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PRATT'S ENERGY LAW REPORT

January 2023

Editor's Note Energy Transition

*Victoria Prussen Spears**

The energy landscape in the United States and around the world is rapidly changing. The United Nations Climate Change Conference in Glasgow, commonly referred to as COP26, set targets for decarbonizing the global economy. Russia's invasion of Ukraine highlighted energy security as a major issue that all nations now need to address.

The concerns, problems and opportunities associated with energy transition may never have been more important—or more timely—than they are now. Given that, we are pleased to focus this entire January 2023 issue of *Pratt's Energy Law Report* on energy transition.

Moreover, we have turned to energy law experts from one law firm—Reed Smith—for every article in this issue. The articles by Reed Smith attorneys described below and published here focus on some of the most important energy transition topics that governments and businesses across the globe are facing today. What follows is a short summary of these articles.

TAXING CARBON

The first article in this issue is titled, “Taxing Carbon at the Border: Current State of Play.” Here, Reed Smith attorneys Todd O. Maiden, Yves Melin, Wim Vandenberghe, Jin Woo Kim and Eric J. Schmoll take stock of the Carbon Border Adjustment Mechanism, and similar initiatives in the United States, Canada, the United Kingdom, South Korea, and China, and explore what they mean for global businesses and the energy sector.

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CARBON-NEUTRAL FOSSIL FUELS

Next, in “Scaling Up Carbon-Neutral Fossil Fuels Market: Voluntary Standards Versus Mandatory Regulation,” Reed Smith attorney James E. Atkin suggests that a global regulatory regime to regulate carbon-neutral fossil fuels is not likely soon.

GHG EMISSIONS

Colette D. Honorable, Jennifer A. Smokelin, Debra A. Palmer and Randa M. Lewis of Reed Smith discuss a proposed rulemaking by the Securities and Exchange Commission relating to Scope 3 emissions in their article, “Proposed Legislation and Policy Affecting GHG Emissions in the United States.”

THE NEW YORK MODEL

If you are wondering what jurisdictions are taking significant steps toward energy transition, you will want to read the article by Peter C. Trimarchi, titled, “Where the Energy Transition Is Surging Ahead: New York State.” He explains that New York State has already begun implementing comprehensive measures to decarbonize its entire economy.

LNG

The next two Reed Smith articles are about liquefied natural gas (LNG).

First, in “Liquefied Natural Gas Marine Bunkers’ Role in the Transition to Cleaner Shipping,” Kevin Keenan and Antonia Panayides explore the reasons for the increased demand for LNG-fueled vessels and whether LNG is the way forward for clean shipping.

Then, in “U.S. Ramps Up Liquefied Natural Gas Exports in Response to Invasion of Ukraine,” Colette D. Honorable and Debra A. Palmer note that U.S. LNG export capability has increased dramatically since 2016, when it had almost no LNG export capability, permitting the United States to become the largest exporter of LNG over a five-year period.

NUCLEAR

This issue concludes with an article titled, “The Nuclear New Build Renaissance: Challenges and Opportunities.”

Here, Peter Rosher, Vanessa Thieffry and Liam Hart of Reed Smith explore why the nuclear renaissance is happening and the obstacles and opportunities it faces.

Enjoy the issue!

Taxing Carbon at the Border: Current State of Play

*By Todd O. Maiden, Yves Melin, Wim Vandenberghe, Jin Woo Kim and Eric J. Schmoll**

This article takes stock of the Carbon Border Adjustment Mechanism and similar initiatives in the United States, Canada, the United Kingdom, South Korea, and China, and explores what they mean for global businesses and the energy sector.

The European Union (EU) and a growing number of countries around the world are working on taxing at their borders the greenhouse gas (GHG) emissions embedded into imported products. This is seen, especially in Europe, as the only way to adopt an ambitious agenda for reducing GHG emissions and creating a level playing field where domestic and third-country producers pay the same level of emission rights or tax for the same product.

With its Carbon Border Adjustment Mechanism (CBAM) proposal, the EU takes the lead in setting up such a field, but other environmentally impactful countries, including the United States, are discussing their own measures.

This article takes stock of the CBAM and similar initiatives in the United States, Canada, the United Kingdom, South Korea, and China, and explores what they mean for global businesses and the energy sector.

BACKGROUND

The EU is expected to introduce the CBAM from October 1, 2023 until December 31, 2025 in a transitional form, which means that EU importers must comply with reporting requirements, but will not need to purchase CBAM certificates yet. From January 1, 2026, payment of CBAM certificates upon importation would already be required. Calculating how much is to be paid at the EU border will require knowledge of how much carbon is embedded in the imported product. Alternatively, the importing company can demonstrate that it has already paid emission rights elsewhere. The EU will indeed recognize certain foreign emissions reduction schemes as equivalent to the EU's own Emissions Trading System (ETS). Such "equivalence recognition" is mainly determined through bilateral discussions between the EU and the third country concerned. This bilateral engagement with the EU is likely to create an incentive for third countries to develop their own emissions reduction

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measures, which may lead to multilateral harmonization among like-minded countries.

However, we are likely to see in the interim period a patchwork of different carbon pricing systems in different jurisdictions before countries agree to create a global or plurilateral carbon pricing system. The CBAM and similar schemes are also likely to apply to a rapidly growing list of products that will extend beyond the current products and commodities in scope. This is an area to watch, urgently.

EUROPEAN UNION

The European Commission tabled a proposal implementing the CBAM on July 14, 2021. The EU's two co-legislators, the European Parliament and the Council of the EU reviewed the Commission proposal. The Council approved the Commission's draft proposal, with minor changes, in March 2022. The Parliament adopted its position on June 22, 2022, which is largely in line with the Commission proposal, except for the longer transitional period, the faster phase-out of free allowances, and the inclusion of export rebate. On December 13, 2022, the Council and the Parliament provisionally reached an agreement on the final text of the CBAM Regulation. After going through legal checks and translations of the final text, the Council and the Parliament will officially adopt the text, which is expected to take place in the first quarter of 2023.

The CBAM aims to guarantee that carbon emissions embedded in imported goods are equally taxed in comparison with domestic productions, the latter being currently subject to the EU Emissions Trading System (ETS). This means that EU importers must pay for the carbon embedded into CBAM-targeted goods that are placed on the EU market by purchasing CBAM certificates upon importation.

The CBAM will be implemented from 1 October 2023 in a transitional form, and it will fully apply from January 1, 2026. During the transitional period (October 1, 2023 - December 31, 2025), EU importers will have to comply with reporting requirements, but will not need to purchase CBAM certificates yet. Once the CBAM is fully in place from 2026, importers will be required to purchase CBAM certificates in order to import CBAM goods into the EU.

The key features of the CBAM, once it is fully in place, are as follows:

- *Targeted sectors:* The CBAM will cover cement, fertilizers, iron and steel, aluminium, and electricity, as initially proposed by the Commission, and extended to hydrogen, certain precursors (basic materials that are used as inputs into the production of CBAM goods), and a few downstream products (e.g., screws and bolts).

However, the EU's ultimate objective is a broad product coverage of the CBAM, possibly including energy and other products, as the Commission will conduct a comprehensive review before the transitional period ends.

- *Scope of emission:* The CBAM will cover both direct emission (emissions generated from manufacturing CBAM goods), and indirect emissions (emissions generated from electricity used for manufacturing CBAM goods). This means that EU importers must already report indirect emission during the transition period.
- *Authorized declarants:* CBAM goods must be cleared through customs by declarants who are authorized to do so.
- *CBAM declaration:* EU importers must submit a CBAM declaration for the preceding year on the number of imported goods and their total (verified) embedded emissions. Embedded emissions in imported goods will be calculated on the basis of direct emissions of GHG per ton of goods produced in the production installations.
- *CBAM certificates:* EU importers must purchase CBAM certificates corresponding to the embedded emissions in the imported goods. The embedded emissions are either based on the default value or on the actual proven emissions, if lower.
- *Carbon prices already paid in the country of origin:* CBAM certificates can be reduced to account for carbon prices already paid in the country of origin, but this needs to be certified by an independent person.
- *Geographical exemptions:* Countries that adopt the EU ETS (Iceland, Norway, and Liechtenstein) or are linked with the EU ETS (Switzerland) are exempted from the CBAM. The EU will further elaborate a mechanism for other third countries to be exempted in the future.

While the CBAM may not initially cover energy products, it is expected to expand its targeted sectors quickly. For instance, before the transitional period ends, the Commission will consider broadening the CBAM to sectors identified as having the highest risk of carbon leakage in Decision (EU) 2019/708, which includes hard coal, crude petroleum, iron ores, non-ferrous metal ores, and others. It is therefore important for companies to pay close attention to the further development of the CBAM, even after its implementation.

UNITED STATES

The United States is considering the implementation of its own mechanism to tax carbon emissions at the border, although it trails the EU in the development of such a program due to a lack of consensus in Congress.

In July 2021, similar versions of legislation creating the Fair, Affordable, Innovative and Resilient Transition and Competition Act (FTCA) were introduced in the House of Representatives and the Senate. The legislation seeks to impose a cost on the GHG emissions associated with imported goods “to account for the marginal increased costs incurred by U.S. businesses to comply with laws and regulations limiting greenhouse gas emissions.” The bills require the Treasury Department to determine (1) the costs that U.S. companies in the covered sectors incur to comply with U.S. environmental policies, and (2) the quantity of greenhouse gas emissions associated with the production of each covered good.

As drafted, the FTCA would, among other things:

- Impose a “border carbon adjustment” fee on imports of carbon-intensive goods into the United States, including but not limited to steel, aluminum, cement, and fossil fuels.
- Apply to regulated products made with “covered fuel,” defined as natural gas, petroleum, coal, or any other product derived from natural gas, petroleum, or coal that is used or may be used so as to emit GHGs into the atmosphere.

Unlike its EU counterpart, the FTCA is not accompanied by an equivalent domestic tax or price on carbon emissions per se—but it would impose a residual cost to offset the carbon emission costs incurred by compliant U.S. businesses.

The FTCA faces some hurdles.

First, it has not yet advanced far (in terms of the congressional committee review process). For example, the House version of the FTCA was introduced by a Democrat and was only co-sponsored by one other Democrat. Since being introduced, it has been referred to several different committees but has failed to pass out of any committee, let alone come up for a vote on the floor of the House, after which it would need to be approved in the Senate, where bipartisan approval will likely be needed and will be harder to achieve.

Second, it is likely that ongoing conflict in Ukraine will further raise energy prices, which makes it less likely that the FTCA will pass in the near term.

Finally, any U.S. carbon border adjustment will be scrutinized closely by U.S. trading partners, both in terms of its impact on trade flows and its consistency with World Trade Organization rules.

However, there are some existing CBAM-like programs in the United States that could create a precedent for future federal regulation in this area. California already has its own Low Carbon Fuel Standard (LCFS). The LCFS incentivizes

regulated companies to utilize transportation fuels with relatively low carbon intensity (CI) in gas, diesel, and alternative fuel substitutes. CI is measured and benchmarked, with regulated parties needing to prove compliance with the fuels they sell in California.

The CI of each regulated fuel/substitute has to be measured through an approved “pathway” that will calculate carbon emissions associated with the fuel and its transport into California from anywhere in the world. Relatively low CI fuels generate “credits.” High CI fuels that are above the benchmark are issued “deficits.” Regulated parties above the benchmark can offset their compliance deficits and meet the benchmark by purchasing credits from compliant parties. In this way, the LCFS program incentivizes parties to transition to low CI fuels and substitutes to avoid these extra offset purchase costs.

Other states, including Washington and Oregon, have developed or are developing their own LCFS or “Clean Fuels” programs. These states have coordinated with British Columbia to collectively form the Pacific Coast Collaborative for, among other carbon-reduction initiatives, forming a west coast LCFS trading market. New York and New Mexico are considering LCFS programs, as are other states.

CANADA

Canada has shown interest in using a CBAM-like measure to tax carbon emissions at the border so as to reach its United Nations Framework Convention on Climate Change (UNFCCC) goals (for example, the stated 2021 goal of a 40–45 percent reduction below 2005 levels by 2030). Canada’s version of the measure is called Carbon Border Adjustments (CBAs).

In August 2021, Canada issued a lengthy “Consultation” on “Exploring Carbon Adjustments for Canada.” Among other topics, the Consultation considered the potential of CBAs both for import charges and export rebates. Examples include:

- Import charges applied to goods from countries that either do not have carbon pricing or apply a lower carbon price to ensure that they face similar carbon costs (such as per unit of emission resulting from the production of a good) to those that apply to domestic producers.
- Other measures that could apply a carbon price to imported goods include a domestic tax or charge levied on both high-carbon domestic and imported products or a requirement that emissions allowances be purchased for imported goods based on their carbon intensity.
- Export rebates provided to producers so that domestically produced goods compete on equal footing in foreign markets, alongside goods

from countries with limited or no carbon pricing.

The Consultation pointed out the many complexities of using CBAs, including the impact on international trade. All of these hurdles were identified prior to recent developments in Ukraine, which will only complicate supply and demand issues further. The Consultation came to a non-committal conclusion that “[. . .] the Government intends to continue its discussions with Canadians and international partners over the coming months on this issue.”

Since the Consultation was published, there appears to have been relatively little advancement on CBAs.

First, the 2022–2023 Departmental Plan from Environment and Climate Change Canada does not list CBAs as part of its named tools for achieving climate change goals during this period.

Second, a March 22, 2022 search for pending legislation currently introduced in either the Canadian Senate or House of Commons returned no results when searching for “carbon border adjustments.”

UNITED KINGDOM

Currently, the United Kingdom partially addresses the risk of carbon leakage through the UK Emissions Trading Scheme, which grants free allowances for emissions to manufacturers at risk of carbon leakage.

In September 2021, an inquiry into the merits of introducing a mechanism to tax carbon emissions at the border was launched by the Environmental Audit Committee (EAC) of the UK Parliament. It aimed at collecting evidence to assess the role of such a mechanism in targeting carbon leakage risks and its potential role in broader long-term environment objectives, like decarbonization. The EAC published its report in June 2022, which recommended, amongst other things, that the UK government should start work immediately on developing a comprehensive UK carbon border approach—including a CBAM—to be implemented this decade.

At the moment, the potential adoption of a UK CBAM is under assessment and no specific timelines have been published yet. However, the UK government confirmed in a written statement to Parliament in May 2022 that it would consult later in the year on implementing a CBAM and that it is actively engaging with the EU on its own CBAM proposals to understand how the respective schemes may impact the EU-UK trading relationship.

SOUTH KOREA AND CHINA

South Korea and China also address the risk of carbon leakage through their own emissions trading system:

- South Korea launched its emissions trading system (K-ETS) in January 2015, which was East Asia's first nationwide mandatory ETS and, at the time, the second-largest carbon market after the EU ETS. The K-ETS covers 685 of the country's largest emitters, accounting for 73.5 percent of national GHG emissions. It covers direct emissions of six GHGs, as well as indirect emissions from electricity consumption. The K-ETS plays an essential role in meeting South Korea's 2030 updated NDC target of a 24.4 percent reduction from 2017 emissions. In 2021, the K-ETS entered its third phase.
- After China launched its national ETS politically in December 2017 and built on its experience of piloting carbon markets in eight regions, it launched the national ETS in 2021. Key pillars of the development of the national ETS include reporting and verification of historical emissions data from eight emission-intensive sectors; development of the national registry, trading system, and national enterprise GHG reporting system; set-up of the legislative and regulatory framework; and capacity building. The existing Chinese regional ETS pilots are gradually transitioning into the national ETS.

At the moment, South Korea and China are not discussing a CBAM-like initiative in concrete terms. Rather, their focus is on how to address and limit the potential impacts of the introduction of the EU CBAM. In this context, some have flagged the introduction of a Chinese and South Korean CBAM-like mechanism, but this has not been followed up with concrete legislative proposals yet.

TAKEAWAYS

- Under the EU's CBAM, importers will be required to pay for carbon-intensive imports into the EU;
- The EU is expected to introduce its CBAM in 2023, and other countries are currently discussing the introduction of their own measures;
- The EU's measures will likely set the pace, with possibly conflicting rules adopted elsewhere;
- Calculating carbon contents of imports and payments will require significant preparation work from exporting and importing companies; and
- Covered goods do not include energy goods yet.

Scaling Up Carbon-Neutral Fossil Fuels Market: Voluntary Standards Versus Mandatory Regulation

*By James E. Atkin**

In this article, the author suggest that a global regulatory regime to regulate carbon-neutral fossil fuels is not likely soon.

In the current climate of a clear and inexorable shift toward renewables and other low-carbon energy production, the notion of carbon-neutral fossil fuels sits uneasily. However, the green energy transition will take time and a huge amount of investment. In the meantime, fossil fuel producers and market actors are increasingly looking to interim green solutions; hence, the emergence of “carbon-neutral” fossil fuel deals.

“Carbon neutral” or “GHG neutral” in the context of a fossil fuel product broadly refers to the reduction and/or offsetting of carbon dioxide (and carbon dioxide equivalent greenhouse gases) emissions occurring as a result of the production, transportation, and use of the product in order to achieve a net-zero emissions outcome.

Needless to say, the use of the carbon-neutral label in this context is potentially dangerous territory. There is much debate about what the carbon-neutral label should specifically require in this context, and there is a spectrum of views on what types of emissions it should cover (some or all of scope 1, 2, and 3 emissions), how we should measure emissions, and whether reduction at source before resorting to offsetting the balance of emissions should be required.

These are all very much live issues in this nascent market, and the growth of the carbon-neutral fossil fuels market will no doubt be linked to whether consensus, or at least a majority view, is reached on them. This will be key to creating a credible carbon-neutral label, avoiding claims of greenwashing, and enabling comparability/fungibility of carbon-neutral products offered by different market actors.

A key question that underlies those issues is whether the carbon-neutral fossil fuels market can gain credibility and scale up through adherence to industry-driven voluntary initiatives or standards, or whether the time is now or in the near future for the market to be subject to mandatory regulation.

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Market participants have only voluntary carbon-neutral standards to go on, with limited market consensus or prescription as to what the label should require and little cross-over between different types of fossil fuels. That situation typifies how other green products, such as green bonds, have tended to come to market and attract new entrants by enabling them to apply a green label without having to navigate a myriad of regulations to do so. However, as the markets for other green products have matured, the trend has shifted to a more top-down approach, whether via legislation or consensual self-regulation.

VOLUNTARY VERSUS MANDATORY REGULATION: THE CARBON-NEUTRAL LABEL

The voluntary framework for less carbon-intensive fossil fuels, such as LNG, is relatively well developed. Market initiatives are being developed across the globe, the most prevalent being the carbon-neutral LNG framework of the International Group of Liquefied Natural Gas Importers (GIIGNL Framework). To date, relatively few carbon-neutral LNG deals have transpired, and the development of voluntary initiatives, such as the GIIGNL Framework, is seen as one of the key stimuli for the market.

On the question of what the carbon-neutral label should require, the GIIGNL Framework caters to several decarbonization “pathways” for producers of LNG, with only one attracting the “GHG neutral” label (which requires emissions reductions at source, offsetting the balance of emissions, and a commitment to achieving long-term decarbonization). This enables LNG producers the flexibility to “opt-in” to the pathway most in accordance with their commercial aims. This is important given the potential for third-party gas suppliers and varying readiness to undergo intensive monitoring, reporting, and verification (MRV) of emissions.

By contrast, carbon-neutral voluntary initiatives for more carbon-intensive fossil fuels, such as crude oil, are significantly less developed. This is largely due to the increased offsetting costs associated with the higher carbon emissions generated from crude oil products, and the heightened complexity in measuring carbon emissions from crude oil products. As a result, to date, we lack an industry-wide voluntary framework for carbon-neutral crude oil.

Despite the absence of an established voluntary framework, crude oil transactions have been reported to be carbon neutral. One of the first “carbon-neutral” crude oil transactions is credited to have occurred in April 2021 between Lundin Energy AB and Saras S.p.A. The producer used an independent MRV certification scheme provided by Intertek Group plc in order to determine carbon emissions and, for the carbon offsetting element, sourced carbon credits certified by the VCS. The use of MRV mechanisms that

are not widely recognized was criticized by commentators, and such transactions in the crude oil sector remain rare.

Calls have been made by those outside the fossil fuel industry, and some within, for governments to step in and develop a regulatory framework for carbon-neutral fossil fuels. The case from the outside is well rehearsed: calling fossil fuels carbon neutral is simply greenwashing, as they can never truly be carbon neutral by their intrinsic nature, and allowing the unregulated use of that label simply prolongs the life of the fossil fuel industry and delays the uptake of renewable alternatives. The case from within the industry is that mandatory regulation would level the playing field and may ultimately drive prices up as the ability to attach a credible, globally recognized carbon-neutral label to a cargo will add value.

It seems clear at this early stage in the development of the carbon-neutral fossil fuels market that any top-down regulation is likely to dampen the appetite for new entrants and stymie the growth of the market. Decarbonization is a relatively new concept for the fossil fuel industry and while many market actors have publicly set themselves net-zero targets, they are still developing their strategies to achieve those targets. The development of carbon-neutral products is a clear path to achieving net zero, and it is attractive at present in that it affords the flexibility to adopt an approach that aligns with a company's wider decarbonization strategy.

VOLUNTARY VS. MANDATORY REGULATION: CARBON OFFSETTING

Regarding the carbon offsetting aspect of carbon-neutral fossil fuel deals, the voluntary carbon market (VCM) is now reasonably well established. It has seen huge growth in recent years in the wake of the Paris Agreement and, more recently, the Glasgow Climate Pact. The growth trajectory of the VCM has been unusual in the sense that it was initially driven by top-down schemes, principally the Clean Development Mechanism (CDM) and the Joint Implementation (JI) programs operated under the UNFCCC international treaty framework.

Following the collapse in prices in 2008/09 and a long period of stagnation, the recent resurgence in the VCM has been driven by a proliferation of privately operated, largely unregulated VCM offsetting programs. However, this may soon change again as Article 6 of the Paris Agreement lays the foundations for a successor scheme to the CDM that would come under the auspices of the UNFCCC.

The generally accepted standard for high-quality carbon credits is that credits must represent real, additional, verifiable, and permanent emission reductions

or removals. Each of the major VCM programs has adopted that approach. However, it is worth noting that a degree of skepticism persists about the benefits of carbon offsetting and the efficacy of the VCM in reducing carbon emissions globally. In particular, critics have argued that the time lag between the emissions and the offsetting may reduce the stated effectiveness of credits and that offsetting encourages carbon leakage from one location to another rather than the overall reduction of emissions.

At a more transactional level, some still describe the VCM as the “wild west” of the carbon trading market, as it remains largely unregulated when compared to trading carbon allowances under-regulated schemes such as the EU Emissions Trading System (ETS). That is becoming less of an issue now as the market matures, thanks to various industry-led initiatives to develop governance frameworks for the VCM and standardized documentation for trading carbon credits based on the templates already widely used in the regulated carbon market.

Regarding the case for mandatory regulation in the VCM, we are already seeing examples of cross-over between the VCM and the regulated carbon market. The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) is a mandatory global framework that provides a uniform, offset-based scheme for the regulation and reduction of carbon emissions from international aviation.

Unlike existing regulated schemes, such as the EU ETS, the compliance obligations of aviation operators under the CORSIA must be met entirely through the use of carbon credits sourced from the VCM. There is no CORSIA equivalent to the EU allowance (EUA)—the regulated compliance unit under the EU ETS. The VCM has responded to the CORSIA by creating carbon credit products that specifically meet the strict eligibility criteria set out in the CORSIA rules. The VCM has also attained accreditation under the CORSIA allowing the use of those types of carbon credit by compliance entities. In turn, this has allowed the labeling of those carbon credits as being “CORSIA compliant,” and such units generally trade at a premium to units that do not meet the CORSIA eligibility criteria.

The interaction between the VCM and the regulated aviation carbon offsetting scheme under the CORSIA may present a potential model for future carbon-neutral fossil fuels standards in terms of successful voluntary frameworks forming the basis of a mandatory and regulated carbon reduction scheme for fossil fuels.

The outcome for the carbon-neutral fossil fuels market could be that the unregulated VCM will continue to be unregulated and exist in parallel with the regulated carbon markets. If the carbon-neutral fossil fuels market becomes

subject to regulation, then the VCM would respond to that by developing carbon credit products that, while unregulated, meet the regulatory eligibility criteria that allow their use within that regulated market. However, as noted above, it seems likely that any global approach toward regulation of the carbon-neutral fossil fuels market is some way off.

TAKEAWAYS

- Carbon-neutral fuel deals represent an interim solution during green energy transition;
- Carbon-neutral labeling and offsetting are susceptible to being seen as “greenwashing”;
- Industry initiatives to develop voluntary standards are in a nascent stage; and
- A global regulatory regime to regulate carbon-neutral fossil fuels is not likely soon.

Proposed Legislation and Policy Affecting GHG Emissions in the United States

*By Colette D. Honorable, Jennifer A. Smokelin, Debra A. Palmer and Randa M. Lewis**

The authors discuss a proposed rulemaking by the Securities and Exchange Commission relating to Scope 3 emissions.

The U.S. Securities Exchange Commission (SEC) has released a proposed rulemaking package to require climate-related disclosures. One such requirement relates to Scope 3 emissions.

The SEC recognizes three categories of emissions:

- (1) Scope 1 emissions, which are direct emissions from sources owned or controlled by a company;
- (2) Scope 2 emissions, which are emissions primarily resulting from the generation of electricity consumed by a company; and
- (3) Scope 3 emissions, which refer to “all other indirect emissions not accounted for in Scope 2 emissions,” meaning emissions from sources outside a company’s control.

Companies are typically able to calculate Scope 1 and 2 emissions without much difficulty; however, estimating Scope 3 emissions presents challenges, as Scope 3 emissions occur from other processes and entities outside the company’s control that serve the company’s value chain.

REPORTING UNDER THE PROPOSED RULE

For registrants that do not qualify as a smaller reporting company (SRC), the proposed rule will require disclosure of Scope 3 emissions and their intensity if they are “material” or the registrant set a GHG emissions reduction goal that includes Scope 3 emissions. Thus, the proposed rule does not require reporting of all Scope 3 emissions.

SCOPE 3 CALCULATION METHODOLOGY

Although the proposed rule adopts many features of the GHG Protocol, a key difference between the two is the proposed rule’s leniency on how companies calculate GHG emissions, which includes Scope 3 emissions. The proposed rule indicates that this deviation is an opportunity for companies to choose the methodology that best suits their portfolio and financing activities.

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SAFE HARBORS

While the proposed rule introduces sweeping changes to climate-related disclosures, it also includes key provisions aimed at lessening compliance burdens, including the exemption for SRCs, discussed above, a delayed compliance start date for Scope 3 emissions reporting, and a safe harbor provision that insulates a company from certain securities law liabilities for Scope 3 emissions disclosures.

The proposal includes a safe harbor provision related to liability for Scope 3 emissions that were disclosed under the proposed rule in a document filed with the SEC. This limitation on liability would deem a Scope 3 disclosure to not be fraudulent unless it was made or reaffirmed without a reasonable basis or disclosed other than in good faith.

THE PROPOSED RULE'S FUTURE

The proposed rule is subject to a notice and comment period, which was set to end on June 17, 2022; however, due to “a technological error” the Comment File was reopened and comments were still being accepted as of October 25, 2022. During this time, the SEC has accepted public comments on its proposed rule. In March 2021, the SEC requested information on climate change disclosures and received approximately 600 comments in response. The SEC has received substantially more comments on the proposed rule, which it must consider and address before the rule can be finalized and enforced. This process will likely take months to complete.

The SEC's final rule, to the extent it predominantly reflects the proposed rule, will likely be challenged under the Administrative Procedure Act (APA). One possible basis for a challenge would be the Scope 3 disclosures. Industry groups will likely try to stay the regulations pending litigation by arguing that any reporting associated with Scope 3 disclosures are outside the scope of the SEC's authority or that the SEC was only permitted to require disclosure of “material” emissions.

If industry groups challenge the rule under the APA, it is possible that a court will find that the public interest and balance of equities weigh in favor of granting an injunction, just as the Louisiana district issued a preliminary injunction that barred use of the Biden administration's social cost of carbon figure.

If the final rule faces challenges in court, its implementation may well be delayed. And with the possibility of a new administration being elected for the next term, this rule faces much uncertainty.

COUNTING THE COST OF CARBON

President Joseph Biden issued Executive Order 13990 immediately after his inauguration in January 2021. The executive order requires federal agencies to “capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account.”

Since then, U.S. federal agencies have enacted various measures to address concerns of the GHG emissions and climate change, and are facing contentious debate over how much to charge for carbon emissions.

EO 13990 established an Interagency Working Group on the Social Cost of Greenhouse Gases (IWG). The IWG defines the social cost of carbon (SCC) as the estimated cost to society of releasing one ton of carbon dioxide into the atmosphere. The SCC’s value has varied from the Obama to the Trump and the Biden administrations, with the Biden administration using the Obama-era estimates adjusted for inflation. Although several states have objected to the Biden administration’s use of the SCC, the U.S. Court of Appeals for the Fifth Circuit rejected the states’ efforts to preclude the Biden administration’s efforts in *State of Louisiana v. Biden*. There, the court decided that the SCC policies may remain, because objecting states had not demonstrated standing.

The U.S. Federal Energy Regulatory Commission (FERC) and the Bureau of Land Management (BLM) are considering analyzing the SCC when issuing certificates or permits for energy infrastructure projects.

FERC is considering the issuance of a policy statement that will modify the standards used to evaluate applications by interstate natural gas pipelines to construct new facilities in order to address greenhouse gas emissions associated with the new facilities. The regulated community weighed in with thousands of comments.

After a March 3 U.S. Senate Energy and Natural Resources oversight hearing, and in response to objections from numerous parties, a March 24 order reclassified two policies—the Updated Policy Statement on Certification of New Interstate Natural Gas Facilities and the interim Consideration of Greenhouse Gas Emissions in Natural Gas Infrastructure Project Reviews—into “draft policy statements,” thereby reopening them for public comment.

But the U.S. Court of Appeals for the District of Columbia Circuit has issued a number of decisions directing FERC to consider GHG emissions when approving proposals to construct facilities for the interstate transportation of natural gas. For example:

- *Food & Water Watch v. FERC*;
- *Vecinos Para el Bienestar de la Comunidad Costera v. FERC*; and

- *Sierra Club v. FERC*.

FERC has proposed, over the objections of certain commissioners and industry participants, to analyze not only the direct GHG effects of pipeline construction proposals, but also the upstream GHG effects associated with the production of the gas to be transported over the new facilities and the downstream GHG effects when the gas is consumed by the ultimate end-user. FERC is also considering applying the SCC to the GHG emissions that will result from new pipeline projects. FERC's proposals in this regard have been highly controversial, but it hopes to issue final rules in the near future.

Since that time, two federal court decisions have addressed environmental issues, and both cases raise concerns about future treatment of such cases. For instance, in *Delaware Riverkeeper v. FERC*, FERC declined to utilize the social cost of carbon (SCC) because the parties did not clearly raise the issue before the Commission. In *West Virginia v. EPA*, the US Supreme Court's held that the "major questions" doctrine limited the EPA's ability to effectuate a broad expansion of its authority under Clean Water Act Section 111(d). How this "major questions" doctrine applies to other federal agencies in their implementation of federal laws remains to be seen.

Similarly, BLM has stated that it will incorporate the SCC of greenhouse gases, including carbon, nitrous oxide, and methane) into its environmental analysis of fossil fuel leasing and development on federally-owned lands. BLM has developed a report that estimates annual GHG emissions from coal, oil, and gas development on federal lands and a longer-term assessment of GHG emissions and their climate change impacts.

TAKEAWAYS

- Proposed SEC rule targets Scope 3 emissions;
- The SEC's final rule will probably face challenges under the APA; and
- U.S. federal agencies are addressing concerns over GHG emissions and climate change.

Where the Energy Transition Is Surging Ahead: New York State

*By Peter C. Trimarchi**

The author explains that New York has already begun implementing comprehensive measures to decarbonize its entire economy.

The process of transitioning western economies from fossil fuel-based resources to renewable ones is happening unevenly. Most transition activities have been driven largely by private project developers, corporate environmental, social and governance (ESG) policies, or aspirational national and state-level “goals,” often with little teeth to them. Such actions are also largely focused solely on electricity generation, without addressing other sectors of the economy that use fossil fuels for energy, such as transportation and manufacturing.

Some places, however, are undertaking comprehensive actions to fully decarbonize their economies, backed by statutory mandates that will force the action to occur. The State of New York is one of those places. As described below, New York has passed comprehensive legislation requiring a true energy transition to occur in the state over the next 20 to 30 years. As New York now labors through the process of drafting regulations to make that vision a reality, it offers a window into how other jurisdictions can make similar changes, and how business and industry will need to adapt to a radically different economy in the not-too-distant future.

THE CLCPA

In 2019, New York passed the Climate Leadership and Community Protection Act (CLCPA), which establishes aggressive limitations on carbon emissions from all sectors of the economy. While it does predictably call for 100 percent of the state’s electricity generation to come from zero-emission sources by 2040, it also requires an 85 percent reduction in all greenhouse gas emissions statewide, from whatever source, by 2050.

Importantly, the CLCPA defines statewide greenhouse gas emissions to include not just sources within the state, but also greenhouse gases produced outside the state for imported electricity or the extraction and transmission of fossil fuels imported into the state.

Clearly, those are remarkably ambitious requirements to be achieved in a very short period of time, which, of course, begs the question of how the state will actually do it. While it would be easy to assume that the requirements could be

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satisfied primarily through a shift to 100 percent renewable energy production, this is not true—electricity production actually accounts for a relatively small percentage of statewide greenhouse gas emissions. The New York State Department of Environmental Conservation (DEC) has determined that the state's greenhouse gas emissions are currently generated from buildings (32 percent), transportation (28 percent), electricity (13 percent), waste (12 percent), industry (9 percent), and agriculture (6 percent). Those numbers demonstrate that a truly comprehensive energy transition will require far more than just the installation of solar panels and wind farms.

The CLCPA lays out how the state will implement its strict mandates. First, by 2023 a Climate Action Council, made up of the heads of various state agencies and other members, must develop a Scoping Plan which will provide recommendations for achieving the required emissions limits (including regulatory measures). The Council issued a draft Scoping Plan in December 2021. The CLCPA then charges DEC and other state agencies with issuing binding regulations by January 1, 2024, which will implement measures to achieve the required emissions reductions.

The magnitude of the changes the CLCPA will require is evident in the draft Scoping Plan issued by the Climate Action Council. Within its 331 pages, the draft Scoping Plan calls for some truly disruptive actions that will be required to achieve the reductions called for by the CLCPA. Some of these include (a) a price on greenhouse gas emissions; (b) elimination of natural gas as a fuel source for new single and multi-family homes by 2024 and 2027, respectively; (c) a requirement that all light-duty vehicles and 40 percent of medium- and heavy-duty vehicles sold in the state be zero-emission by 2030; and (d) capture or elimination of methane sources from waste, agriculture, and energy sectors.

The Scoping Plan calls for the electrification of almost all aspects of the residential, manufacturing, and transportation sectors of the economy, and reliance on renewable energy sources for that electricity. Such reliance on electrification is so significant, in fact, that New York's peak electric load is expected to flip from a summer peaking system to a winter peaking system, due to the electrification of so many heating systems and the reduced performance of electric vehicle battery systems in winter months.

Although the final implementing regulations are not due until January 1, 2024, state agencies and the Legislature are not simply waiting around to see how they turn out. Both are actively taking measures on their own to ensure that new actions are consistent with the goals of the CLCPA. As just two examples, the DEC is now requiring all applications for new air emissions permits to include a discussion of how the permittee's operations will be consistent with the goals of the CLCPA, and the Legislature recently sent a bill

to the Governor's desk for signature that imposes a two-year moratorium on the issuance (or renewal) of air permits to power plants that sell power to certain cryptocurrency mining operations.

The CLCPA's far-reaching impacts are thus already affecting businesses in New York, and will fundamentally change the way business is conducted in New York over the next three decades. Companies with operations in the state, or with plans to expand there, must pay very close attention to the future actions of the Climate Action Council and state regulatory authorities, to determine how proposed future actions will affect their industries. They should also strongly consider participating in the regulatory process, to help shape the final rules to the greatest extent possible.

TAKEAWAYS

- New York has already begun implementing comprehensive measures to decarbonize its entire economy;
- Everyone doing business in New York should understand how that transition will affect their industry; and
- Those who understand the new regulatory environment can enjoy competitive advantages and avoid making bad investment decisions.

Liquefied Natural Gas Marine Bunkers' Role in the Transition to Cleaner Shipping

*By Kevin Keenan and Antonia Panayides**

In this article, the authors explore the reasons for the increased demand for liquefied natural gas (LNG)-fueled vessels and whether LNG is the way forward for clean shipping.

The shipping industry is facing increased regulation in a move to a greener shipping emissions profile. Regulations on shipping emissions are increasing, with the International Maritime Organization (IMO) setting a 2030 target for emissions reductions, and signatories to a September 2021 Global Methane Pledge will try to lower 2020 methane emissions levels by 30 percent by 2030.

These goals are aimed at mapping the way to net-zero CO₂ emissions by 2050. With these policy commitments in mind, and with shipping companies on their own seeking to reduce greenhouse gas emissions and reap other clear benefits that LNG bunkering affords, there has been a significant increase in demand for LNG bunkers. This is evidenced by multiple shipbuilders building LNG bunker vessels, multiple shipowners ordering the construction of LNG-fueled vessels and a number of shipping companies exploring options for sources of green fuel production.

Some examples of these trends include the following:

- Orders for new LNG-fueled ships reached record highs in 2021. According to data from Det Norske Veritas (DNV), there was a net increase of 240 ships from the previous year, a bigger increase than in the previous four years combined. This trend did not let up in early 2022, with DNV reporting that another 40 ships powered by LNG were ordered in January 2022 alone.
- Japanese Shipbuilder, Mitsubishi Shipbuilding, a part of Mitsubishi Heavy Industries, will build an LNG bunker vessel, the first to operate in the waters off western Japan.
- Maersk and Egyptian authorities have signed a partnership agreement to explore the establishment of green fuel production in Egypt.

This article explores the reasons for the increased demand for LNG-fueled vessels and whether LNG is the way forward for clean shipping.

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REASONS FOR INCREASED DEMAND FOR LNG FUEL

Increased Regulation—Net-Zero 2050 Target

IMO rules from 2020 (IMO 2020) lower the sulfur content of bunker fuel to 0.5 percent (down from 3.5 percent) mass by mass (m/m). To comply with this, vessels must switch to fuels that are low in sulfur content or install a fuel cleaning method to reduce the sulfur content of traditional bunker fuels. The sulfur oxides regulation (MARPOL Annex VI, regulation 14) applies to all ships, whether they are on international voyages or domestic voyages, solely within the waters of a country that is party to MARPOL Annex VI. Enforcement of IMO 2020 is supported by a ban on the carriage of non-compliant fuel which has been in effect since March 1, 2020. The ban prohibits ships from carrying fuel with a sulfur content higher than 0.5 percent in their fuel tanks. It is noteworthy that port state control authorities do not have to prove consumption of a non-compliant fuel; they simply have to find its presence in a ship's tanks to establish a violation. The only exception to this standard is ships equipped with exhaust gas cleaning systems (scrubbers) that remove sulfur emissions from a ship's exhaust before the gas is released into the atmosphere. In considering the aim for net-zero by 2050, DNV Germanischer Lloyd confirmed in its 2050 Marine Energy Forecast that “[i]n almost any scenario, LNG will be the single most important fuel in the market.” Further, regulations on shipping emissions are set to get stricter. Following the 2021 UN Climate Change Conference (COP26), the IMO 2030 emissions target will now be reviewed in 2022. Also, following COP26, signatories to a Global Methane Pledge will see countries seek to lower 2020 methane emissions levels by 30 percent by 2030.

Increased regulation greatly increases the potential for a vessel's carbon footprint to be penalized in the new framework.

The benefits of LNG are discussed below.

Clear Environmental and Commercial Benefits

LNG is one of the cleanest marine fuels available and has significantly lower CO₂ emissions than heavy fuel oil, marine diesel oil or marine gas oil. Moreover, LNG provides higher energy content and lower operational and maintenance costs. LNG is suitable for ferries, passenger ships, tankers, bulk carriers, supply ships and containerships.

LNG can significantly reduce pollution from nitrogen oxides (NO_x) and particulate matter compared with conventional marine fuels while cutting emissions of sulfur oxides (SO_x) by more than 90 percent, helping significantly to meet regulatory requirements.

Additionally, LNG can reduce greenhouse gas emissions by up to 23 percent compared with traditional marine fuels, depending on the engine used.

Future-Proof (Cost, Reliability and Increase in Infrastructure)

The reliable long-term supply of natural gas is also a key factor in LNG being more feasible in the long term than current fuels. The safe refueling of LNG-powered ships and the safe evacuation of LNG fuel from ships in an emergency are of paramount importance for the protection of LNG as a commercially viable and acceptable marine fuel. LNG has the potential to be decarbonized further using “drop in” bio gas-sourced LNG (bioLNG) and, in the future, synthetic sources of methane.

Melissa Williams, vice president of Shell Marine, believes that for owners who support decarbonization and are in the market for new build vessels, “the only tangible new product and the best option is LNG.” Williams told Trade Winds that “this is another industrial revolution happening right in front of us and most people don’t even realize. [. . .] We are changing a culture not just within the company but within society. If owners have to make a decision to put something on the water and really believe in decarbonization, then LNG is the lower-carbon option than the alternatives.”

Writing in *The Maritime Executive*, Peter Keller, chairman of SEA-LNG, a multi-sector industry coalition established to demonstrate LNG’s benefits as a viable marine fuel, commented: “LNG demand, availability and infrastructure are all growing rapidly. LNG can be bunkered at most key ports today, including major marine fuel bunkering hubs such as the Port of Singapore and Rotterdam.” Keller asserts that this will soon apply to bioLNG as well:

Carbon-neutral bioLNG can be bunkered into existing fuel tanks and blended with traditional LNG with no changes required to the vessel or any of its operating systems/procedures. This ability to drop in bioLNG, and in the longer-term renewable synthetic LNG, ensures that LNG-fueled vessels are future-proof assets. Meanwhile, the option to blend bioLNG with traditional LNG allows ship operators to incrementally introduce the lower carbon fuel in line with availability and increasingly stringent emissions requirements.

OBSTACLES TO OVERCOME

Price Spikes Due to Supply and Demand

Natural gas prices remained volatile throughout 2021 and 2022, reaching record highs in Europe in October 2021 and again in August 2022, owing to rising demand and supply constraints, exacerbated by declining storage volumes. The volatility emphasizes the need for a more strategic approach to

achieving a secure, reliable and flexible gas supply in the future to avoid exposure to price spikes. Jerome Leprince-Ringuet, managing director of TotalEnergies Marine Fuels, acknowledged in the latter half of 2021 that the price of LNG was higher than gasoil or VLSFO (very low sulfur fuel oil), but noted that vessels having dual-fuel engines can hedge between the two markets. Also, Leprince-Ringuet told Trade Winds he is confident that the supply-demand balance will ease in the months to come.

War in Ukraine—Does It Impact LNG Sourcing?

In response to the Russian invasion of Ukraine, the United States banned all Russian oil and gas imports and the UK will phase out Russian oil imports by the end of 2022. In addition, Russia's Gazprom recently announced it will shut down the Nordstream 1 gas pipeline supplying Germany "indefinitely," citing maintenance issues. All of this will have a significant impact on European energy supply going forward, not to mention the near term impact as winter approaches. The United States and the EU have announced a deal on LNG in an attempt to reduce Europe's reliance on Russian energy. The deal will see the United States provide the EU with extra gas, equivalent to around 10 percent of the gas it currently gets from Russia, by the end of 2022. A key term of the new deal will see the United States and other countries supply an extra 15 billion cubic meters of gas in addition to 2021's 22 billion cubic meters. Reducing reliance on Russian oil and gas will require sourcing imports from non-Russian suppliers.

However, there is already competition for LNG supplies from the world's largest producers—Qatar, Australia, and the United States—as well as other smaller but nonetheless important producers, and that has been pushing prices up. The biggest producer of LNG in the United States, Cheniere Energy, warns of challenges ahead for European consumers, with limited new supplies scheduled to hit the market. Plans for Europe to phase out its reliance on Russian natural gas will be complicated by intractable, lengthy construction times for new LNG infrastructure.

LNG BUNKERING IS THE WAY FORWARD FOR CLEANER SHIPPING

While carbon-zero technologies such as hydrogen show some promise for carbon-free shipping at some point in the future, the most readily available solution to decarbonizing the shipping industry in the near to medium term is LNG. Investment is needed to bring LNG bunkering into the mainstream. Some investment has been made, but more will be required in order to see LNG bunkering proliferate to the extent needed to offset traditional bunker fuels.

The advent of new and stricter regulations is certainly one driver for some of that investment; the cost savings and lower maintenance costs associated with

burning LNG for propulsion are another. Only time will tell whether those two drivers will be enough to bring about a new revolution in marine emissions.

TAKEAWAYS

- Shipping has a target of net-zero CO₂ emissions by 2050; restrictions will ensue;
- Demand for LNG-powered ships has increased greatly;
- LNG has clear environmental and commercial benefits for shipping; and
- In spite of the Ukraine/Russia crisis, LNG bunkering looks poised to grow.

U.S. Ramps Up Liquefied Natural Gas Exports in Response to Invasion of Ukraine

*By Colette D. Honorable and Debra A. Palmer**

The authors explain that U.S. liquefied natural gas (LNG) export capability has increased dramatically since 2016, when it had almost no LNG export capability, permitting the United States to become the largest exporter of LNG over a five-year period.

The United States became the world's largest producer of liquefied natural gas (LNG) in 2021, at a time of increased European demand for LNG. Europe's need for LNG grew due to reduced purchases of fossil fuels from Russia following Russia's invasion of Ukraine and the imposition of economic sanctions on Russia. The United States and the European Commission reached an agreement on March 25, 2022, under which the United States sought to increase LNG deliveries to Europe by 15 bcm in 2022 and further increase LNG volumes in future years.

Expanded U.S. LNG exports will replace about 30 percent of the LNG that EU countries previously imported from Russia. At the same time, the United States and the European Commission agreed to try to reduce the greenhouse gas intensity of LNG infrastructure and overall demand for natural gas, by deploying clean energy measures.

The United States has greatly increased its ability to export LNG in recent years. On April 27, 2022, the U.S. Department of Energy (DOE) granted increased export authorizations to two LNG export projects. The DOE's orders allow Golden Pass LNG to export an additional 0.35 bcf per day of LNG and Magnolia LNG to export an additional 0.15 bcf per day, to any country not specifically prohibited by U.S. law or policy.

The United States became the top LNG exporter in the first half of 2022, according to the international Energy Information Agency (EIA). The U.S. Energy Information Administration (EIA) predicted in April 2022 that the United States would export 12.19 bcf per day of LNG last year, up from 9.76 bcf per day in 2021. The EIA also predicted that U.S. LNG exports will further increase to 12.64 bcf per day in 2023. EIA estimates have been increasing—its March 2022 prediction was that the United States would export 11.34 bcf per day of LNG in 2022. According to EIA's Short-Term Energy Outlook, that figure has moderated to 10.5 bcf per day.

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LNG EXPORT FACILITIES

Currently, the United States has eight operational LNG export facilities with a capacity of more than 13 bcf per day, with three others under construction that will expand capacity by more than 6.5 bcf per day. The Federal Energy Regulatory Commission (FERC) has approved an additional 12 export facilities with a total capacity of about 21.6 bcf per day, but the project sponsors have not yet started construction on these. FERC is considering applications filed by project sponsors to construct and operate seven more export facilities, with two others in the pre-filing stage at FERC. U.S. LNG export capability has increased dramatically since 2016, when it had almost no LNG export capability, permitting the United States to become the largest exporter of LNG over a five-year period.

U.S. LNG exports are very near their limit with current infrastructure. About 98 percent of available liquefaction capacity was in use in the fourth quarter of 2021, underscoring the need for project sponsors to move forward with construction of additional LNG export facilities.

Environmental groups have expressed concerns that the increase in the U.S. LNG industry, given that natural gas is a fossil fuel, may contribute to climate change. The March 2022 agreement between the United States and the European Commission recognizes these concerns by requiring the countries to implement clean energy initiatives to reduce overall natural gas consumption. The Russian invasion of Ukraine, however, clearly has made it likely that LNG exports from the United States will remain high.

TAKEAWAYS

- The United States became the largest producer of LNG in 2021 and the top exporter of LNG in 2022;
- It sought to increase LNG exports to EU by 15 bcm in 2022 to reduce EU dependence on Russian oil and natural gas; and
- The United States and the EU Commission agreed cut overall demand for natural gas by deploying clean energy measures.

The Nuclear New Build Renaissance: Challenges and Opportunities

*By Peter Rosher, Vanessa Thieffry and Liam Hart**

In this article, the authors explore why the nuclear renaissance is happening and the obstacles and opportunities it faces.

France and the United Kingdom have renewed their focus on the completion of nuclear new build projects. This article explores why this nuclear renaissance is happening and the obstacles and opportunities it faces. It also looks at nuclear energy in Germany and the challenges faced by Russian-related projects in the wake of the war in Ukraine.

FRANCE AND THE UNITED KINGDOM: DIFFERENT HISTORICAL APPROACHES TO NUCLEAR ENERGY

Nuclear power has historically been a flagship of French industry, and today France operates 56 civil reactors. Approximately 70 percent of French electricity is produced using nuclear power, and France is also the world's largest net exporter of electricity, in large part thanks to its nuclear generation capacity. Despite this, the administration of President François Hollande passed a law after the Fukushima accident in 2011 to reduce nuclear-generated electricity to 50 percent in the whole in France by 2025, although industry was not compelled to carry out the reductions. In the early years of the Macron administration, after 2017, the government was also somewhat ambivalent about the future of nuclear energy because, among other concerns, many of France's nuclear plants were aging and it would take time to bring new reactors into operation.

Although the United Kingdom was the first country to harness nuclear energy for civil power generation, the UK allowed aspects of its nuclear new build construction capability to decline significantly during the 1990s. The UK now has 11 operating reactors, generating approximately 15 percent of the country's electricity, down from the late 1990s high point of approximately 25 percent.

GERMANY CUTS NUCLEAR IN RESPONSE TO FUKUSHIMA

Germany has considerable recent expertise in nuclear engineering and new build construction relating to plants outside Germany. However, in 2011, in response to Fukushima, Germany decreed that it would abandon domestic nuclear energy completely by the end of 2022.

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At that time, Germany was generating nearly a quarter of its electricity from nuclear energy and had 17 reactors. Germany's policy shift led Vattenfall (a Swedish state-owned power company) to start an arbitration against Germany under the Energy Charter Treaty regarding Vattenfall's interest in two German plants earmarked for closure and to simultaneously challenge the policy in the German courts. It was announced in March 2022 that the German government would pay €1.4 billion to Vattenfall to settle those claims, with additional smaller payments to three German energy companies that were also affected by Germany's decision to phase out nuclear power.

NUCLEAR NEW BUILD RENAISSANCE IN FRANCE AND THE UNITED KINGDOM

After Fukushima, the future of nuclear energy looked relatively unpromising in much of Europe. But in the last two years, French and UK attitudes toward nuclear energy have changed dramatically, particularly in the last few months. There are three main reasons for this:

- 1) The climate crisis and the importance of reaching zero carbon as quickly as possible are reviving the fortunes of nuclear as a “green”—or at least, transitional—source of energy. This is reflected in the EU Commission's decision in February 2022 to classify certain nuclear activities as supporting the transition to a climate-neutral economy.
- 2) The war in Ukraine has resulted in sanctions against Russia and the broader political realization that European states are overly reliant on Russian gas.
- 3) The economic impact of COVID-19 has encouraged governments to look more favorably on major infrastructure investment as a way of promoting economic recovery.

In light of the above, France envisages the commissioning of up to 14 new EPR2 reactors by 2050, as well as prolonging the life of existing reactors where possible.

The UK government released its Energy Security Strategy on April 7, 2022, unveiling plans to increase nuclear power generation to 24GW by 2050—three times more than now and once again representing up to a quarter of projected electricity demand. The government anticipates that could spur the nuclear sector into building up to eight more reactors across the next series of new build projects. This comes in addition to the new build plant currently under construction at Hinkley Point C. Since release of the Energy Security Strategy, the Johnson, short-lived Truss and Sunak administrations have all emphasized the critical importance of developing new build nuclear plants in order to provide long-term energy security for the UK.

LOOKING FORWARD—OPPORTUNITIES AND CHALLENGES

The renewed focus on nuclear new build projects in the UK and France opens up several opportunities and challenges.

It goes without saying that the nuclear and construction industries will prosper in countries where nuclear mega-projects do receive the green light. However, considerable investment in upskilling and additional capacity will be required if multiple projects are to be completed simultaneously.

In the UK, the experience developed in the construction of Hinkley Point C will be invaluable, particularly for the Sizewell C project, which uses the same EPR design. The EPR design will also be used in the proposed new French reactors, applying lessons learned on previous projects. The global nuclear supply chain could potentially experience a boom in demand for materials and services, with the potential for associated bottlenecks and delays.

The UK government's ambitious plans depend in some part on the success of its recent decision to change the preferred financing model to a Regulated Asset Base (RAB) model. Under the RAB model, a company receives a license from an economic regulator to charge a regulated price to consumers in exchange for providing the nuclear plant. The RAB model differs from previously preferred Contract for Difference (CfD) approach, under which the developer agreed to pay the entire cost of constructing the nuclear plant in return for an agreed fixed price (the "strike price") for electricity output once the plant is online. Unlike the CfD model, where construction risk sits with the developer, the RAB model shares the risk between investors and consumers, while also maintaining the incentives for the private sector to minimize the risk of cost and schedule overruns. The fact that CfD placed the entire construction risk on developers has led to the cancellation, in recent years, of several potential nuclear projects in the UK.

In France, it remains to be seen whether the EU Commission's decision to classify nuclear energy as a transitional activity will survive potential legal challenges, and what effect that will have on the investment environment.

In contrast to projects in the UK and France, the Ukraine crisis has the potential to negatively impact Russian-related nuclear projects. Russia has been a key exporter and financier of nuclear projects, often backed by cheap Russian loans. Rosatom, a Russian state-owned corporation, is currently building plants in Turkey, Hungary, Belarus, Egypt, China, India and Bangladesh. However, following recent events, Rosatom's Finnish new build project has been cancelled. It may be that the previous Russian nuclear export success story suffers more broadly in the face of current or future sanctions, although that remains to be seen given that a number of Russian projects continue to progress, including the Paks II nuclear plant in Hungary.

Despite these issues, these are exciting times to be involved in the nuclear industry, and the nuclear renaissance has the potential to transform electricity production on the way to a carbon-neutral future.

TAKEAWAYS

- French and UK governments plan to build new nuclear power plants;
- Post-Fukushima hiatus now over as nations must expand zero-carbon electricity; and
- Global nuclear supply chain has significant opportunities.