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Low-Carbon Energy Law & Policy: What Wyoming
Lawyers Need to Know

Kipp Coddington

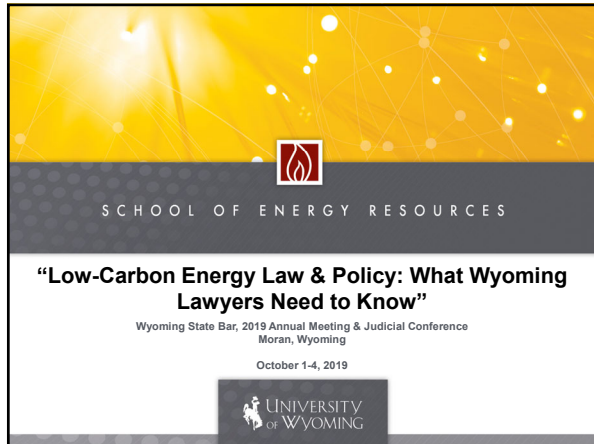
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A chemical engineer and lawyer, Mr. Coddington is a low-carbon technology and climate policy expert with commercial project and academic research leadership experience. He currently is the Director of Energy Policy & Economics with the School of Energy Resources at the University of Wyoming. He is an international expert in low-carbon and carbon management law, policy and technology, having testified twice before committees of the U.S. Congress on the topic. He is the Convenor and immediate past chair of Working Group 6 (CO₂ enhanced oil recovery) of the International Organization for Standardization's Technical Committee 265 (Carbon dioxide capture, transportation, and geological storage). He co-founded the North American Carbon Capture & Storage Association and served on various sub-national CCS advisory panels. Based in Washington, D.C. for more than 20 years, he practiced law for major international firms, ultimately living in London to advise clients on Kyoto Protocol carbon credit deals. He co-founded a boutique energy and environmental law firm, leading its Washington, D.C. office. He is licensed in the District of Columbia and the Commonwealth of Virginia. He is not licensed in the State of Wyoming.

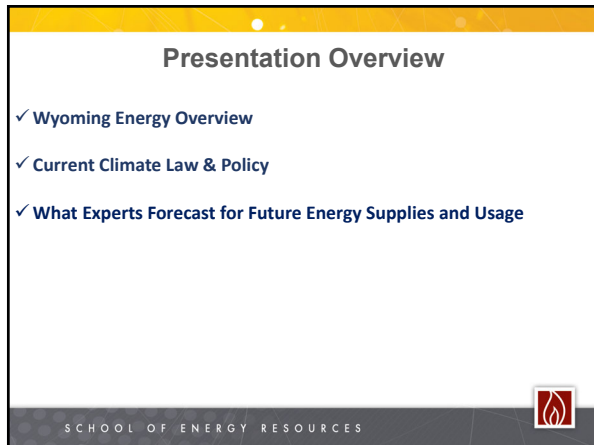
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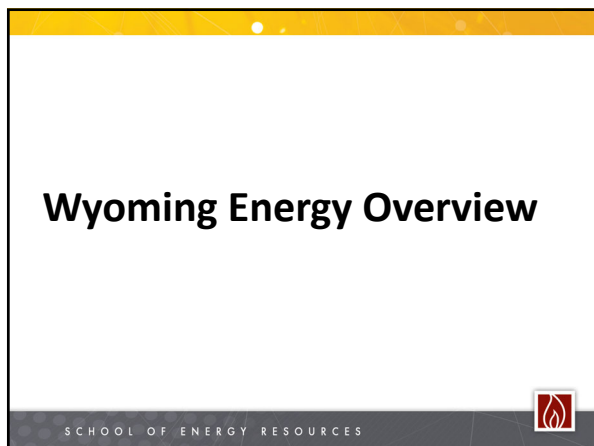
Mr. Terrell is an attorney with the law firm of Crowley Fleck PLLP in Sheridan, Wyoming, practicing in the areas of oil and gas and commercial litigation. He is a recent graduate of the University of Wyoming College of Law and the Haub School of Environment and Natural Resources where he earned his Juris Doctorate and Masters of Environment and Natural Resource. While completing these degrees he was selected as the Chiles and Evelyn Plummer Interdisciplinary Excellence Scholar, Clarence A. Brimmer Scholar, and Salt Creek Energy Excellence Scholar. During his second year of law school, he served as a research assistant for Professor Tara Righetti and continued to work with Professor Righetti as a Legal Research Fellow for the University of Wyoming CarbonSAFE grant funded by the DOE. He also served as an Article Editor for the Wyoming Law Review and represented the College of Law at various national moot court and negotiation competitions. He currently serves as President of the Sheridan and Johnson County Bar Association and Deputy Chief of Logistics for the Wyoming ENGAGE Council. He is licensed to practice law in the state of Wyoming.



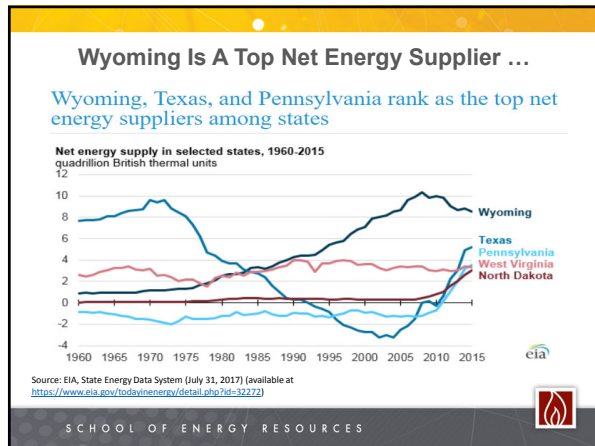
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... And Wyoming Dominates in Supplying Other States with Coal & Natural Gas

Wyoming has the smallest population of any state and ranks 42nd out of 51 in terms of energy consumption. Wyoming leads the nation in coal production, accounting for more than 40% of the national total in 2016, and is the sixth-highest natural gas-producing state.

In recent years, Wyoming coal—particularly from the Powder River Basin—has been used at power plants in more than 30 states. Most of the state's natural gas is shipped through pipelines crossing into Utah and Nebraska and delivered to markets in both the Midwest and West Coast.

Most of our natural gas is sent out of state, too

As a result, it matters greatly how people and markets outside of Wyoming view and treat the energy they receive from us

Source: EIA, State Energy Data System (July 31, 2017) (available at <https://www.eia.gov/todayinenergy/detail.php?id=32272>)

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Climate Law & Policy

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Regulation of GHG Emissions is Authorized Under Federal Law; & EPA is Regulating

- ✓ **U.S. Supreme Court:** Greenhouse gases (GHGs) are “air pollutants” under the Clean Air Act and the U.S. Environmental Protection Agency (EPA) has authority to regulate them (*Massachusetts v. EPA*, 549 U.S. 497 (2007))
- ✓ **EPA:** EPA has been exercising that authority for the past decade, and to this day continues to regulate GHG emissions from both stationary (e.g., coal-fired power plants, natural gas separation plants, other fossil facilities) and mobile (e.g., vehicles) sources

While the Trump Administration has proposed to modify many of these GHG emission standards, key legal aspects (e.g., Endangerment Finding) remain intact and Massachusetts v. EPA remains the law of the land

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Many States Have Separate Climate-Related Policies

GHG Emission Standards for Power Plants

GHG Emission Targets

Source: Center for Climate and Energy Solutions (Feb. 2019 data)

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Many States Have Separate Climate-Related Policies

Renewable/Clean Energy Electricity Portfolio Standards

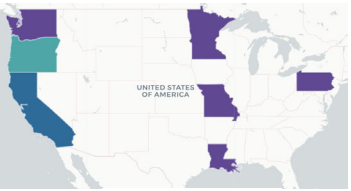
“Decoupling” Policies (form of energy efficiency)

Source: Center for Climate and Energy Solutions (Feb. 2019 data)

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Many States Have Separate Climate-Related Policies



U.S. State Low Carbon Fuel Standard

- AFS
- LCFS
- LCFS & AFS

Source: Center for Climate and Energy Solutions (Feb. 2019 data)

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Climate Policy Has Been a Fixture of International Law for Decades

- ✓ United Nations Framework Convention on Climate Change (1992)
 - o U.S. is a Party
 - o "Objective" is "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent **dangerous anthropogenic interference with the climate system**"; generally understood to mean global annual mean surface temperature increase should not exceed 2°C above pre-industrial levels
 - o "Pre-industrial levels" (~1750) were about 280 ppm CO₂
 - o The 2°C target equates to about 450 ppm CO₂ by 2050
 - o *As of February 16, 2019, the level was 412 ppm CO₂*
- ✓ Kyoto Protocol
 - ✓ U.S. not a Party, but relevant for Wyoming because we export energy
 - ✓ "Top-down" approach
 - ✓ Effectively ends next year

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Paris Agreement: the New International Climate Treaty

"Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels ..."

- ✓ Takes effect in 2021; will replace the Kyoto Protocol
- ✓ Last fall's Intergovernmental Panel on Climate Change's (IPCC) Special Report on Global Warming of 1.5°C drives toward "1.5°C by 2030"-type goals/metrics
 - o *This is a primary motivator for the Green New Deal in Congress*
- ✓ U.S. is a Party, but has filed papers to start the four-year process of withdrawing
- ✓ **Requires the effective de-carbonization of all fossil energy systems by 2050**
- ✓ "Bottom Up" approach, vice the Kyoto Protocol's "Top Down" approach
- ✓ Some U.S. jurisdictions have separately agreed to comply with it regardless of what the federal government does

Sources: Paris Agreement, art. 2 (FCCC/CP/2015/L.9); IPCC Special Report – <https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ippcc-special-report-on-global-warming-of-1-5c-approved-by-governments/>

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Putting it All Together: What Experts Forecast for Future Energy Supplies and Usage

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Driven Largely by Economics & Climate Policy, An “Energy Transition” is Underway

✓ General Trends for Electricity Generation

- Flat demand, driven in part by energy efficiency improvements
- Improving performance and economics for renewable technologies
- Abundant, low-priced natural gas pressuring coal, renewables, nuclear
- Grid-scale storage technologies anticipated to improve in the years and decades ahead

✓ General Trends for Transportation Fuels

- Push is on for electricity as a transportation fuel
- Efficiency considerations, too
- Some countries in Europe have enacted future bans on the internal combustion engine

✓ Societal/Investor Related Considerations

- Sustainability considerations are intertwined with nearly all aspects of private sector decision making, and have been for some time
- The UN's 2030 Sustainable Development Goals, which include “Affordable & Clean Energy” (Goal #7), now influencing corporate market behavior

✓ Wyoming Considerations

- California's 2045 zero-carbon electricity law; Oregon's cap-and-trade bill; future of our coal fleet; others
- Non-8tu markets for coal (carbon engineering)
- CCS/CCUS/CO₂-EOR as economic drivers
- Natural gas' dominant role going forward
- Wyoming has tremendous renewable resources, too – building transmission to get our wind delivered elsewhere
- UW engaged in research on wind, REE's, grid-scale energy storage (small, initial desk-top study led by INL), other
- Coal exports
- A potential federal “deal” in 2021 or 2025, perhaps with billions of dollars in CCS/CCUS support?

Source: <https://sustainabledevelopment.un.org/?menu=1300>

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EIA Forecasts Coal at 17% of Electricity Generation by 2050, Down from 28% Today

Electricity generation from natural gas and renewables increases, and the shares of nuclear and coal generation decrease—

Electricity generation from selected fuels

(Reference case)

billion kilowatthours

2018

history

projections

2010

2020

2030

2040

2050

natural gas

renewables

nuclear

coal

34%

18%

15%

28%

31%

12%

17%

Renewable electricity generation, including

end-use (Reference case)

billion kilowatthours

2018

history

projections

2010

2020

2030

2040

2050

solar PV

wind

geothermal

hydroelectric

other

13%

3%

20%

19%

4%

5%

Source: EIA AEO 2019, slide 21 (available at <https://www.eia.gov/outlooks/aeo/pdf/aeo2019.pdf>)

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Wyoming's Separate CCS/CCUS Legal Regime

Wyoming law:

- ✓ Specifies who owns the pore space (Wyo. Stat. § 34-1-152 (2017))
- ✓ Establishes permitting procedures and requirements for CCS sites, including permits for time-limited research (Wyo. Stat. § 35-11-313 (2017))
- ✓ Provides a mechanism for post-closure MRV via a trust fund approach (Wyo. Stat. § 35-11-318 (2017))
- ✓ Provides a mechanism for unitization of storage interests (Wyo. Stat. § 35-11-315 (2017))
- ✓ Specifies that the injector, not the owner of pore space, is generally liable (Wyo. Stat. § 34-1-513 (2017))
- ✓ Clarifies that vis-à-vis storage rights, production rights are dominant but cannot interfere with storage (Wyo. Stat. § 30-5-501 (2017))
- ✓ Provides a certification procedure for CO₂ incidentally stored during EOR (Wyo. Stat. § 30-5-502 (2017))

Source: Wyoming Statutes




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For More Information

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“Low-Carbon Energy Law & Policy: What Wyoming Lawyers Need to Know”

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As a major exporter of both fossil and renewable energy, Wyoming is influenced by a growing number of low-carbon laws and policies that are in effect internationally, nationally, regionally and in many other States. These requirements generally apply to the production of primary energy (e.g., coal, natural gas and oil) and the subsequent use of that energy to generate electricity, transportation fuels and heat. Designed with the Wyoming practitioner in mind, this course will provide an overview of these requirements while highlighting the myriad of compliance risks and business opportunities in the Cowboy State associated with them.

Introduction

The State of Wyoming is subject to low-carbon energy policies in effect elsewhere for many reasons. First, Wyoming exports the bulk of its energy, so is subject to the low-carbon laws and regulations in effect in other jurisdictions.² Second, many power plants in Wyoming are subject to multi-state jurisdiction; this means, for example, that Wyoming energy regulators generally do not have exclusive jurisdiction over certain energy assets and facilities that are located here. Third, a non-trivial amount of Wyoming’s energy is produced on federal lands, which remain subject to the full weight of federal energy and environmental requirements, including climate change assessments under the National Environmental Policy Act (NEPA).³ Fourth and finally,

¹ Not licensed in Wyoming; licensed in the District of Columbia and the Commonwealth of Virginia.

² According to the U.S. Energy Information Administration, Wyoming is the nation’s third largest energy producing state, generation 7,788 trillion British Thermal Units of energy in the year 2017 alone. For more information on Wyoming’s energy profile, *see* <https://www.eia.gov/state/?sid=WY#tabs-3>

³ The federal government owns 30,013,219 acres in the state of Wyoming, which represents over 43.1% of all land in the state.

State of Wyoming revenues are dependent in no small part upon fossil-related production revenues, including coal production on federal lands.⁴

The State of Wyoming is starting to see some of the effects of the so-called low-carbon energy transition. The recent coal company bankruptcy filings are Exhibit A. There also is a finite number of coal-fired power plants in the United States that use Wyoming coal; those plants generally are slated to retire in the years ahead – and some are retiring earlier than anticipated. Indeed, it is quite challenging to keep up with the pace of announced coal plant retirements throughout the United States. Based on public announcements, no electric utility in the United States intends to build another coal-fired power plant, a development which of course potentially crimps domestic markets for thermal coal. As to coal exports, many of the West Coast coal export terminals have been blocked through various legal mechanisms, in part because of concerns about climate change.

These low-carbon developments are not limited to coal. When many of the States to our west speak of “decarbonization,” what they mean is taking out natural gas and oil. For better or for worse, these neighboring jurisdictions already assume that coal is in the rear view mirror. So they are moving on to tackle the next major fossil fuels: oil and natural gas. As to oil, there is a push to electrify transportation. As to natural gas, there is a similar push to replace natural gas-fired residential/commercial heating with electricity.

By the way, none of the above depends upon one’s perspectives on climate change as a scientific discipline. Instead, all of the above is largely based on enacted law and regulation.

Economics – in particular, low-cost natural gas -- are also playing a significant role in the ongoing energy transition. This program, however, is focused on legal and regulatory considerations.

The energy transition creates opportunities for the State of Wyoming, too. Renewable energy and related technologies (e.g., grid-scale energy storage) are anticipated to grow in importance in the years ahead. Advanced low-carbon energy technologies, including several under development within the State, should also see greater demand in the future.

For these and related reasons, it is imperative that Wyoming lawyers be acquainted with low-carbon energy law and policy.

⁴ For more information on the energy production on federal lands in Wyoming, *see* <https://revenuedata.doi.gov/explore/WY/#state-revenue>

Course Outline

A. Low-Carbon Energy Legal Requirements

a. Reducing & Managing Greenhouse Gas (GHG) Emissions

i. International

1. United Nations Framework Convention on Climate Change (UNFCCC)

Adopted⁵ in 1992, the UNFCCC's "ultimate objective ... is to achieve ... stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." *UNFCCC, art. 2*. The parties to the UNFCCC have generally interpreted this phrase to mean global annual average surface temperature should not exceed 2°C above pre-industrial levels. By way of context, pre-industrial CO₂ levels averaged 280 parts per million ("ppm"), and the 2°C red line advocated by the UNFCCC equates to limiting global CO₂ levels to roughly 450 ppm. As of August 26, 2019, the Keeling Curve, which measures the global CO₂ concentration from the observatory at Mauna Loa, Hawaii, showed a reading of 409.69 ppm. Parties to the UNFCCC, including the United States, must abide by various requirements – e.g., submitting an annual inventory of GHG emissions and sinks.⁶ However, the UNFCCC itself does not impose legally binding GHG emission limitations.

The UNFCCC is relevant for Wyoming lawyers for several reasons. First, it in fact imposes binding requirements on the United States (although it falls short of imposing obligations to reduce GHG emissions). Second, it underpins the Paris Agreement (discussed next). And third, it influences many corporate sustainability policies.

For the text of the UNFCCC, see <https://unfccc.int/resource/docs/convkp/conveng.pdf>

For more information, see <https://unfccc.int/process-and-meetings>

For more information regarding the Keeling Curve, see <https://scripps.ucsd.edu/programs/keelingcurve/>

2. Paris Agreement

Adopted in 2015 and taking effect in 2020, the purpose of the Paris Agreement is to "enhance[e] the implementation of the [UNFCCC], including its objective" by, in part, "[h]olding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change." *Paris*

⁵ "Adoption" is a specific action under international law. For an excellent summary of the meaning of "adoption" and related terms in this context, see <https://www.wri.org/faqs-about-how-paris-agreement-enters-force>.

⁶ The U.S. Environmental Protection Agency publishes the U.S. inventory of GHG emissions and sinks in accordance with UNFCCC requirements. See <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>.

Agreement, art. 2, ¶ 1(a). The implementation rules for the Paris Agreement are largely already in place, with the exception of the mechanisms identified in Article 6 (including carbon trading). It is anticipated that the Article 6 trading rules will be finalized at the Santiago Climate Change Conference in December 2019.

Understood to require the effective decarbonization of all energy systems (i.e., coal, oil and gas) by 2050, the Paris Agreement replaces the Kyoto Protocol.

The Paris Agreement is implemented through “Nationally Determined Contributions” (NDCs), which are country-specific commitments to reduce GHGs. This “bottom up” approach differs from the Kyoto Protocol, which utilized a “top down” approach by mandating greenhouse gas reductions and leaving it to individual nations to determine their own timelines and methods of compliance.

To view NDC’s online, see <https://www4.unfccc.int/sites/NDCStaging/Pages/All.aspx>

Nearly every country is a party to the Paris Agreement, with 197 countries signing on. In 2017, however, the United States triggered a clause which began the four-year process of withdrawing from the Paris Agreement. Even if the United States ultimately withdraws, many entities in the United States – including States, cities and companies – have adopted policies that align with the Paris Agreement’s objective and committed to take steps to reduce their GHG emissions. Several Wyoming-based companies have committed themselves to the requirements of the Paris Agreement -- e.g., Teton Gravity Research based in Jackson Hole, Wyoming.

In October 2018, the Intergovernmental Panel on Climate Change (IPCC) published a *Special Report on Global Warming of 1.5°C* that generally concluded that the international community was not on track to meet the Paris Agreement goals.⁷ See <https://www.ipcc.ch/sr15/>. Growing acceptance that the Paris Agreement’s 2°C objective will likely be breached prior to 2050 under all likely scenarios is driving discussions about Negative Emission Technologies (NET) and Carbon Dioxide Removal (CDR). NET/CDR approaches go beyond reducing GHG emissions by actually removing CO₂ from the ambient air. These technologies are relevant for Wyoming in several different ways. For example, researchers at the University of Wyoming are investigating whether Bioenergy with Carbon Capture & Storage (BECCS), a key NET/CDR technology, could be technically and economically deployed here. Occidental Petroleum, which just acquired Anadarko’s assets including those in Wyoming, is also working on a major CDR project in the Permian Basin with CO₂ offtake for enhanced oil recovery.⁸

The Paris Agreement is relevant for Wyoming lawyers for several reasons – and regardless of whether the United States ultimately withdraws from it. First, if the United States stays in the agreement and the Article 6 carbon trading rules are approved, low-energy projects based in Wyoming might be able to generate offset credits to help project finance in the years ahead.

⁷ The IPCC is the United Nations body responsible for assessing scientific matters related to climate change. <https://www.ipcc.ch/about/>.

⁸ <https://www.houstonchronicle.com/business/energy/article/Oxy-moves-forward-on-Permian-direct-air-capture-13867251.php>.

Second, even if the United States withdraws, the agreement is influencing low-carbon policies here, as noted above. Third, the Paris Agreement influences many corporate sustainability policies. Fourth and finally, U.S. investors may be able to participate in the Paris Agreement even if the U.S. withdraws, as was done under the Kyoto Protocol, to which the United States was never a party.

For the text of the Paris Agreement, *see*:

https://unfccc.int/sites/default/files/english_paris_agreement.pdf

For more information, *see*: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

3. 2030 Sustainable Development Goals

Developed by the United Nations, the 2030 Agenda for Sustainable Development was adopted in 2015 and include seventeen specific Sustainable Development Goals (SDGs) aimed at balancing economic development with environmental responsibility. The goals addressed by the SDGs range from addressing health and well-being to sustainable cities and communities. The SDGs promote cooperation and partnership between developed and developing nations, targeting encompassing goals with the intent of supporting aggressive GHG reductions across the globe.

The SDGs are relevant for Wyoming lawyers because they are beginning to influence governmental policies in the United States as well as sustainability policies by many major energy companies.

SDG 7 is specifically relevant for Wyoming. Entitled “Affordable and Clean Energy,” SDG 7 includes the following targets:

- ✓ “By 2030, ensure universal access to affordable, reliable and modern energy services;
- ✓ “By 2030, increase substantially the share of renewable energy in the global energy mix;
- ✓ “By 2030, double the global rate of improvement in energy efficiency;
- ✓ “By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology; and
- ✓ “By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programs of support.”

SDG 13 separately and specifically addresses climate change, calling for access to financing and capacity for the world’s least developed nations. SDG 13 also recognizes the urgency of assisting small island developing states, which will likely be more adversely impacted by rising ocean

levels resulting from increased GHGs and the climate change which follows. SDG 13 was reviewed in-depth at the United Nation's 2019 High-Level Political Forum on Sustainable Development. To access the information discussed at the 2019 High Level Political Forum on Sustainable Development, see <https://sustainabledevelopment.un.org/hlpf/2019>

For more information on the SDGs, see <https://sustainabledevelopment.un.org/?menu=1300>

ii. U.S. Federal

1. Clean Air Act

In 2007, the United States Supreme Court ruled that because GHGs fit within the Clean Air Act's (CAA) definition of "air pollutant," the U.S. Environmental Protection Agency (EPA) has authority to regulate them. *Massachusetts v. EPA*, 549 U.S. 497 (2007).

EPA thereafter took – and continues to take -- several regulatory actions to implement the authority granted to it in *Massachusetts v. EPA*:

- ✓ *Endangerment and "Cause or Contribute" Findings.* On December 7, 2009, EPA made two findings regarding GHGs under section 202(a) of the CAA: (a) in a decision known as the Endangerment Finding, EPA determined that GHGs in the atmosphere threaten public health and welfare; and (2) in a decision known as the "Cause or Contribute" finding, EPA determined that GHG emissions from new motor vehicles threaten public health and welfare. 74 Fed. Reg. 66496 (2009). These findings were necessary before EPA could regulate GHG emissions from mobile sources.
- ✓ *Regulation of GHG Emissions from Mobile Sources.* Shortly thereafter, EPA – in conjunction with the National Highway Traffic Safety Administration -- finalized GHG emission standards for light-duty vehicles (MY 2012-2016) and heavy-duty vehicles (MY 2014-2018). See, e.g., 75 Fed. Reg. 25324 (2010) (light-duty).

Thereafter, EPA finalized even more stringent GHG emission standards for light-duty vehicles for MY 2017-2025. 77 Fed. Reg. 62624 (2012). The standards were projected to require, on an industry fleet-wide basis, 163 grams/mile of CO₂ in MY 2025, which is equivalent to 54.5 miles per gallon (mpg) if achieved solely through improvements in fuel efficiency. *Id.* at 62667.

On August 24, 2018, EPA proposed to modify the GHG emission standards described above for MY 2021-2026, basically relaxing them. 83 Fed. Reg. 42986 (2018).

The Trump Administration and the State of California, meanwhile, continue to tussle over a variety of issues related to mobile source emissions under the CAA. The Trump Administration has challenged California's authority to issue separate environmental standards under federal law. The Trump Administration also maintains that the so-called California car program is too stringent vis-à-vis GHG emission standards. Colorado is taking steps to opt into the California car program. The automobile industry is divided on these and related topics.

- ✓ *Regulation of GHG Emissions from Stationary Sources.* EPA began regulating GHG emissions from stationary sources on January 2, 2011 through a series of regulatory actions, ultimately culminating in what is known as the “Tailoring Rule.” *75 Fed. Reg. 31514 (2010)*. GHG emissions from stationary sources are regulated under a variety of CAA regulatory programs, including but not limited to: (1) Prevention of Significant Deterioration (PSD) and Title V; (2) section 111(b) (for certain new sources); and (3) section 111(d) (for certain existing sources).

The PSD program is a preconstruction permitting regime that applies whenever major stationary sources are proposed to be built; it also applies whenever certain existing major stationary sources undergo major modifications. Title V is an operating permit program that generally encompasses similar requirements. These programs are relevant for Wyoming lawyers because they generally apply to all types of energy infrastructure, such as natural gas separation plants, power plants and liquefied natural gas (LNG) export terminals.

In March 2011, EPA issued guidance regarding assessing GHG emission control technologies for purposes of the PSD program.⁹ This guidance stipulates, for example, that technologies that are important for Wyoming – such as Carbon Capture & Storage (CCS), Carbon Capture Utilization & Storage (CCUS) and carbon dioxide-enhanced oil recovery (CO₂-EOR) -- may be deemed a Best Available Control Technology (BACT) on a case-by-case basis.

For general background on PSD/Title V, see <https://www.epa.gov/nsr/clean-air-act-permitting-greenhouse-gases#UARG>.

For Wyoming, GHG emission standards for new and existing coal-fired power plants are also relevant. As to new (and modified and reconstructed) coal-fired power plants, in 2015 EPA finalized “Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units.” *80 Fed. Reg. 64510 (2015)*. Those standards generally required implementation of partial CCS/CCUS at coal-fired utilities. In a proposal dated December 20, 2018, the Trump Administration put forth a modification to these standards that does not rely upon CCS/CCUS. *83 Fed. Reg. 65424 (2018)*.

A significant amount of attention is being paid to the GHG emission limits that apply to the existing coal fleet. The Obama Administration’s version of these requirements, known as the Clean Power Plan (CPP), is being revised by the Trump Administration. The Trump Administration’s version of the rule is known as the Affordable Clean Energy (ACE) rule.¹⁰ The CPP looked at energy systems broadly; ACE, in contract, focuses on specific actions,

⁹ <https://www.epa.gov/sites/production/files/2015-12/documents/ghgpermittingguidance.pdf>.

¹⁰ <https://www.epa.gov/stationary-sources-air-pollution/affordable-clean-energy-rule>.

such as efficiency improvements, that may be controlled by utilities. The CPP also allowed “outside-the-fence” actions to qualify; ACE, in contrast, does not. These issues remain in flux and will be subject to litigation for years to come.

Climate-related restrictions on oil and gas production are also important for Wyoming. The Obama Administration put in place regulatory restrictions on methane emissions from such operations, for example. On August 28, 2019, the Trump Administration proposed to relax some of those requirements.¹¹

2. Clean Water Act

Many of the West Coast coal and LNG export terminals have been challenged and stalled based upon section 401 of the Clean Water Act. Under section 401, a federal agency may not issue a permit or license to conduct any activity that may result in any discharge into waters of the United States unless a state or authorized tribe where the discharge would originate issues a section 401 water quality certification verifying compliance with existing water quality requirements or waives the certification requirement.

On August 22, 2019, the Trump Administration proposed modifications to these authorities. *84 Fed. Reg. 44080 (2019)*. EPA, along with the U.S. Army Corps of Engineers, previously issued related guidance.

3. Safe Drinking Water Act

In 2010, EPA published regulations under the Underground Injection Control (UIC) Program that apply to the storage of CO₂. The UIC Class VI regulations apply to the geologic storage of CO₂. CO₂-EOR companies engaged in storage may still comply with UIC Class II; however, if they legally claim “storage,” they must opt into Subpart RR of the Greenhouse Gas Reporting Program, which includes a requirement to conduct federally supervised monitoring, reporting and verification (MRV).

These issues are also in play in the amended section 45Q tax incentive pertaining to CCS/CCUS. The Internal Revenue Service is expected to release implementation guidance for section 45Q in late 2019 or early 2020.

All of these topics are vitally important for Wyoming attorneys, as Wyoming has a vibrant CO₂-EOR industry.

4. Resource Conservation & Recovery Act

In 2014, EPA revised the regulations for hazardous waste management under the Resource Conservation & Recovery Act to conditionally exclude CO₂ streams that are hazardous from the definition of hazardous waste, provided these hazardous CO₂ streams are captured from emission sources, are injected in UIC Class VI wells, and meet certain other conditions. *79 Fed. Reg. 350 (2014)*.

¹¹ https://www.epa.gov/sites/production/files/2019-08/documents/frn_oil_and_gas_review_2060-at90_nprm_20190828revised_d.pdf.

5. National Environmental Policy Act (NEPA)

Because significant amounts of energy production in Wyoming occur on federal lands, NEPA plays a significant role. By way of background, NEPA requires federal agencies to conduct an analysis of any proposed agency action on federal lands for any potential environmental impacts. To oversimplify, the agencies conduct studies and analysis regarding potential impacts and are also required to accept and then address public comments regarding the proposed action, eventually culminating in a reported finding. The finding must sufficiently address all public concerns, as it constitutes a final agency action, the sufficiency of which is subject to judicial review. For more information on the NEPA process, see <https://www.epa.gov/nepa/national-environmental-policy-act-review-process>

The extent to which federal agencies must address climate change in their NEPA assessments remains controversial and in flux. Under the Obama Administration, efforts were underway to impose carbon costs on the production of coal (Social Cost of Carbon) and natural gas (Social Cost of Methane) from federal lands. These efforts, which have been blocked by the Trump Administration, remain subject to ongoing litigation.

The White House Council on Environmental Quality (CEQ) publishes guidance on how federal agencies are to conduct climate assessments under NEPA.¹² CEQ's most recent guidance was published earlier this summer.¹³

A recent lawsuit seeking to invalidate oil and gas lease sales for federal lands in Wyoming by the Bureau of Land Management serves as a case study of the changing nature of NEPA and how it may impact energy production, and the legal industry by proxy, moving forward. The lease sales in question took place between May of 2015 and August of 2016 and were challenged by environmental groups in a lawsuit filed in the U.S. District Court for the District of Columbia in 2017. In his opinion rendered on May 19, 2019, Judge Rudolph Contreras found the BLM had failed in its duty to take a "hard look" at the climate-related impacts of the lease sales, and remanded the matter back to the Bureau of Land Management for further analysis. For more information on this lawsuit, see <https://www.eenews.net/stories/1060127713>

This case litigation is illustrative of the new role of climate change in NEPA analysis. As such, Wyoming attorney's with clientele conducting operations on federal lands, energy related or otherwise, must be prepared to navigate climate change analysis as part of their legal services.¹⁴ To do so, stay up to date on relevant federal decisions and work closely with agency personnel to adequately plan for and address climate change concerns prior to litigation.

¹² https://ceq.doe.gov/guidance/ceq_guidance_nepa-ghg.html.

¹³ <https://www.govinfo.gov/content/pkg/FR-2019-06-26/pdf/2019-13576.pdf>.

¹⁴ See Stoellinger, T., Righetti, T., Coddington, K. "Impact of Social Cost of Carbon Analyses in the Development of Energy Projects on Federal Land," *The Electricity Journal*, Vol. 29, Issue 1, pp. 63-70 (2016) (available at <https://www.sciencedirect.com/science/article/pii/S1040619015300087>).

6. Public Utility Regulatory Policy Act (PURPA)

PURPA has played a significant role in bringing renewable energy resources online. In the years ahead, we envision greater demand for lawyers with PURPA expertise.

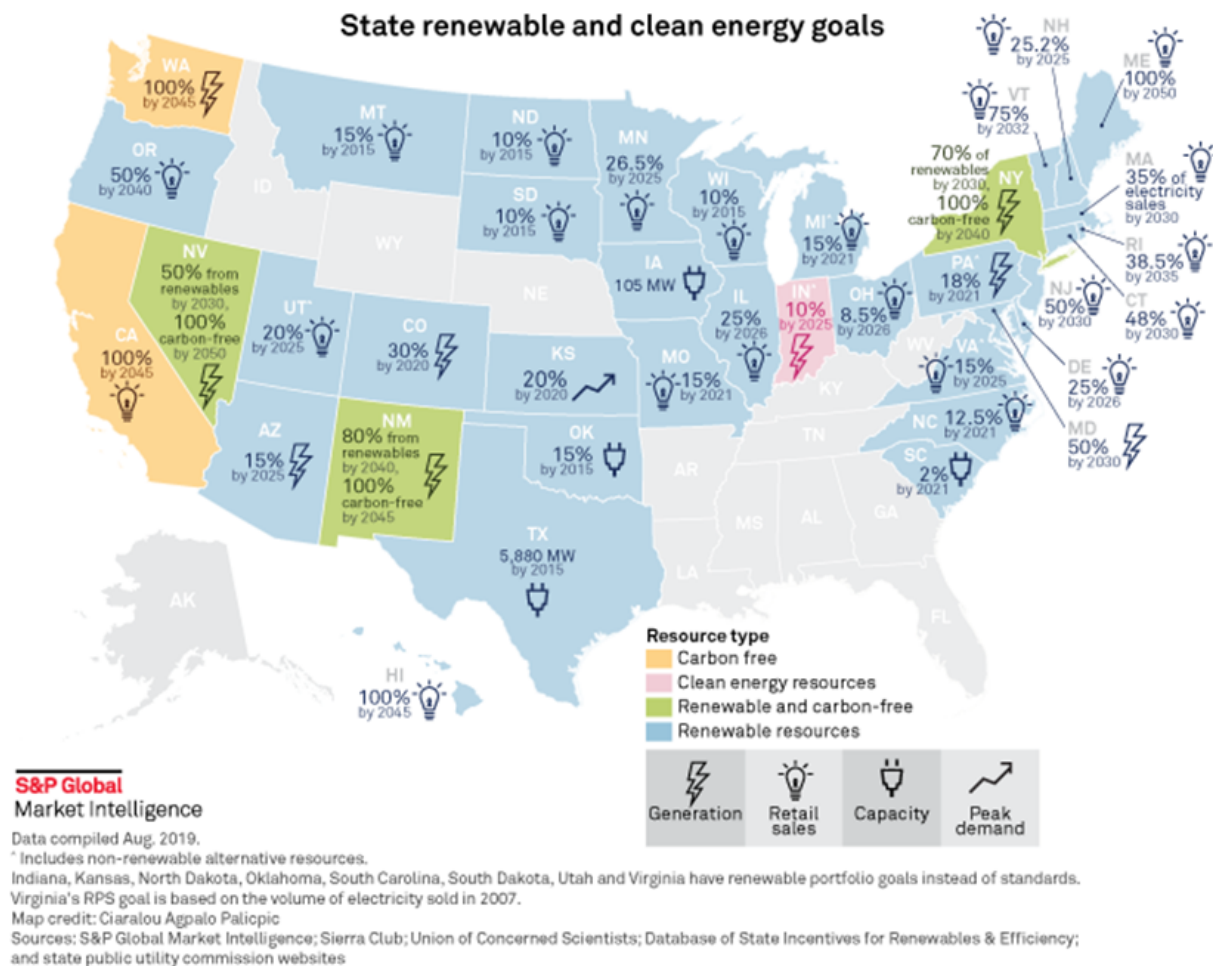
7. Major New Climate Bill

Later this year, Democrats in the U.S. House of Representatives are expected to release a major climate bill that, if it were to become law, would impact Wyoming.

iii. Regional/State

1. Renewable and Clean Energy Standards/Goals

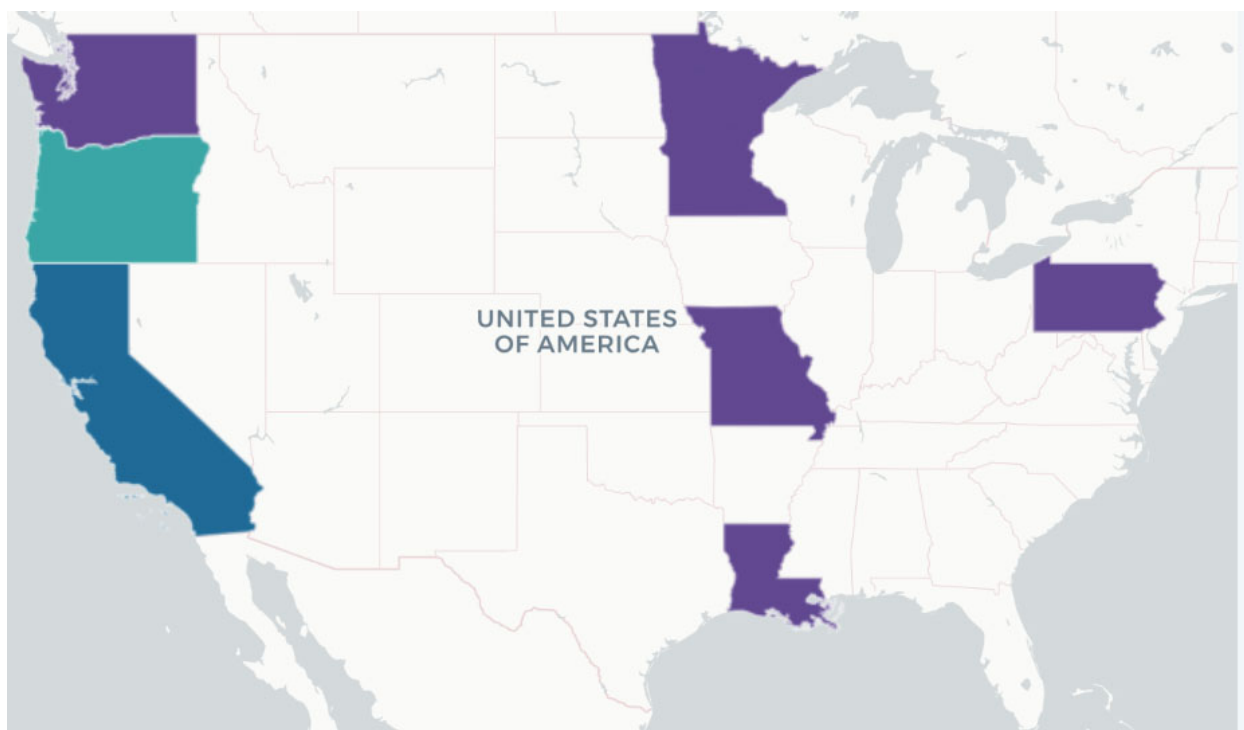
Many States separately have enacted a variety of renewable and clean energy standards/goals.



2. Alternative & Low-Carbon Fuel Standards

Many States separately have enacted a variety of alternative and/or low-carbon fuel standards.

State Alternative and/or Low-Carbon Fuel Standards¹⁵



Of note for Wyoming lawyers, in January 2019 the California Air Resources Board issued a protocol regarding how technologies such as CCS, CCUS and CO₂-EOR could be used for compliance with California's LCFS.¹⁶

iv. International Aviation

The international aviation industry, operating through the International Civil Aviation Organization (ICAO), is in the midst of implementing its Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). Basically, international aviation will be offsetting its GHG emissions going forward. Could some of those offset projects be based in Wyoming?

¹⁵ Source: <https://www.c2es.org/content/state-climate-policy/>.

¹⁶ https://ww3.arb.ca.gov/fuels/lcfs/ccs_protocol_010919.pdf.

For background on CORSIA, see <https://www.icao.int/environmental-protection/CORSIA/Pages/default.aspx>


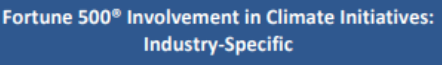








v. Maritime

The international maritime industry, operating through the International Maritime Organization (IMO), has broadly agreed to work towards implementing the Paris Agreement goals.

<http://www.imo.org/en/MediaCentre/HotTopics/GHG/Pages/default.aspx>.

vi. Corporate Commitments/Practices

As governments have passed low-carbon energy laws and regulations, private industry has also answered the call to reduce their contribution to climate change. In fact, 114 Fortune 500 companies have acted on climate change through private non-governmental organizations to date. The chart below shows these companies organized by industry sector and non-governmental organization affiliation.

Disclaimer: In each instance of use or reproduction of this document, I will attribute David Gardiner and Associates with the words, "Credit: David Gardiner and Associates." Last Updated: July 17, 2019								
  								
Industry Sector ¹	# of Companies	 ² ADVANCED ENERGY ECONOMY	 ³ Ceres	 ⁴ RE 100	 ⁴ REBA	 ⁵ SCIENCE BASED TARGETS	 ⁵ WE ARE STILL IN	 ⁵ WE MEAN BUSINESS
Technology	19	6	7	9	15	10	13	15
Financials	17		10	11	3	2	1	13
Food, Beverage & Tobacco	14		5	3	2	12	1	13
Health Care	8		2	3	4	4	1	5
Hotels, Restaurants & Leisure	7		1	1	4	5	3	6
Retailing	6	3	4	1	5	4	4	4
Business Services	5			1	1	2	3	3
Household Products	5			2	2	4	1	4
Materials	5		1		3	5	1	5
Aerospace & Defense	4	1			4	1		1
Apparel	4		3	3	2	4	4	4
Energy	4		3			1	3	2
Industrials	3	2		1	2	1		2
Motor Vehicles & Parts	3	1	2	1	1		1	2
Telecommunications	3	1			1			1
Chemicals	2				1		1	2
Media	2		1		1	1		1
Transportation	2	1						2
Engineering & Construction	1					1	1	1
Total	114 ⁺⁵	15 ⁺¹	39 ⁺⁵	36 ⁺⁴	51 ⁺³	57 ⁺⁵	38 ⁺¹	86 ⁺⁸
Green numbers indicate a new climate commitment & Red numbers indicate a lost climate commitment since the last climate tracker update (March 6, 2019)								
¹ Fortune's Categorization of Industry Sectors								
² Includes the Advanced Energy Buyers Group and all AEE membership levels								
³ Includes the Ceres Policy Network (BICEP) and Ceres Company Network								
⁴ Includes the REBA Leadership Circle, the Business Renewables Center (BRC) and the Corporate Renewable Energy Buyers' Principles								
⁵ Includes companies that have either committed to setting a Science-Based Target or have an approved Science-Based Target								
RE100, SBTi, WASI, and WMB membership data as of July 17, 2019								

Companies are managing climate-related exposure in many different ways. For example, a growing number of investors are utilizing Environmental, Social and Governance (ESG) approaches. ESG criteria are a set of standards that socially conscious investors use to evaluate potential investments. Earlier this year, William Hinman, Director, Division of Corporation Finance, U.S. Securities and Exchange Commission (SEC) offered observations about the relationship between ESG metrics and SEC disclosure requirements.¹⁷ In 2010 the SEC published an interpretive release that discussed climate change-related disclosure requirements.¹⁸

For an up-to-date database of companies actively engaging in climate friendly practices, *see* <https://www.dgardiner.com/corporate-climate-tracker/>

For a comprehensive discussion of corporate action on climate change from the UNFCCC, *see* <https://unfccc.int/news/100-global-corporations-commit-to-science-based-targets-aligned-with-paris-agreement>

b. Climate-Related Liabilities

i. Torts

Many different torts commonly faced by Wyoming attorneys are liable to look drastically different in the coming years as the globe wrestles with addressing climate change and its impacts. The Sabin Center for Climate Change Law at Columbia University, in collaboration with Arnold & Porter LLP, maintains a comprehensive database of U.S. and non-U.S. climate-related litigation, including torts, that is exceedingly helpful to stay abreast of developments in this area: <http://climatecasechart.com/?cn-reloaded=1>.

As the planet has experienced increased temperature variability, natural disasters have become more severe and common place, implicating tort liability concerns. For example, record drought conditions across the arid American west have recently resulted in severe wildfires, prompting litigation. As a recent example, one needs to look no further than the deadly Santa Rosa wildfires which caused massive destruction in the state of California during the summer of 2017. Although litigation in the matter is still ongoing, California utility provider PG&E currently faces upwards of \$18 billion dollars in damage claims related to the fires. For more information, *see* <https://www.latimes.com/business/story/2019-08-19/pge-stock-plunges-as-tubbs-fire-claims-come-back-to-haunt-it>

Regardless of clientele, Wyoming attorneys need to be prepared to answer questions about how to best address the legal risks associated with wildfires and other tort claims related to severe weather events.

Insurance coverage should also be addressed.

¹⁷ <https://www.sec.gov/news/speech/hinman-applying-principles-based-approach-disclosure-031519>.

¹⁸ *See* “Commission Guidance Regarding Disclosure Related to Climate Change,” Release No. 33-9106, 75 Fed. Reg. 6290 (2010) (available at <https://www.sec.gov/rules/interp/2010/33-9106.pdf>).

ii. Contracts

Low-carbon law, regulation and policy should be taken into account in many contractual situations in Wyoming. Following are a few examples.

- ✓ *M&A/Due Diligence*. Low-carbon and climate-related risks should be taken into account as part of due diligence.
- ✓ *Compliance*. Parties to a contract must ensure that the subject of the contract is in compliance with all applicable legal and regulatory low-carbon requirements.
- ✓ *Force Majeure Clauses*. Many climate change risks are addressed via Force Majeure provisions as “unforeseen” events. It behooves all transactional lawyers to monitor relevant climate case law to ascertain how such clauses may be (re)interpreted going forward.
- ✓ *Liabilities*. Liabilities related to low-carbon policies should be addressed – e.g., what happens if fuel delivered to California does not comply with that state’s Low Carbon Fuel Standard?
- ✓ *Duty of Performance*. Given the fluid low-carbon regulatory environment, consideration must be given to conditions precedent, conditions concurrent and conditions subsequent. For example, a CO₂ offtake contract for EOR might want to include limits on performance if the regulatory status of CO₂ changes.
- ✓ *Carbon Credits*. Opportunities may exist to monetize an activity that results in demonstrably lower GHG emissions from a baseline. Carbon credits are frequently transacted under separate agreements known as Emission Reduction Purchase Agreements (ERPAs).
- ✓ *Power Purchase Agreements (PPAs)*. As more and more low-carbon energy systems come online, lawyers will be needed to negotiate the sale of the energy those systems generate.