



Energy Law: A Primer

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Abstract Energy is big business all over the world. Energy law refers to the laws that govern the use, regulation, and conservation of energy. It is concerned with the regulation of energy, energy resources, energy facilities, energy generation, distribution, and consumption. It is an emerging area (sub-discipline) of law, which is primarily concerned with the management of energy resources. It is increasingly acquiring an international law dimension. This paper provides a primer on energy law. It covers the laws surrounding the oil and gas industry as well as renewable energy laws.

Keywords energy, energy law, renewable energy laws

Introduction

Energy production and use drive the world's modern economies. The energy industry has been the lifeblood of the modern economy, fueling both industrial and private consumption. As new energy sources emerge, there is need for developing laws that deal with the issues inherent in the production and distribution of the new energy sources and their underlying technology.

The components of the energy sector are: (1) the electrical energy system; (2) the thermal energy supply systems; (3) the gas supply system. Rapidly declining costs of wind and solar energy technologies and increasing concerns about the environmental impacts of fossil fuels point to a not-so-distant future in which renewable energy plays a pivotal role in the energy system [1].



Figure 1: Some energy workers [2]



However, while the use of renewable energy is increasing rapidly, its development is still hindered by economic, social and legal obstacles.

Today, the US energy system is controlled by a complex regime of state and federal laws. Technological changes, market local and international forces, and regulatory changes have significantly affected the structure of the energy system. This dynamic growth reflects remarkable changes in energy costs, technologies, and policies. Figure 1 shows some energy workers [2].

Concept of Energy Law

Various laws exist to regulate every aspect of energy: generation, harvesting, use, taxation of energy use, sale, and conservation of energy resources. Energy law encompasses a wide range of practices such as policy, regulatory, legislative, litigation, transactional, and international practices. It is concerned with creating, enforcing, and regulating energy use and conditions for carrying out these activities (generation, transmission, distribution of electricity and gas, etc.) in order to ensure quality and safe energy supply to customers. It is designed to ensure the safety of energy consumers, both renewable and non-renewable Energy laws also relate to the taxation of energy services including utility taxes and the taxes paid at the pump for gasoline. There are energy laws at local, state, federal, and international levels. In the US, most energy laws come from the **Department of Energy (DoE)**, which is located in Washington D.C. and is run by a member of the **US President's cabinet**. Its overarching mission is to advance the national, economic, and energy security of the United States. It is meant to regulate responsible use of energy. Specific areas of energy regulation include [3]:

- *Nuclear power*: In the United States, nuclear generates roughly 20 percent of electricity.
- *Development of clean energy*: Companies and individuals who develop and produce clean energy.
- *Regulation of oil and gas*: Most oil and gas regulations take place on a state level.
- *International policies*: Politicians and federal employees practice energy law by working with foreign governments to create and enforce energy agreements.

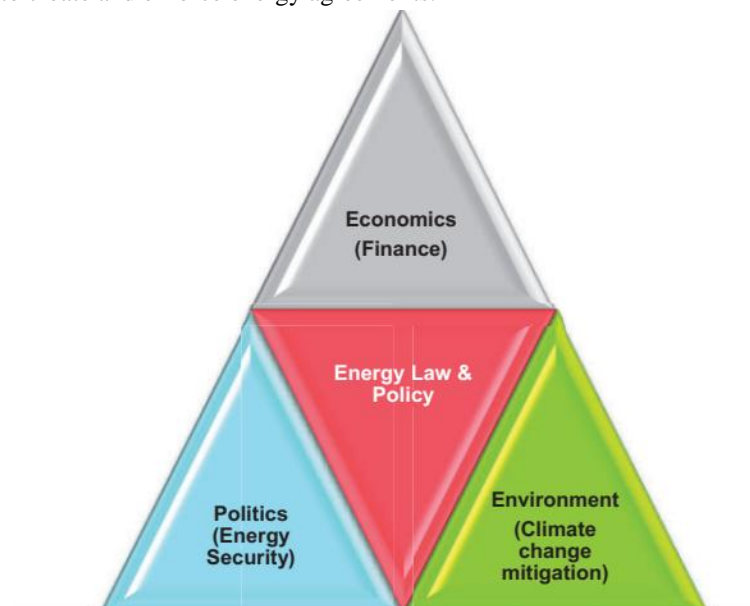


Figure 2: The energy law and policy triangle [4]

As shown in Figure 2, energy law is closely related to energy policy [4]. Energy law and policy stand at the center of the triangle and on the three vertices of the triangle are economics (e.g. energy finance), politics (e.g. energy security) and environment (e.g. climate change mitigation). The main focus of energy law is to ensure that energy is supplied without interruption at an affordable, reasonable price. The seven principles of energy law are [5]:

- The Principle of National Resource Sovereignty
- The Principle of Access to Modern Energy Services
- The Principle of Energy Justice



- The Principle of Prudent, Rational and Sustainable Use of Natural Resources
- Principle of the Protection of the Environment, Human Health & Combatting Climate Change
- Energy Security and Reliability Principle
- Principle of Resilience

These principles should guide energy lawyers, policymakers, academics, judges, and arbitrators when enforcing or making policies, laws, regulations, judgments on energy.

Energy Lawyers

Energy lawyers specialize in the energy business and work for DoE, state agencies, energy companies and utilities, large corporations, and individual home owners. They play a crucial role in the development and enforcement of energy policies. They engage with regulatory agencies to ensure compliance with existing regulations or work to develop new ones. Energy attorneys help their clients with many energy-related issues such as energy harvesting, energy transactions, dispute resolution, taxation of energy, property encroachment, and navigating the complex regulatory frameworks governing the energy industry. They also help their client negotiate terms for leasing or selling of oil and gas rights on the property. In the US, there is Energy Bar Association which is comprised of lawyers (both scholars and practitioners). The association has reviewed energy law education on key federal statutes and regulatory regimes governing natural gas, electricity, and nuclear power.

International Energy Law

Energy laws and regulations impact international relations. International energy law seeks to apply international law to the energy sector. Its development has been hastened by the increasing globalization and harmonization of energy and resources laws, practices, and markets. Thus, international energy law may be regarded as a conglomeration of rules of custom, treaties, domestic and regional laws, and principles of intergovernmental and non-governmental international institutions, which together regulate the various facets of energy production, supply, consumption, and trade among nations [6]. It has emerged at the forefront of academic, political, and legal deliberations. It is the responsibility of national governments to set the energy policy for their countries. As each nation develops policies to spur deployment of renewables, there is a growing interest in international energy law [7].

- *United States:* The predominant sources of energy are oil, coal, and natural gas in the US. Oil remains the largest source of energy because it continues to be the main fuel for motor vehicles. Renewable energy sources such as wind, hydropower, solar energy, biomass, and geothermal energy constitute roughly 8 percent of energy consumption [8]. Energy is regulated through the Department of Energy and the state regulatory agencies. The Department sets federal policy and law for its 50 states. US along with the European Union lead the international community in setting energy law and policy. Several other nations look to them for guidance in establishing new energy law and policy. Washington DC passed the most ambitious clean energy law in the US. Houston is the energy capital of the country.
- *European Union:* In 2009, the EU adopted a comprehensive policy setting mandatory renewables targets for its 27 member states, covering renewable energy in the electricity, transportation, and heating and cooling sectors. Each EU member state is to expand the use of renewable energy sources (solar, offshore and onshore wind, geothermal, hydro, biomass and landfill gas, sewage gas, and mine gas). Germany is currently the most successful nation in promoting of renewable energy. It stands out in its success in using advanced feed-in tariff mechanisms to expand deployment of solar PV. Germany has a priority connection and purchase policy for renewable generators [9]. France is in the leading position regarding renewable energy development.
- *China:* Energy demand in China has increased rapidly and reached an unprecedented level. China's 2005 Renewable Energy Law (amended in December 2009) is responsible for rapid growth of renewables in China. The Renewable Energy Law is meant to promote the development and utilization of renewable energy, increase energy supplies, improve the energy structure, and expand local demand for energy for industry, buildings, residential use, heating, transportation, agriculture, etc. Since 2006,



China has witnessed a rapid growth in renewable energy resources putting it among the world's leading nations in renewable energy generation [9]. China is closing down smaller, inefficient power stations and replacing them with large, modern and more efficient power stations. Figure 3 shows the general framework of China's renewable energy law and policy [10].

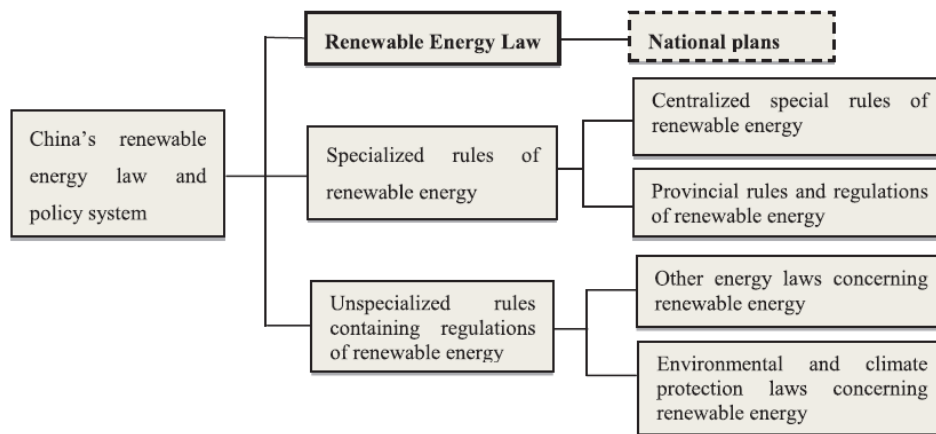


Figure 3: General framework of China's renewable energy law and policy [10]

- **Africa:** Energy is a scarce commodity in Africa and government priorities are geared towards ensuring energy access and alleviating or eradicating poverty. Domestic consumption should spur developing alternative energy sources and investment in renewables. Legislation is needed to ensure that renewable energy sources continue to receive some support. Throughout the continent, there are two challenges which legislation must address. The first is that demand is massive, while the second challenge is transmission and distribution. Some Chinese renewable energy companies in wind and solar energy have invaded Africa since 2009 [11].
- **India:** The Government of India has experienced some challenges such as public protests and judicial scrutiny. Some Indian political and civil organizations have expressed serious doubts and apprehension about the safety of nuclear facilities. In spite of this and the Fukushima accident, India remains one of the countries still committed to pursuing a nuclear energy. The expansion of nuclear energy will create business opportunities for Indians and global nuclear corporations [12]. Indian energy law has provisions for renewable energy and non-renewable energy.
- **Armenia:** Armenia is a small country with a population of about 3.9 million. Armenia was formed from the breakup of the Soviet Union. This country is almost completely dependent on imported energy. Armenia has limited fossil fuel and coal reserves. There are no oil wells, gas wells, or refineries in Armenia. The Armenian power plants was connected to the Transcaucasian Energy System. Armenia relies on gas imports from Russia and Iran. Armenia's Energy Law was enacted in 1997 after an energy crisis in the mid-1990s [13]. Major changes to energy legislation are currently being made in Armenia.
- **Thailand:** This nation is rich in renewable energy sources such as biomass, biogas, solar, and wind. Thailand has made some effort to increase the share of renewable energy to its energy mix. Since 1961, the five-year national plan, has guided the development of Thailand in every aspect, including the energy development. The current Eleventh Plan sets strategies to promote the application of zero waste principles, support local community efforts to produce bioenergy from refuse through existing technologies, promote research and apply technology to increase food and energy crop productivities, enhance efficiency in bioenergy production, etc. [14].

Benefits and Challenges

Energy law is meant to encourage and initiate new energy infrastructure. It is through energy law that society can achieve a balance between three competing objectives (economic–political–environmental). It can be a



powerful tool for remodeling the energy sector. Change is inevitable in the energy sector. Rapid advances in technology will spur changes in energy law.

Energy law is complex and it encompasses a wide variety of types of law and client needs. In energy law, the laws and policies and markets are evolving, and most of the legal questions do not have clear answers. Several different sets of regulations—at both the federal and state levels—might apply to an issue. Practicing energy law may be challenging. It requires immersing deeply into energy law and embrace its complexity. A major concern is that burning coal, oil, and natural gas produce enormous carbon dioxide emissions. Energy law faces some challenges as society moves towards its low-carbon economy or “decarbonized economy” [15]. Regulatory instability and unpredictability could be a challenge for energy investors in some countries such as Russia. Regulatory instability refers to the probability that the rules of the game existing at the moment of investment may change [16]. The worldwide dysfunction of governments also poses challenges to the developing of energy policies that promise stability [17].

Conclusion

Energy law is designed to regulate the exploitation of energy sources while ensuring the efficient use of it. Energy law has now come to the fore. There is some academic research interest in the energy law all over the world. This makes energy law to be a growing area of legal research. Since energy law literacy is essential to careers in the energy sector, some institutions are now offering courses on energy law to both law students and non-law students interested in energy issues. The Institute for Energy Law at The Center for American and International Law is one of the world’s oldest continuing legal education providers. More information on energy law can be found in the numerous books in [18-57] and several related journals:

- *Journal of World Energy Law & Business*
- *Journal of Energy & Natural Resources Law*
- *Journal of Energy Law and Resources*
- *Indian Journal of Natural Resources*
- *Oil, Gas & Energy Law*
- *Texas Journal of Oil, Gas, and Energy Law*
- *International Energy Law Review*
- *Energy Law Journal*
- *Energy & Environmental Law*
- *Energy & Environment*
- *Energy Policy*

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