

ENERGY POLICY AND ITS IMPACT ON INDUSTRY—SECURITY INTERESTS AND THE BOTTOM LINE

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Bottom Line Up Front (BLUF)

Bottom line (almost) always wins

- National security = economic security
- Industry drives innovation
- Business always finds a way
- Business will continue to innovate

Sizing things up—US economy larger than 2nd and 3rd combined, larger than the 4th – 10th largest economies combined

These are the world's biggest economies

Based on data from the International Monetary Fund, 2018

Country	Value (in trillions)
1 United States	20.4
2 China	14
3 Japan	5.1
4 Germany	4.2
5 United Kingdom	2.94
6 France	2.93
7 India	2.85
8 Italy	2.18
9 Brazil	2.14
10 Canada	1.8

Source: IMF

<https://www.weforum.org/agenda/2018/04/the-worlds-biggest-economies-in-2018/>

Countries leading in renewables by 2022

**Three countries will account for two thirds of
global renewable expansion to 2022**



China



U.S.A



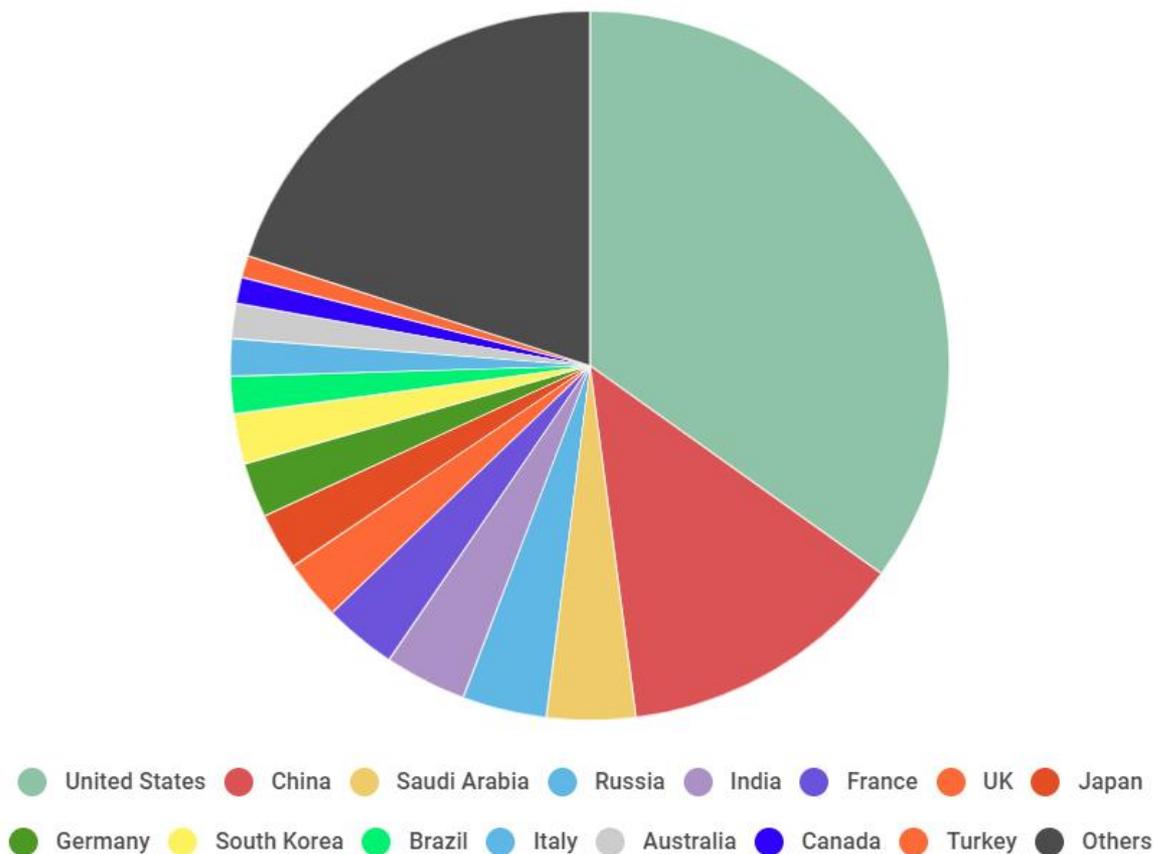
India

[iea.org/renewables](https://www.iea.org/renewables)



<https://www.weforum.org/agenda/2018/02/countries-behind-global-renewable-energy-growth/>

Top military spenders by country-- 2017



Data from SIPRI Military Expenditure Database

<https://www.defensenews.com/industry/2018/05/02/us-remains-top-military-spender-sipri-reports/>

Other points to consider—

- Virginia was established as a business venture, the result of a royal charter. The purpose of The Virginia Company was to identify profitable natural resources to repay investors. The Company had the power to govern the new colony. Thus, industry and government were one and the same.¹ Virginia is the number one state in the US for defense contracts and is home to 34 commands, supporting their energy needs, including the Pentagon and the world's largest naval base, Naval Station Norfolk, which is also where NATO ACT is located.
- US defense spending at ~\$610B accounts for just over 1/3 of world-wide defense spending.²
- 99.7% of US employer firms are small businesses (<500 employees)³
- By 2050, it is predicted the US will rank 3rd in global economies and it is possible that by 2040, the E7 economies (Brazil, China, India, Indonesia, Mexico, Russia, and Turkey) could be double the economies of the G7.⁴
- 95-96% of the world's population lives outside of the US and approximately 70% of the world's purchasing power is located outside of the US.⁵

1. "Virginia Company | Historic Jamestowne," accessed October 20, 2018, <https://historicjamestowne.org/history/virginia-company/>.

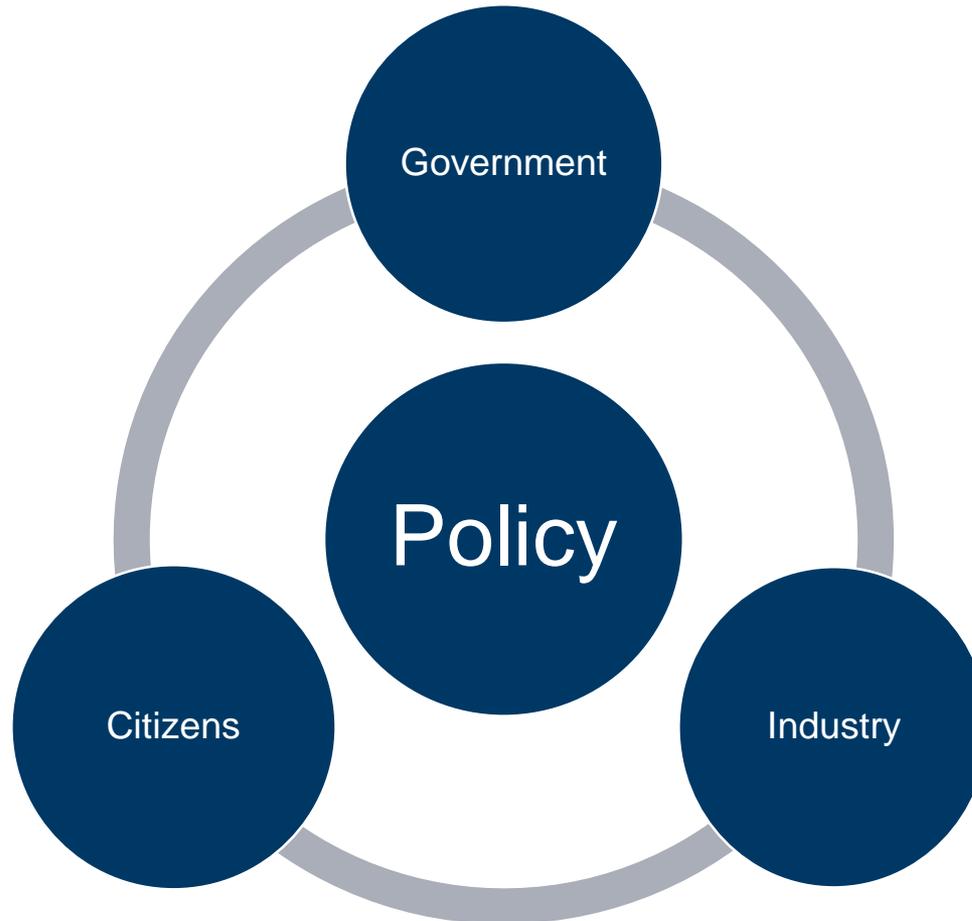
2. Daniel Cebul, "US Remains Top Military Spender, SIPRI Reports," Defense News, May 2, 2018, <https://www.defensenews.com/industry/2018/05/02/us-remains-top-military-spender-sipri-reports/>.

3. https://www.sba.gov/sites/default/files/FAQ_Sept_2012.pdf

4. PricewaterhouseCoopers, "The World in 2050," PwC, accessed October 20, 2018, <https://www.pwc.com/gx/en/issues/economy/the-world-in-2050.html>.

5. "Exporting Is Good For Your Bottom Line," accessed October 20, 2018, <https://www.trade.gov/cs/factsheet.asp>.

CREATION OF POLICY ISN'T A LINEAR ACT



Challenges with energy policies

- Innovation develops faster than policy.
- Existing policies are quickly outdated and often short-sighted.
- It can be time consuming to change policy—think Martec’s Law: technology change exponentially while organizations change logarithmically.¹
- Interest groups that influence policy development can be at odds with each other.
- Federal and state policies can not only differ but be at odds with each other—take for instance Section 369 of the Energy Policy Act of 2005 and Section 526 of the Energy Independence and Security Act of 2007.
- Policies can be well-intended but have unintended, negative consequences.

¹ <https://chiefmartec.com/2013/06/martecs-law-technology-changes-exponentially-organizations-change-logarithmically/>

Energy Policy Case Studies

Examples of government, industry and citizens influencing energy policies

- Energy Independence and Security Act of 2007—phased out inefficient lightbulbs starting in 2012.¹ Subtitle C, Section 526, dealt specifically with federal procurement and acquisition of alternative fuels, which DID spur debate. Trump proposes Affordable Clean Energy Rule to replace Obama’s Clean Power Plan.
- During an open comment session for the Virginia Energy Plan, a 10 year strategic energy policy being developed by the new Governor, Ralph Northam, Virginia businesses using at least 5 megawatts requested to be able to bundle locations to meet the threshold requirement to be able to shop around for alternate power suppliers instead of relying on the state’s two investor-owned utilities.²
- Renewable fuel standards (RFS) policy initially developed in 2005, mandated minimum requirements for how much alternative fuel must be blended into commercial transportation fuels. Based on outdated policy that failed to consider advancements in alternative fuel technologies, resulting in American Petroleum Institute (API) to file suit against the Environmental Protection Agency for what it viewed as an unfair policy that penalized oil and gas companies for failing to meet the RFS mandates.³
- Major civil unrest and protests around the development of the pipeline, progress was halted for a period of time during the Obama administration, pending further environmental review, but that was quickly reversed under the Trump administration.⁴ Despite construction continuing, protesters were able to get investment companies to divest of their support of the pipeline.⁵
- “Climate kids” filed a federal lawsuit against the USG “alleging violations of their constitutional rights to a safe and livable atmosphere.”⁶

1. <https://www.epa.gov/cfl/how-energy-independence-and-security-act-2007-affects-light-bulbs>

2. <https://energynews.us/2018/09/14/southeast/virginia-companies-ask-for-better-access-to-renewable-power/>

3. Robert Johnsen, “Reexamining Outdated U.S. Energy Policy Through Alternative Fuels,” *Oil & Gas Journal* 111, no. 11A (November 11, 2013)

4. <https://insideclimatenews.org/news/13112017/dakota-access-pipeline-protests-standing-rock-chairman-dave-archambault-interview>

5. <https://www.theguardian.com/us-news/2017/mar/21/dakota-access-pipeline-ing-sells-stake-loan-standing-rock>

6. <https://www.cnn.com/2018/10/30/health/sutter-climate-kids-rally/index.html>

The Paris Agreement

Major stakeholders in the US are still committed to the principles of the Agreement

- After Trump's announcement to withdraw, 11 US states, Washington DC and Puerto Rico said they would continue to uphold the US' commitment to the Agreement.¹
- The decision to withdraw was opposed by more than 550 state legislators from 45 states with a population of nearly 300,000,000 constituents.
- Various cities still plan to pursue renewables—30 cities, three states, 80 university presidents and more than 100 companies have started another group with similar goals.³
- Major US companies opposed the withdrawal from the Agreement and still plan to pursue sustainable energy goals as it is simply good business practice by helping the US remain competitive and creating jobs.⁴
- Majority of Americans in coal-heavy states favor increased use of renewables.⁵

1. <https://www.businessinsider.com/us-states-uphold-paris-agreement-2017-6>

2. <https://www.cnn.com/2018/05/31/after-trump-paris-climate-agreement-exit-states-take-the-lead.html>

3. <https://www.businessinsider.com/pittsburgh-paris-agreement-trump-renewable-energy-2017-6>

4. <https://www.usatoday.com/story/tech/news/2017/06/01/apple-facebook-google-ceos-urge-support-paris-climate-agreement/102377706/>

5. <https://www.cbsnews.com/news/majority-of-americans-in-coal-reliant-states-prefer-renewables/?ftag=CNM-00-10aag7e>

How does this translate into military applications?

How are operational energy issues impacted?

The mission of ODASD(OE) is to enhance military capability, readiness, and resilience for the warfighter, while mitigating risk and cost in the supply and use of energy in operations and training. ODASD(OE) has four primary lines of effort:¹

- Future force requirements— “...*investing* in innovation tailored to an enhanced ability to operate in contested environments.”
- War gaming, modeling and simulation— “With the integration of realistic constraints to logistics capacity and threats to our fuel storage and distribution, our efforts will improve Department decision-making in operation plans, concept and capability development, and program *investments*.”
- Innovation— “Through the ASD(EI&E), the ODASD(OE) oversees the Operational Energy Capability Improvement Fund (OECIF) to improve the Department’s military capabilities through targeted *investments* in operational energy science and technology (S&T).”
- Warfighter support— “We *invested* \$4 million in 2017 to adapt Service training and education programs in each of the Services to increase operational reach and readiness.”

How does this translate into military applications?

How are installation energy issues impacted?

DoD's installation energy strategy is designed to ensure mission assurance for the warfighter, reduce energy costs, and improve the energy resilience of our fixed installations. This includes:¹

- Reducing the demand for installation energy and water through conservation and efficiency
- Expanding the supply distributed (on-site) energy for mission assurance
- Improving the energy grid and storage resilience of our installations
- Leveraging advanced technology for energy resource efficiencies and increased security
- Improving the cybersecurity of mission critical facility related control systems

1. https://www.acq.osd.mil/eie/IE/FEP_index.html

Why does this matter to you?

How to deal with the variable nature of US energy policy

- Theory vs. reality
- Flexibility is vital
- Diversity is key to success/security.
- Good or bad, nothing lasts forever; focus on the long game.
- Keep on keeping on—business leaders will find a way to succeed.

1. <https://chiefmartec.com/2013/06/martecs-law-technology-changes-exponentially-organizations-change-logarithmically/>