to Congress calls for a 70 percent increase over the allocation for federal research and development activities related to renewable energy. These funds provide a means for allocating the capital necessary for the development of renewable energy technologies. Tax incentives[edit] Federal tax incentives can be designed to accelerate market adoption, create jobs, encourage investment in a public good reduced pollution or encourage investment in renewable technology research and development. The Production Tax Credit PTC reduces the federal income taxes of qualified tax-paying owners of renewable energy projects based on the electrical output measured in kWh of grid-connected renewable energy facilities. The Investment Tax Credit ITC reduces federal income taxes for qualified tax-paying owners based on dollars of capital investment in renewable energy projects. The Advanced Energy Manufacturing Tax Credit MTC awards tax credits to new, expanded, or re-equipped domestic manufacturing facilities that support clean energy development. The program is scheduled to end on September 30, , unless Congress passes further legislation.

Chapter 5 : Strategic Energy Institute Announces Development of Major Regional Energy Center

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ACKNOWLEDGMENTS The Independent Task Force on Strategic Energy Policy - Challenges for the 21st Century was a collective endeavor reflecting the contributions and hard work of many individuals.

Chapter 6 : Energy policy of the European Union - Wikipedia

The United States faces a major challenge today to create a coherent and comprehensive energy policy that accommodates and coordinates, where possible, domestic and foreign policy priorities and objectives in an effective manner.

Chapter 7 : Home | Strategic Energy Institute | Georgia Institute of Technology | Atlanta, GA

The U.S. Department of Energy Office of Indian Energy Policy and Programs and Tribal Energy Program provide Tribes and Alaska Native entities with technical assistance and resources for developing a strategic energy plan.

Chapter 8 : STRATEGIC ENERGY POLICY CHALLENGES

April 10, - There could be more Californias in America's future unless the U.S. government adopts a long-term, comprehensive energy policy now, according to an independent task force report.

Chapter 9 : Government Employee Contacts

In April , the Cabinet of Japanese government formulated the "Strategic Energy Plan." This plan is the basis for the orientation of Japan's new energy policy, considering the dramatic changes in energy environments inside and outside Japan, including those caused by the Great East Japan.