ENERGY COMPETITION: FROM COMMODITY TO BOUTIQUE AND BACK

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ABSTRACT: Energy products such as power, gas, and oil have long been the world's premier commodities. Consumers demand that power and fuel are available when they want it and they prefer to pay less for it. Few know or care where their fuel or power comes from. So for years energy companies believed that efforts to differentiate their products were mostly ineffective—they were re-signed to compete on price in fierce global commodity markets. But in recent years, a new focus on regulating how energy commodities are produced has begun to splinter previously integrated energy markets, creating markets for boutique fuels and power, and allowing energy firms to restrict output and raise prices without fear of competition.

This Article documents the causes and effects of this trend toward boutique energy markets. It shows how consumer-driven supply-chain certifications that call for environmentally sound production methods have gradually evolved into government-mandated production standards. These standards take identical commodities—barrels of oil or kilowatt-hours of electricity—and differentiate them based on how they were produced. Most typically, products that were produced using particularly greenhouse gas intensive methods are banned or otherwise penalized. These supply-chain standards have been adopted by countries, but increasingly also by individual provinces, states, and localities. As a result, they are breaking the trade links in global energy supply chains. To sell in each of these markets, energy companies must be able to certify the production methods used by their entire supply chain. To do this, they must either control the entire vertical supply chain or only deal with the subset of companies that is prepared to meet the regulatory requirements of each jurisdiction that might import fuel or oil. Inevitably, this is increasing concentration of power and fuel markets.

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The Article suggests how to turn energy back into a commodity without sacrificing the goals of the supply-chain standards. It suggests that jurisdiction specific supply-chain standards be replaced with one or two agreed supply-chain standards that would allow more energy companies to compete across jurisdictions. And it offers recommendations for how competition and energy regulators can work together to ensure that energy standards do not undercut the aims of competition policies.

CONTENTS

1. THE FALL OF ENERGY COMMODITIES & THE RISE OF BOUTIQUE ENERGY 3
2. HOW COMPANIES EXPLOIT BOUTIQUE ENERGY MARKETS 4
3. MAKING ENERGY A COMMODITY AGAIN 10
4. CONCLUSION 11

BIBLIOGRAPHY 12

1. THE FALL OF ENERGY COMMODITIES & THE RISE OF BOUTIQUE ENERGY

Fuel and power have long been archetypal commodities. Consumers demand cheap gasoline and electricity and for decades they paid little attention to the brands that they are consuming. Absent any kind of customer loyalty, producers were forced to compete ruthlessly on price, driving down the cost of energy.

In the last twenty years, however, consumers have begun to favor energy commodities produced in particular ways: "green power," "ethical oil," and "clean fuels."[1] Of course, how energy is produced generally has no impact on the final product. Electricity on a power grid is all the same, no matter whether it was produced by the wind, the sun, splitting an atom, or burning a lump of coal. Gasoline sold to consumers is all the same, no matter where suppliers purchased the oil that was refined to produce it. Ethanol is all identical, no matter whether it was produced from a sustainable agricultural system or from slash-and-burn farming. Yet, consumers have begun distinguishing between each of these physically identical products, insisting that they be produced by certain methods. In response, companies are now turning to third-parties that can certify their sustainable production practices.

In the past ten years, government standards have extended this trend toward scrutiny of energy supply chains, mandating that energy products be produced by certain methods.[2] States like California and provinces like Quebec and Ontario now require that when power companies import electricity, they pay for the greenhouse gas emissions associated with producing that power in other jurisdictions. And the European Union and the United States now require that a percentage of fuel imports be produced using methods that limit greenhouse gas emissions abroad. California and other states and Canadian provinces have even more aggressive targets for reducing greenhouse gas emissions from energy supply chains in other jurisdictions.

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[1] Ruhl and Salzman, 2018.

[2] Coleman, 2014.

These new supply chain regulations have one massive upside for the energy companies that they target: they splinter an undifferentiated commodity market. Before these regulations, the only way that an energy company could sell more of its product was to undercut all other fuel and power producers, providing lower prices to energy consumers. Now there is another path, an energy company can carve out its own niche, selling in nations or provinces where few other companies can provide fuel and power that combines with the diverse production standards required in each jurisdiction.

Every commodity producer dreams it can brand its product so consumers will purchase it even when it is more expensive than the competition.[3] This is what producers hoped to accomplish by labeling their fuel and power products as "green," "ethical," and "clean." For energy producers, legal supply chain standards are better than a dream come true: the government *requires* consumers buy their product over identical cheaper products. Energy companies have been quick to take advantage of these requirements, raising prices in niche markets where only a few producers can provide compliant fuels. Accordingly, liquid fuel in these jurisdictions have come to be known as "boutique fuels." This Article adopts this colloquialism to describe a similar process in electricity markets, labeling these high-priced fuel and power products, produced by jurisdiction-approved methods, as "boutique energy."

2. HOW COMPANIES EXPLOIT BOUTIQUE ENERGY MARKETS

When a jurisdiction adopts a supply-chain standard for previously undifferentiated energy commodities it limits competition in several ways. For one thing, if a fuel or power company wants to sell in this jurisdiction it must be able to certify how its product was created. Energy supply chains frequently extend around the globe, which makes this a challenge, particularly for fuel companies that may purchase oil from different sides of the globe on a daily and unpredictable basis. Only two kinds of companies can compete in a market with supply chain standards: vertically-integrated companies that control all stages of production and companies large and sophisticated enough to monitor all components of their supply chain.

[3] McQuiston, 2004; Sinclair & Seward, 1988.

The largest, vertically-integrated companies are better able to account for greenhouse gas emissions throughout their supply chain. These vertically-integrated companies often control all the significant greenhouse gas emissions in the supply chain of their delivered fuels—a company like ExxonMobil often extracts oil and gas, gathers these fuels, refines them, and distributes them to final end-users.[4] This means the company can measure and control emissions along its entire supply chain, making compliance with boutique fuel mandates a simple optimization process.

Even when no companies control the entire energy supply chain, larger companies are afforded advantages in complying with supply chain standards.[5] First, they typically have the resources required to account for emissions throughout their complex supply chains. Smaller companies often lack the systems, software, and human resources to comprehensively track how each of their suppliers creates their products.[6] Second, they typically have enough leverage with suppliers to demand that they account for their greenhouse gas emissions. They may even have enough leverage to demand that their suppliers improve their emissions performance.

Finally, energy supply chain standards are sometimes *intended* to have anti-competitive effects. For example, when California adopted its low carbon fuel standard, which mandates that transportation fuels consumed in the state be produced by low-carbon methods, limiting competition from out-of-state producers was one of its stated aims.[7] To this end, it exempted domestic oil producers from its regulation and altered federal estimates of greenhouse gas emissions to favor its domestic ethanol production. This is the global pattern: when jurisdictions consider the supply chain of energy, their controversial assumptions systematically favor domestic energy producers over foreign ones.[8]

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[4] Rostow, 1952.

[5] Preuss 2005

[6] Pagell & Wu, 2009.

[7] Coleman, 2014.

[8] Coleman, 2018a.

Jurisdictions that adopt supply chain standards see a decrease in competition and an increase in prices. Companies that can corner these markets are insulated from competition and reaping large financial rewards. For this reason, oil refiners often favor boutique fuel standards that will insulate them from competition.[9]

Thus, it is no surprise that in California—the state with the most unique and highly-developed fuel standards—fuel providers earn the highest profit margins.[10] Gasoline prices are much higher in California than in other U.S. states and the additional cost of producing California-specific fuel accounts for only a fraction of that cost.[11]

The ruthless competition that otherwise keeps energy prices in check is unable to operate in California. Small companies often do not have the sophistication to comply with the state's convoluted fuel requirements. Even if they did, they would still have to purchase from the few refineries that can comply with the state's fuel mandates.[12] And of course, a single, isolated state market, even one as big as California, is not large enough to support many competing oil refiners. Just two oil companies—Chevron & Tesoro—control 60% of California's gasoline market. Two more—Valero & Phillips 66—control 30% more.[13]

Even worse, when local refiners cannot produce enough fuel for a boutique market like California, refiners outside the jurisdiction cannot make up the shortage because they do not manufacture fuel that meets its standards. Refining facilities all have maximum capacities, so in-state refiners simply ramp up their prices until demand falls into balance with supply—often at prices that far exceed the refiner's cost of production. Thus boutique refiners benefit both from consistently elevated margins and regular windfalls caused by temporary shortages. These elevated prices are recompense they receive for being one of the few companies

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[9] Peterson & Mahnovski (2003).

[10] *Id.*

[11] *Id.* ; Borenstein *et al.*, 2004; Wolak, 2004.

[12] Powers, 2012.

[13] California Energy Commission, 2018. So these four companies control 90% of California's refining capacity. By contrast, in Texas, the top four refiners control just 60%, the top two companies control only 40%.

willing to make significant capital investment dependent on a single market and able to navigate its complex and demanding regulations. And that price is paid by consumers in California and other states with these boutique fuel standards.

California's fuel standards are just one example of how boutique energy standards for fuel and power are fracturing global energy markets. Numerous other jurisdictions have adopted hese standards for producing fuels using lower carbon methods, which are often misleadingly labeled "low carbon fuel standards:"[14] the United Kingdom, the European Union, Oregon, the United States, and British Columbia.[15] Canada and the U.S. state of Washington are in the process of adopting their own standards for fuel production.[16] Each time a new jurisdiction adopts ones of these new standards, it limits the suppliers that can provide it with fuel.

These fuel-production standards are just one type of standard that is fractioning previously integrated fuel markets—in fact, they are really the third wave of boutique fuel standards. It begin in 1990 when the U.S. Congress mandated that areas with poor air quality adopt cleaner-burning Federal Reformulated Gasoline. Shortly thereafter states and cities that were not addressed by this mandate often began adopting their own standards for fuel that was not quite as exacting as the federal mandate but somewhat less expensive.[17] As these boutique fuel standards threatened to break-up the national refining market, Congress stepped in and froze the number of standards in the Energy Policy Act of 2005: from now on when states wanted to introduce a new fuel standard they would have to find a pre-existing one to retire.

Although the Energy Policy Act of 2005 stopped further fragmentation in standards for clean-burning fuels it set off a different kind of fragmentation in renewable fuel mandates. The Act also mandated

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[14] All ethanol has the same amount of carbon, as does all finished gasoline. After all, breaking the carbon chains in the fuel is what powers the engine. These standards mostly address the amount of carbon that is emitted in creating the fuel, not the amount of carbon in the fuel. Coleman, 2014.

[15] Baral, 2009; Scott, 2017.

[16] *Id.*

[17] U.S. Government Accountability Office, 2005.

that U.S. transportation fuels contain increasing volumes of ethanol. But perhaps more importantly, states followed up this effort with their own renewable fuel mandates—10 states now have mandates for specified volumes and types of biofuels.[18] These biofuel standards, layered on top of the clean-burning fuel standards, set the stage for the third wave of boutique fuel standards, the low carbon fuel standards that are now being adopted in jurisdictions across North America and the globe. Thus in many jurisdictions, gasoline, once the archetypal commodity, is now provided by just a few retailers with significant market power.

In recent years, the trend toward boutique energy has spread to electricity markets. In the United States, states are the principal regulators of electricity pricing and until 1980 most electricity was sold by vertically-integrated monopoly utilities subject to cost-of-service regulation. But over the past forty years the U.S. Congress, the Federal Energy Regulatory Commission, and state policymakers have gradually moved much of the United States to competitive energy markets: forcing monopoly utilities to sell their power plants, transmit power for competing power providers, and authorizing market-based pricing.[19] As a result, a national electricity market has emerged that allows previously isolated state markets to benefit from the increased liquidity and competition provided by a larger market.[20] Building this national market has grown particularly crucial because it can bring cheap renewable power from the interior plains and deserts to the Midwestern, Southern, and Coastal states where power is most needed.[21]

This integration would seem to be natural and beneficial: after all, as long as electricity meets its specifications for voltage and frequency it would hardly seem to matter where it comes from. Indeed, once electricity leaves a power plant, there is no way to tell where that electricity "went"—instead it contributes to a common pool of voltage that is drawn off by each consumer. So if a power plant in a neighboring state

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[18] The states are Hawaii, Florida, Oregon, and Missouri, Montana, Pennsylvanian, Washington, Louisiana, Iowa, Kansas. United States Department of Agriculture (2015).

[19] Joskow, 2008; Coleman, 2018b.

[20] Butters & Spulber, 2013.

[21] Coleman, 2018c.

can provide that power more cheaply than a local plant, there seems little reason to prevent it.

Nevertheless, this integration is now threatened by the rise of bespoke power standards. At the beginning of the new millennium many states begin adopting "renewable portfolio standards" that specified that a certain percentage of electricity had to come from renewable power sources such as wind, solar, and hydroelectric power; more than half of the United States have now adopted such standards.[22] These standards are remarkable because they do not prescribe how power is *produced within the state*—that would be a natural matter of state concern because of the different environmental problems caused by power sources such as coal and oil power. Instead, they prescribe how power *consumed within the state* may be produced, no matter where it is produced. This is an odd choice because power consumption is identical regardless of how it was produced. But this choice means that the state cannot import power unless out-of-state producers can track and control their supply chains to the satisfaction of the importing state.

When these renewable portfolio standards were introduced, they had little effect on state-to-state electricity trade because their goals were modest—they often set aside less than 10% of state electricity for these bespoke energy standards. Now, however, these standards are ramping up, with some scheduled to reach 40, 50, or even 75% in coming years. As these standards grow stricter, they will have a more severe impact on state-to-state energy trade. And they are now being further complicated with more standards for imported electricity—California, for instance, now forces imports to account and pay for all greenhouse gases emitted during the course of electricity production. Thus, it will be increasingly difficult to trade electricity on a commodity basis. Producers will not be able to offer power based on price and quantity—instead they will have to account for numerous other attributes. Was the electricity low-carbon? How much so? Was it solar power? Or wind? The United States brief experiment with commodity electricity markets may fragment into jurisdiction-by-jurisdiction boutique power markets.

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[22] Wiser *et al.*, 2007.

3. MAKING ENERGY A COMMODITY AGAIN

The very foundation of modern competition law—its justification and its origin—was in the battle to make commodity markets function as they should.[23] The first trust-busters broke up companies that attempted to corner markets in industrial production of oil, tobacco, and steel. The reward of this work was a century of unending competition in fuel markets. And the most important trend of the last four decades in power markets has been the introduction of competition to markets that had previously operated by monopoly. This progress is now endangered by boutique energy standards that are splintering previously integrated energy markets and creating niches where fuel and power companies can exercise inordinate market power. To make energy a commodity again, regulators should take three steps.

First, this danger can be mitigated by harmonizing supply-chain standards across different jurisdictions. If jurisdictions can agree on what kind of fuel and power is "clean" or "ethical," energy companies will be able to compete in multiple jurisdictions. And smaller companies will find it easier to comply with a single standard: they will not have to navigate a maze of conflicting regulations and their suppliers, faced with a unified standard, will be ready and willing to comply. And if jurisdictions had to harmonize their supply-chain standards, they could no longer discriminate against foreign producers.[24]

The difficulty with harmonizing fuel and power standards is that some of their appeal is the ability to fend off foreign imports and prescribe standards for other jurisdictions. Ultimately, to harmonize state standards may require federal intervention requiring harmonized standards. To harmonize standards between countries, countries will have to address this issue during trade talks. Environmental groups will be wary of subjecting domestic energy regulation to trade negotiations.[25] But harmonized fuel and power production standards would also be more protective of the environment because they would focus the standards on commonly agreed environmental metrics rather than protectionist distractions.

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[23] Posner, 2009; Peritz, 2000.

[24] Coleman, 2014.

[25] Esty, 2001.

Second, competition and energy regulators should work together to ensure that energy supply chain standards do not harm consumers. Energy regulators should consider the tradeoff between controlling production standards and encouraging competition. To do this, they should consult with competition regulators who can provide them with analysis and advice on how the regulations that they are contemplating could impact energy competition. This advice would allow energy regulators to decide whether it would be worth it to simplify or even forgo certain standards if they would have a severe impact on energy competition. At a minimum, competition regulators could guide energy regulators toward supply-chain standards that would have a smaller impact on competition. For example, if these supply chain standards were harmonized with the other jurisdictions where the state's energy competitors operate, they would have little impact on competition.

Third, at a minimum, when supply-chain standards are adopted, competition regulators should monitor carefully for signs that companies are unlawfully exploiting market power. Unfortunately, boutique energy standards grant the remaining companies market power that they will naturally exploit without taking any unlawful steps. These supply chain standards are, in practice, anti-competitive and companies with market power will charge more than the marginal cost of production. But competition regulators should monitor to ensure that these anti-competitive regulations are not exacerbated by anti-competitive and unlawful behavior by energy companies.

4. CONCLUSION

The trail-blazing trust-busters of competition law broke up monopolists who had cornered commodity markets such as oil, tobacco, and steel. And no wonder that companies like Standard Oil worked so hard for a monopoly: without a monopoly, consumers would simply choose the cheapest fuel, and the prospect of endless cost-cutting might dampen the spirits of the most ardent titan of industry. In recent years, however, jurisdiction-by-jurisdiction standards for producing fuel and power have created a new opening for market power in the energy industry. These boutique energy standards have fragmented markets for gasoline and electricity and allowed energy companies to substantially raise their prices. It is past time for energy regulators to begin considering the impact of their fuel and power standards on energy competition

and to begin working together to ensure that these standards do not break down cross-border trade. Energy and competition regulators in neighboring jurisdiction can ensure that new energy regulations do not squander the consumer benefits of integrated commodity markets.

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