The Export Clause and the Constitutionality of a Cap and Trade Mitigation Policy for Carbon Dioxide

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The Export Clause and the Constitutionality of a National Cap and Trade CO₂ Mitigation Policy
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I. Introduction

The United States exports about 110 million tons of extracted coal per year and significant efforts are underway to develop the infrastructure required to increase those exports.¹ The recent proliferation of “fracking” has some people suggesting that over the next century, the U.S. could become a net exporter of natural gas, although recent data have cast considerable doubt over the magnitude and deliverability of natural gas resources.² Since carbon budgets will not be met unless, amongst many other things, large portions of domestic hydrocarbons remain buried and uncombusted,³ national

greenhouse gas mitigation policy must cover exported or potentially exported hydrocarbons. Without such coverage, domestically extracted hydrocarbons would still be exported and combusted in foreign jurisdictions, many of which have carbon intensities worse than the United States. A national greenhouse gas mitigation policy ought to avoid such a counterproductive instance of carbon leakage and be designed, amongst other desideratum, to withstand an Export Clause challenge.

I argue in this paper that under contemporary Export Clause jurisprudence, an “upstream” but not a “downstream” price on carbon dioxide pollution can cover exported or potentially exported hydrocarbons. National policy, then, ought to favor “upstream” pricing mechanisms. One corollary to this conclusion is that, since cap-and-trade (CAT) mitigation instruments are “downstream” pricing mechanisms occurring at the point of combustion, it seems difficult, perhaps impossible, to craft a CAT so as to cover exported hydrocarbons. A “midstream” tax on hydrocarbons, such as in British Columbia where the carbon tax is imposed at the retail level (viz., “at the pump”), might also be susceptible to an Export Clause challenge. However, since the interaction between a “midstream” carbon tax and the Export Clause depends upon the details of a particular policy, no general analysis of a “midstream” pricing policy is possible and the analysis is not performed in this paper. However, such an analysis might not be necessary because national carbon dioxide mitigation policy could avoid it by taking the form of an “upstream” Pigouvian tax on prospective carbon dioxide emissions from extracted hydrocarbons; that is, a carbon tax. The carbon tax should be styled as a “severance” tax, levied (or “imposed”) at the points of extraction and importation.

In what follows I first review the Supreme Court’s Export Clause jurisprudence and discuss lower courts’ application of that jurisprudence. The case law here is neither

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4 Commentators seem to use “carbon intensity” in two ways. The first is CO₂ emissions per unit of energy. This is used to compare fossil fuels. The second is units of CO₂ emissions per GDP. This is used to compare nation-states. The International Energy Association keeps the numbers at http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=91&pid=46&aid=31. In 2011, China emitted 2.078 metric tons on CO₂ per thousand dollars of GDP (2005 U.S. dollars). The same year, the U.S. emitted 0.413 metric tons of CO₂ per thousand dollars of GDP (2005 U.S. dollars).

5 U.S. Constitution, Article I, Section 9, Clause 5 (“No Tax or Duty shall be laid on Articles exported from any State.” See Section II below for more details.
large nor overly complex, and this review seems to be comprehensive. (Section II). The only significant ambiguity in the jurisprudence is in the identification of the point in the course of commerce when an article ceases to be “pre-export” and enters into “export transit”, the point at which the Export Clause prohibition becomes operable. Case law, which is in some respects unpersuasive, indicates that an “excise” tax on the sale of an article, when that sale places the article under the direction of an entity likely to export the article, violates the Export Clause (Section III). It is therefore fairly plain that a downstream price on exported hydrocarbons, such as would occur under a CAT, could only fall on the “in export transit” side of the divide, and would therefore be constitutionally suspect (Section IV). The remaining alternative to pricing CO₂ emissions is an “upstream” tax on extracted hydrocarbons.

While it seems more than likely that an upstream carbon tax can avoid an Export Clause challenge, the details of such a tax are complex. An upstream carbon tax would be layered upon a complicated industry, which operates under a complicated system of contracts and pre-existing local, state, and federal regulation. The analysis and construction of an upstream carbon tax would therefore benefit from the expertise of those familiar with these technical matters, and I conclude by presenting what appear to be the pertinent inquires, in the expectation that they will lead to further analysis (Section V).

II. The Export Clause

Scholarly consensus takes the Export Clause, which reads that “No Tax or Duty shall be laid on Articles exported from any State”, to have been a concession to Southern fears that a national government might deploy the national taxing power to unfavorably burden southern agriculture exports.⁶ The Supreme Court has had remarkably little to say about the Export Clause, and precedent is consequently thin. Before its 1996 “revival”, the Supreme Court’s most recent Export Clause decision was from 1915, Thames & Mersey Marine Insurance Co. v. United States.⁷ Nonetheless, what

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⁷ 237 U.S. 19 (1915).
case law exists strongly indicates that in applying the Export Clause, the Court will rely
upon the distinction between articles that are “in export transit” and articles that are
“pre-export transit.” It will refuse to apply the Export Clause against “pre-export
transit” articles. The remaining legal ambiguity is in demarking the boundary between
pre-exportation and in export transit. On one end, the Court’s jurisprudence indicates
that a non-discriminatory tax on extracted or manufactured articles is constitutional,
even when those articles are destined for exportation. At the other end, a tax at the port,
say upon the bill of lading, is unambiguously unconstitutional. Where between these
two points an article enters into export transit is less clear. Precedent indicates that an
“excise” tax upon the sale of an article, when that sale commits the article to
exportation, is unconstitutional. This precedent, however, is underdeveloped and in
many respects unpersuasive.

The distinction between pre-export and in export transit is an implicit aspect of the
Court’s late 19th and early 20th century jurisprudence, and the Court formally
articulates it in U.S. v. IBM (1996).\(^8\) The jurisprudence identifying an “excise” tax upon a
sale that commits an article to export transit is from 1923, and is made use of by export
companies in two post-U.S. v. IBM cases.\(^9\)

The question in IBM v. U.S. was whether the Export Clause “permits the
imposition of a generally applicable, nondiscriminatory federal tax on goods in export
transit.”\(^10\) IBM challenged a tax levied upon insurance premiums it paid to foreign
insurers on its exported products.\(^11\)

Thames & Mersey offered excellent precedent for IBM, especially since the
government conceded that the two cases were factually indistinguishable.\(^12\) Instead,
counsel for the government argued that mid-20th century developments in import-
export clause jurisprudence and dormant commerce clause jurisprudence had

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\(^8\) 517 U.S. 843 (1996)
\(^9\) See Section III, below.
\(^10\) Id. at p. 845.
\(^11\) Id. at p. 846 (regulations found at Section 4371 of the Internal Revenue Code (26 U.S.C. 4371 (1982 ed.))
\(^12\) IBM at p. 850.
superseded *Thames & Mersey* such that it ought to be overruled. The majority of the Court, following along, thus felt no need to address interesting factual questions, such as whether an insurance premium, the object of taxation in this case, is indeed an “Article” covered by the Export Clause. Nor did the Court consider whether the “Article” taxed was in fact “in export transit” but rather presumed it so, as, in this instance at least, seemed warranted. Nonetheless, the distinction between pre-export taxation and in export transit plays an important part of the Court’s analysis, and a future Court is unlikely to consider this distinction to be *dicta*.

In setting up its argument in *IBM*, for instance, the Court writes that “our cases have broadly exempted from federal taxation not only export goods, but also services and activities closely related to the export process. At the same time, we have attempted to limit the term “Articles exported” to permit federal taxation of pre-export goods and services.”

“Our early cases,” the Court continues, “upheld federal assessments on the manufacture of particular products ultimately intended for export by finding that pre-export products are not ‘Articles exported.’” In support of this thesis, the Court glosses *Pace v. Burgess*, 92 U.S. 372 (1876), *Turpin v. Burgess*, 117 U.S. 504 (1886), and *Cornell v. Coyne*, 192 U.S. 418 (1904).

At issue in both the *Burgess* cases (Mr. Burgess was the revenue collector for the Third District of Virginia) was a federal “excise tax” levied on tobacco products based on weight. In *Pace*, the earlier case, the tobacco to be exported was exempted from the tax but was still subject to a 25 cent per package stamp charge. The *Pace* Court affirmed the constitutionality of the stamp charge. “When a tobacco manufacturer challenged the stamp charge,” wrote the *IBM* Court, “we upheld the charge on the basis that the

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13 *Id.*
14 The Court seemed puzzled by Counsel’s omission, but does not compensate for it. *IBM* at p. 855-56. One might conclude that the tax on the insurance premium was in fact a tax on the article because the premium and the article are so closely connected that a tax on the one is a tax on the other. The tax on the premium would then be a legal fiction designed to evade Export Clause scrutiny. However, this conclusion is not foregone, and the Court did not address it.
15 *IBM* at p. 846.
16 *IBM* at p. 846
stamps were designed to prevent fraud in the export exemption from the excise tax and did not, therefore, represent a tax on exports.”17 After Congress repealed the stamp charge (apparently for policy reasons and not constitutional ones), a separate manufacturer sued to recover the money it had previously paid in stamp charges, leading to Turpin v. Burgess.18 “Without disturbing the prior ruling,” wrote the IBM Court of the Turpin case “… we explained that the prohibition of the Export Clause ‘has reference to the imposition of duties on goods by reason or because of their exportation or intended exportation, or whilst they are being exported. . . . We said that the plaintiffs would have had no Export Clause claim even if there had been no exemption from the excise because the goods were not in the course of exportation and might never be exported.”19

In summary, in Pace the Court upheld the stamp charge on the ground that it was not a tax, but (to use contemporary terminology) a users’ fee designed to prevent fraud.20 The Court recognized this in its 1998 follow-up to U.S. v. IBM, U.S. v. U.S. Shoe, where it explicitly recognized the stamp charge at issue in Pace as “compensation given for services [in fact] rendered.”21 In Turpin, the Court relied upon the distinction between pre-export and in-export transit (again, phrasing it in contemporary terms) and explained that the exemption from the “excise tax” provided by the Congress was a matter of policy, not constitutionality.22 The plaintiff in these two cases would have had

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17 U.S. v. IBM at p. 847 (referencing Pace at p. 375).
18 See FN 26, below.
19 IBM at p. 847 (citing Turpin at p. 507).
20 Other language in Pace not cited by the IBM Court is instructive. Pace at p. 375 (“The stamp was intended for no other purpose than to separate and identify the tobacco which the manufacturer desired to export, and thereby, instead of taxing it, to relieve it from the taxation to which other tobacco was subjected. It was a means devised to prevent fraud, and secure the faithful carrying out of the declared intent with regard to the tobacco so marked.”)
22 Again, other language from Turpin not cited by the IBM Court is instructive. Turpin at p. 836 (“But a general tax, laid on all property alike, and not levied on goods in course of exportation, nor because of their intended exportation, is not within the constitutional prohibition.”); and Turpin at p. 837 (“They were not in course of exportation; they might never be exported; whether they would be or not would depend altogether on the will of the manufacturer. Had the same excise which was laid upon all other tobacco manufactured by the plaintiffs been laid on the tobacco in question, they could not have
no constitutional complaint had the excise tax not included an exemption for export products.\textsuperscript{23}

The third case analyzed by the IBM Court in support of the distinction between pre-export and in export transit taxation is \textit{Cornell v. Coyne} (1904).\textsuperscript{24} In this case, the Court unambiguously upheld a “manufacturing or production” tax on filled cheese even though the filled cheese was manufactured “under contract for export, and was in fact exported.”\textsuperscript{25} The IBM Court quoted Cornell: “”The true construction of the constitutional provision is that no burden by way of tax or duty can be cast upon the exportation of articles, and does not mean that articles exported are relieved from the prior ordinary burdens of taxation which rest upon all property similar situated.’”\textsuperscript{26}

In summarizing its review of \textit{Pace}, \textit{Turpin}, and \textit{Cornell}, the IBM Court concluded that these cases “made clear that nondiscriminatory pre-exportation assessments do not violate the Export Clause, even if the goods are eventually exported.”\textsuperscript{27} The distinction between pre-export taxation and in export transit taxation seems an established element of Export Clause jurisprudence, and has been relied upon by the lower courts.\textsuperscript{28}

Besides distinguishing between taxation that occurs pre-export and that which occurs in export transit, the Court has signaled that it will distinguish between taxation and reasonable user fees, which would not insult the Export Clause. In \textit{U.S. v. U.S. Shoe Corp.}, 523 U.S. 360 (1998), the Court struck down the Harbor Maintenance Tax (HMT) as a violation of the Export Clause. The HMT was imposed on goods loaded at United

\textsuperscript{23} Id.
\textsuperscript{24} 192 U.S. 418 (1904).
\textsuperscript{25} Cornell at p. 426.
\textsuperscript{26} IBM at p. 847-8 quoting Cornell at p. 427. Cornell at p. 427 quotes and cites Turpin at p. 836, portions of which are displayed in FN 26 supra. Although not mentioned by the IBM Court, the Cornell opinion provides a useful elucidation of the implications of not honoring the pre-export/in export transit distinction. “A farmer may raise cattle with the purpose of exportation, and in fact export them. Can it be that he is entitled to a return of all property taxes which have been cast upon those cattle?” The implication of the example is that, were there no pre-export/in export transit distinction, virtually every tax might be subject to Export Clause scrutiny.
\textsuperscript{27} IBM at p. 848.
\textsuperscript{28} See Section III, below.
States ports for export, and counsel for the defense, again, did not dispute that the levy was placed upon articles in export transit. Rather, the defense argued that the Harbor Maintenance Tax was, label to the contrary, a user’s fee. The Court incorporated the distinction between a tax and a user’s fee into the jurisprudence, but insisted that a user’s fee be reasonable. The HMT, however, was imposed on an _ad valorem_ basis, and the Court did not find an _ad valorem_ levy to be “a fair approximation of services, facilities, or benefits furnished to the exporters, and therefore does not qualify as a permissible user fee.” In striking the HMT, the Court glossed the stamp charge at issue in _Pace_ as a reasonable users’ fee (since it was imposed per package irrespective of size or weight of the package) but also re-affirmed the distinction between pre-export taxation and in export transition taxation.

The distinction between a tax and a user’s fee is of no apparent consequence to the constitutionality of either CAT or an upstream carbon tax. However, the distinction between pre-export and in export transport is essential and the next section discusses courts’ attempts to fix the boundary between the two.

### III. When Does an Article Enter Export Transit?

One Supreme Court case and a few lower court decisions indicate that the transfer of title is one event that might separate pre-export taxation from in export transit taxation. In particular, if the transference of title coincides with both the imposition of an _ad valorem_ tax on the article (i.e., an “excise” sales tax, although one should not take too much stock in labels) and the moment when the article taxed is very likely to be placed under the direction of an entity very likely to export the article, then the Export Clause probably prohibits the taxation. For reasons stated below, the identification of the transference of title as the point where an article might enter into export transit and an excise tax as a violation of the Export Clause seems mildly vulnerable.

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29 _U.S. Shoe_ at p. 363.
30 _U.S. Shoe_ at p. 367 (noting that the Export Clause “allows no room for federal taxation, however, generally or nondiscriminatory, on goods in export transit”).
Insofar as there is one, the leading case identifying the sale of an article as a critical moment for determining whether taxation occurs pre-export or in export transit is A.G. Spladling & Bros. v. Edwards, Collector of Internal Revenue (1923). The War Revenue Act of October 3, 1917 placed, inter alia, a tax “upon all baseball bats, . . . balls of all kinds . . . sold by the manufacturer, producer, or importer.” A firm in Venezuela, Delgado & Cia, ordered commission merchants in New York, Scholtz & Co., to buy baseball and baseball bats. Scholtz & Co. then placed the order with Spalding, instructing Spalding that the baseballs and baseball bats should be marked, weighed, and delivered to an exporting carrier in New York. Spalding then brought suit against the tax collector claiming that the tax upon their sale to Scholtz & Co. violated the Export Clause. “The question,” wrote Justice Holmes for the Court, “is whether the sale was a step in exportation, assuming as appears to be the fact, that the title passed at the moment when the goods were delivered into the carrier’s hands.”

To answer [the question] with regard to any transaction we have to fix a point at which, in view of the purpose of the Constitution, the export must be said to begin. As elsewhere in the law there will be other points very near to it on the other side, so that if the necessity of fixing one definitely is not remembered any determination may seem arbitrary. In this case, for instance, while the goods were in process of manufacture they were none the less subject to taxation if they were intended for export and made with specific reference to foreign wants. [citing Cornell and Heisler v. Thomas Colliery Co. 260 U.S. 245 (1922)]. On the other hand no one would doubt that they were exempt after they had been loaded upon the vessel for Venezuela and the bill of lading issued. It seems to us that the facts recited are closer to the latter than to the former side, and that the export had begun.

31 43 S.Ct. 485 (1923).
32 Spalding at p. 485.
33 Id. at p. 485.
34 Id. at p. 486.
The very act that passed the title and that would have incurred the tax had the transaction been domestic, committed the goods to the carrier that was to take them across the sea, for the purpose of export and with the direction to the foreign port upon the goods. The expected and accomplished effect of the act was to start them for that port. The fact that further acts were to be done before the goods would get to sea does not matter so long as they were only the regular steps to the contemplated result. Getting the bill of lading stands no differently from putting the goods on board ship. Neither does it matter that the title was in Scholtz & Co. and that theoretically they might change their mind and retain the bats and balls for their own use. There was not the slightest probability of any such change and it did not occur. The purchase by Scholtz & Co. was solely for the purpose of Delgado & Cia. and for their account and risk. Theoretical possibilities may be left out of account.\textsuperscript{35}

Justice Holmes acknowledges that fixing one point as the commencement export transit involves a degree of arbitrariness, but believes that the facts of the case indicate that the sale of the baseball articles “start[ed] them for . . . port.” Note, however, that Justice Holmes dismisses the receipt of the bill of lading as the point where, “in view of the purpose of the Constitution,” an article might enter into export transit, although this might seem a more natural point of demarcation. At the receipt of the bill of lading, the articles are already loaded on the transport, and the identification, location, or intentions of the buyer need not be known to determine if the article shall be exported, but only the destination of the transportation. In contrast, identifying the sale of an article, which might occur before the receipt of a bill of lading, as a possible boundary between pre-exportation and export transit requires a court to make a greater number of factual determinations. Further, precedent from 1901, \textit{Fairbanks v. U.S.}, 181 U.S. 283

\textsuperscript{35} \textit{Id.} at p. 486.
(1901), had already identified a tax on a bill of lading as a tax on the article exported, rendering such a tax unconstitutional.\(^\text{36}\)

Hence, by identifying a point other than the receipt of the bill of lading as the commencement of export transit, Justice Holmes complicates both the jurisprudence and the number and complexity of factual contingencies courts must resolve in considering an Export Clause challenge. Had he identified the receipt of the bill of lading alone as the point where an article enters into export transit, lower courts would have been spared the hassle of parsing different types of “excise” taxes (\textit{ad valorem}, by weight, etc.) and determining the identify, intentions, or location of two parties to a sale. Justice Holmes’ keen for the arbitrary was perhaps overly acute.

Further, the Court’s recitation of the facts in \textit{Spalding} is silent on whether the tax was \textit{ad valorem}, by weight, or flat. Nor, throughout the case, does the Court describe the challenged tax as an “excise tax.” Nonetheless, since the Court’s rejuvenation of Export Clause jurisprudence in \textit{IBM} and \textit{U.S. Shoe}, two lower federal courts have identified an “excise tax” on the sale of an article as constitutionally infirm, when the sale places the article in the hands of an entity likely to export the article. Surprisingly, both of these cases involve coal companies seeking relief from federal taxes.\(^\text{37}\)

First, in a 1998 case the District Court for Eastern Virginia considered whether the Coal Excise Tax, as applied to exported coal, violated the Export Clause.\(^\text{38}\) Seven subsidiary coal companies of Pittston filed a motion for summary judgment against the government. Casting the Export Clause as “unambiguous” and \textit{U.S. v. IBM} as “equally

\(^{\text{36}}\) \textit{Fairbanks} at p. 312 (“... we are of opinion that a stamp tax on a foreign bill of lading is in substance and effect equivalent to a tax on the articles included in that bill of lading, and therefore a tax or duty on exports, and in conflict with the constitutional prohibition.”)

\(^{\text{37}}\) \textit{Ranger Fuel Corp. v. United States}, 33 F.Supp.2d 466 (E.D. Virginia, 1998); \textit{Consolidation Coal Co. v. United States}, 528 F.3d 1344 (Fed. Cir. 2008). The West Virginia Supreme Court also relies upon the sale of an article and an excise tax on that article in its analysis of the constitutionality of taxation on coal. However, that analysis proceeds under the Import-Export Clause, so that, while an illuminating read, it does not seem to directly contribute to the analysis here. \textit{U.S. Steel Mining Co., LLC v. Helton}, 219 W. Va. 1 (West Virginia, 2005).

\(^{\text{38}}\) According to the court, the “Coal Excise Tax [was] enacted to finance the Black Lung Disability Trust Fund.” \textit{Ranger} at p. 468. The relevant statutes is 26 U.S.C. Section 4121. The “excise” tax is a hybrid \textit{ad valorem} and per weight tax. It sets a per ton levy upon coal which is not to exceed 4.4 percent of the price at which the ton of coal is sold by the producer.
prohibitive”, the district court, with literally two sentences of analysis, struck down the “excise” tax as applied to exported coal. Referencing only Spalding, the court asserted that “the Supreme Court has broadly proscribed excise taxes levied on a variety of goods.” In the second sentence of analysis, the court concluded that “[a]dditionally, the Supreme Court has invalidated a variety of taxes as violative of the Export Clause” (referencing only U.S. Shoe and Fairbanks v. United States). Hence, “[t]he blanket prohibition imposed by the Export Clause and the Supreme Court holdings interpreting that clause require this Court to hold the Excise Tax unconstitutional.”

An appellate court might eventual reach the same conclusion as the lower court, but unlikely with such a sparse analysis. The district court did not introduce the distinction between pre-export taxation and in export transit taxation, although the government seems not to have offered arguments that would have brought this matter to the court’s attention. The district court seems to place such reliance on labels (“Coal Excise Tax”) that it provides virtually no analysis of the character of the tax, when the tax is imposed, when the transfer of title occurs, or how it is known that the coal is in export transit at the time of the sale. All of these issues would likely have been considered on appeal, assuming competent counsel. The government, however, did not challenge the district court’s ruling, and Ranger Fuel instead became the authority for the IRS’s Notice 2000-28 and Audit Technique Guide for the Coal Excise Tax. These two documents federalized, and most like extended, the Ranger court’s ruling. Both seem of dubious validity.

39 Ranger at 469. The court does not say what other variety of goods. In Spalding, only baseball equipment as at issue and it did not call the tax an “excise” tax.
40 Id.
41 Id. ("The government has not provided and the Court is not able to discern any basis to distinguish the Coal Excise Tax from those held unconstitutional above.")
42 Id. ("The government has not provided and the Court is not able to discern any basis to distinguish the Coal Excise Tax from those held unconstitutional above.")
43 IRS Notice 2000-28, 2000-21 I.R.B. 1116. See http://www.irs.gov/Businesses/Small-Businesses-&-Self-Employed/Excise-Tax and http://www.unclefed.com/Tax-Bulls/2000/not00-28.pdf. Notice 2000-28, 2000-21 I.R.B. 1116 also defines “stream of export” (although this metaphor does not appear in the jurisprudence it appears to designate what the Supreme Court has labeled “in export transit”): “Coal is in the stream of export when sold by the producer if the sale is a step in the exportation of the coal to its ultimate destination in a foreign country.” The IRS notice then gives two examples. “For example, coal is placed into the stream of export when (1) the coal is loaded on an export vessel and title is transferred
Subsequent to Ranger Fuel, various coal producers challenged the constitutionality of a portion of the Surface Mining Control and Reclamation Act (SMCRA). Title IV of SMCRA established an Abandoned Mine Reclamation Fund for the purpose of restoring natural resources damaged by surface coal mining.\textsuperscript{44} Revenues for the fund are derived from a “reclamation fee” exacted upon “coal produced.”\textsuperscript{45} Coal company plaintiffs simultaneously contested the constitutionality of Department of Interior regulations implementing the challenged SMCRA language.\textsuperscript{46} After a long course of litigation, the U.S. Court of Appeals upheld the constitutionality of both the statute and the regulations (collectively, the Consolidation Coal cases).

The trial court initial dismissed the suit for lack of subject matter jurisdiction, reasoning that the suit challenged SMCRA implementing regulations and therefore fell under the exclusive jurisdiction of the United States District Court of the District of Columbia.\textsuperscript{47} (Consolidation I). On appeal, the Federal Circuit Court found that the Export Clause provided an independent and self-executing cause of action. Concluding that the district court’s jurisdiction was therefore appropriate, it remanded the case for consideration of the merits.\textsuperscript{48} (Consolidation II)

\textsuperscript{44} 30 U.S.C. Section 1231(a), (c), and (d). Consolidation Coal, 64 Fed.Cl. 718 at 720.
\textsuperscript{45} Id. at Section 1231(a). Consolidation at 720. In full, the Section reads: “All operators of coal mining operations subject to the provisions of this chapter shall pay to the Secretary of the Interior, for deposit in the fund, a reclamation fee of 35 cents per ton of coal produced by surface coal mining and 15 cents per ton of coal produced by underground mining or 10 per centum of the value of the coal at the mine, as determined by the Secretary, whichever is less, except that the reclamation fee for lignite coal shall be at a rate of 2 per centum of the value of the coal at the mine, or 10 cents per ton, whichever is less.”
\textsuperscript{46} 30 C.F.R. Section 870.12. Emphasis added.

On remand (Consolidation III), the trial court struck down the SMCRA reclamation fee as applied to exported coal as a violation of the Export Clause. “Most important to the inquiry at hand . . . are the court holdings recognizing that a tax on the sale of an article is the equivalent to a tax on the article; provided, of course, the sale occurs in the export process.”49 The government-defendant conceded both that the reclamation fee was not a user fee but a tax (again, labels not withstanding) and that the coal sales occurred in the export process.50 Both sides agreed that “the fee would be constitutional if imposed solely on extraction, which would be the equivalent of the manufacturing stage in Cornell . . . [and that] the fee . . . would be unconstitutional if imposed at the time the coal is sold.”51 (citing Spalding). The determinative inquiry is “the exact time at which the reclamation fee is imposed. Plaintiffs maintain that the reclamation fee is imposed at the time the coal is sold. Defendant . . . contends that the fee is only calculated at the time of sale.”52 (emphasis added)

The court further maintained that determining the point at which the reclamation fee is imposed depends, in turn, upon whether the statutory language “coal produced” means “coal extracted” or whether it designates the entire process of extracting and selling coal. If it designates “coal extracted” then the reclamation fee would avoid constitutional infirmity. Plaintiffs contended, and the court was persuaded, that this issue had been litigated before, in Drummond Coal v. Hodel.53

Drummond Coal involved a challenge to Interior regulations that elaborated on the same SMCRA language (“coal produced”) and allowed that, in calculating the weight of the coal at the time of sale, those impurities that had accumulated in the coal between extraction and sale would be included in the weight and were therefore subject to the tax. In Drummond, “[t]he plaintiff alleged that the Secretary did not possess the

49 Consolidation Coal v. U.S., 64 Fed.Cl. 718 (2005) (citing Spalding, Ranger Fuel, and Willcuts v. Bunn, 282 U.S. 216 (1931) (“A tax on the sale of an article, imported only for sale, is a tax on the article itself.”) Willcuts deals with a tax paid on the sale of bonds, not with the Export Clause. The appellate court, as seems appropriate, does not mention it in its opinion reversing.
50 Id. at p. 724.
51 Id. at p. 724.
52 Id. at p. 727.
authority to tax excess moisture which accumulated on the coal after it was extracted from the ground." 54 On appeal, the D.C. Circuit Court concluded that the Secretary’s regulations interpreting “coal produced” to include accumulated impurities were due Chevron deference and let the regulations stand. Thus, in Consolidation Coal III plaintiff coal companies presented Drummond Coal as standing for the principle that “coal produced” includes “the entire process of extracting and selling coal, complete from pit to buyer’s door.” 55

Citing a lower court decision and an unpublished opinion as persuasive authority, the trial court in Consolidation III then concluded that the reclamation fee was imposed at the point of sale, not calculated at the time of sale but imposed upon extraction. 56 All told, the trial court concluded that “coupled with defendant’s concession that the sale of coal occurs in the export process and with the court’s previous holding that the reclamation fee is imposed upon the sale of coal and burdens that event, . . . the reclamation fee as applied to exports is unconstitutional and cannot stand.” 57

On appeal, the Federal Circuit relied upon the doctrine of constitutional avoidance to conclude that “coal produced” (as used in both the statute and the

54 Consolidation III citing Drummond Coal at 1493.
55 Consolidation III at p. 728 citing Drummond Coal 796 F.2d at 505 (quoting 610 F.Supp. at 1497). The metaphor of “pit to door” is interesting, as very few pit mines remain and virtually no coal is delivered to doors. It represents, then, nostalgia for an innocent past of small, independent merchants and producers. In reading Dummond one might think that the challenged Interior regulations are not so much attempting to define the process of extraction, sale, and transportation as they are trying to define what counts as “coal” for the purposes of measurement at the time of sale. The regulations would thus be defining “coal” as including accumulated impurities, which the buyer is presumably taking on board and paying for. 56 Consolidation III at pp. 727-28. United States v. Spring Ridge Coal Co., 793 F.Supp. 124 127 (N.D.W.Va. 1992) and United States v. Consolidation Coal Co. 1987 WL 36307, at 1 (4th Cir. 1987) (811 F.2d 1505) (unpublished opinion). The appeal court mentions neither of these cases. Upon reflection, it is not clear why the court needs both the interpretation of coal produced and an analysis of when the fee (tax) was imposed. If the tax is imposed at the time of sale, as the court concludes from the lower court and unpublished opinion, then the interpretation of “coal produced” seems irrelevant since the tax is imposed upon a sale that takes place in export transit. It then does not matter what “coal produced” means. 57 Id. at p. 733. The trial court also considered whether the Congress’ commerce clause power might override the Export Clause prohibition and concluded that it does not. The appellate court said nothing of this concern.
regulation\textsuperscript{58}) means “coal extracted” and that the reclamation fee upon “coal produced” is constitutional. It also distinguished \textit{Drummond Coal}: “\textit{Drummond} involved the validity of a government regulation that directed that in calculating the tax on the gross weight of coal after it had been mined but before sale, the gross weight included impurities such as water that had not been removed. The court did not itself independently determine the meaning of the statutory term “coal produced,” but instead gave \textit{Chevron} deference to the regulatory definition of that term, which included water as part of the “coal produced.”\textsuperscript{59}

The Federal Circuit seems to have left us with the position that, when exacting the reclamation fee (which is a tax, not a fee), “coal produced” means the entire process from “pit to door” while from the point of view of the Export Clause, “coal produced” means “coal extracted.” The Federal Circuit would, therefore, seemingly be relying upon the difference between calculating a tax and imposing the tax, saying in effect that, although the tax is calculated at the time of sale it is imposed at the time of extraction.

This distinction between imposing a tax and assessing or calculating a tax is worth elaborating on. In particular, the Federal Circuit has deployed it in analyzing the Tarriff Act and NAFTA.\textsuperscript{60} \textit{Nufarm America’s, Inc. v. U.S.} was the first case to consider and uphold the constitutionality of the NAFTA duty-deferral program under NAFTA article 303.\textsuperscript{61} The \textit{Nufarm} court reports that in \textit{Ammex} an “Assessment was found to refer to a recordation of the calculated amount of liability, while imposition was found to be the creation, but not calculation of, liability.”\textsuperscript{62} In \textit{Nufarm} plaintiffs had imported chemical products into the United States under the Harmonized Tariff Schedule

\textsuperscript{58} \textit{Consolidation IV} does not make this explicit, but on remand the lower court does, in the face of plaintiff’s challenge that \textit{Consolidation IV} was interpreting only the statutory language and not the regulations.

\textsuperscript{59} \textit{Consolidation IV} at p. 1348 (citing \textit{Drummond} 796 F.2d at p. 507).

\textsuperscript{60} \textit{Ammex, Inc. v. United States}, 419 F.3d 1342 (Fed.Cir. 2005) and \textit{Nufarm America’s, Inc. v. U.S.}, 521 F.3d 1366 (Fed.Cir. 2008).

\textsuperscript{61} William Richmond, \textit{NUFARM AMERICSA’S INC. V. UNITED STATES: THE FIRST EXPORT CLAUSE CHALLENGE TO NAFTA’S DEFERRED TAX PROVISION}, 14. L. and Bus. Rev. of the America’s 825 (Fall 2008).

\textsuperscript{62} \textit{Nufarm} at p.1370 (citing \textit{Ammex} at 1345 (“While assessment determines the specific amount of liability, imposition is simply a statement that liability exists.”)}
(HTSUS), and then processed them. Upon export of the processed chemicals, Nufarm was required to pay the deferred duty. The court sustained the HTSUS against an Export Clause challenge, writing that the HTSUS “imposes liability upon import while postponing the assessment of the amount of the previously imposed importation duty.”

The appellate court in Consolidation, then, seems to rely upon this distinction, albeit without saying so. While there is no great need to try to harmonize this court’s interpretation of “coal produced” the distinction between imposing a tax and calculating or assessing is a potentially useful tool for constructing greenhouse gas mitigation policy, and will be given further consider when evaluating the constitutionality of CAT, in Section VI below.

In summary, when judging an Export Clause claim, federal courts will make the distinction between taxation upon an article that occurs pre-export and taxation upon an article that occurs in export transit. So long as the tax is pre-export, the Supreme Court will sustain its constitutionality under the Export Clause. Cornell stands for the principle that, so long as the tax is upon pre-exported articles, it does not matter if they were manufactured for export, even when under contract to a foreign buyer.

Under present jurisprudence, the point where an article enters into export transit need not be the receipt of the bill of lading, although at that point, it surely is. Both Supreme Court precedent and lower case law has indicated that the sale might bring the article into export transit, so that an “excise” tax upon that sale might violate the Export Clause. The legal analysis in these “excise tax” cases seems susceptible to challenge. However, greenhouse gas mitigation policy is probably not the ideal policy mechanism to assay the validity of this precedent.

V. Constitutionality of Cap and Trade

Given present Export Clause jurisprudence, it would be very difficult, perhaps impossible, to design a cap and trade (CAT) program so as both to cover exported hydrocarbons and avoid a challenge under the Export Clause. Under CAT a covered

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63 Id. at p. 1370.
firm is required to acquire and then submit emission permits equivalent to its assigned emission limit, designated in tons of CO$_2$.

The pricing thus occurs at the point of emitting carbon dioxide, the moment of, or just after combustion. Plainly, no exported hydrocarbon is combusted before it enters into export transit, for combustion destroys them. Hydrocarbons extracted and then exported would escape any domestic CAT pricing mechanism since they would be combusted in a foreign jurisdiction.

A CAT system would need a separate policy instrument if it is to price CO$_2$ emissions from hydrocarbons destined for export. One way to do this is to impose an “upstream” carbon tax on extracted hydrocarbons not otherwise covered by the CAT system. For the sake of discussion, call such a policy CAT plus carbon tax, and the carbon tax portion of such a policy the carbon tax addendum.

Under CAT plus carbon tax, all hydrocarbons combusted in the United States are subject to the CAT permitting system, while extracted hydrocarbons not combusted in the jurisdiction would have one of two destinations: either exportation or non-combustive uses. Under CAT plus carbon tax, all uncombusted hydrocarbons that will result in carbon dioxide emissions will be exported hydrocarbons.

The CAT plus carbon tax raises two obvious worries. First, one would be needlessly multiplying administrative complexity, for it is effectively two policies: a CAT policy for one part of the hydrocarbon stream and a carbon tax for another part. So long as otherwise equally effective (which it seems it would be), an upstream carbon tax simpliciter ought to be preferred. This alone will be enough to settle the issue for many.

Second, by layering this additional complexity upon a CAT system, one exposes the carbon tax addendum to a strong Export Clause challenge; indeed, a stronger challenge than could be lodged against an upstream carbon tax simpliciter. Under CAT plus carbon tax, counsel defending the policy would have to argue that Export Clause

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64 See generally, THE OXFORD HANDBOOK OF CLIMATE CHANGE AND SOCIETY, John Dryzek, Richard Norgaard, and David Schlosberg eds., Section IX: Government Reponses, pp. 521-80. California has recently commenced its own CAT system, ten Northeastern states are operating a CAT covering electricity generators, and the EU's CAT has been operational since 2005.

65 There might be alternative options here, but they presently escape the imagination of the author.
jurisprudence allows the *imposition* of a tax on pre-export articles (the extracted hydrocarbons) that were destined for export, while known to be destined for export and while in fact in export transit, which is the time the tax would be *assessed*.

*Cornell* is the most analogous precedent. The tax in that case was assessed and imposed (insofar we can apply this distinction retrospectively) upon manufactured filled cheese. The court held that even though some portion of the filled cheese was manufactured under contract to a foreign buyer, and was hence destined for export, the tax as imposed upon that cheese did not violate the Export Clause.

The analogy between *Cornell* and the carbon tax addendum breaks down insofar as under the carbon tax addendum, the tax would be imposed at the point of extraction, upon articles destined for export, and assessed while in export transit. In *Cornell*, the tax was assessed on the pre-export side of the course of commerce. In the context of an Export Clause challenge to the carbon tax addendum, there would therefore be a greater sense that the tax was levied upon an article in export transit, rather than merely upon a pre-export article destined for exportation. The closeness of the connection between exportation and taxation, while perhaps sustainable from the point of fine legal theory, would be difficult for a court to resist.

Furthermore, the CAT plus carbon tax policy not only exposes the policy itself to constitutional challenge but also places the precedent that would allow an upstream carbon tax *simpliciter* to avoid constitutional infirmity under the Export Clause. That is, in evaluating CAT plus carbon tax, a court might examine the carbon tax addendum, note that it is assessed in export transit and signals out only exported hydrocarbons, and not only rule the entire carbon tax addendum unconstitutional but take the opportunity to jettison the pre-export/in export transit distinction and drive the applicability of the Export Clause all the way back to the point of extraction. *Cornell*, in particular, would be exposed to being overturned. The Court could understand a contract as evidence that the article was destined for export, and recognize intent to export as sufficient to activate the Export Clause. From the point of view of climate policy, these would not be welcome changes to Supreme Court jurisprudence.
VI. A Brief Description of an Upstream Carbon Tax

If it is desired that a national carbon dioxide mitigation policy include a price on extracted hydrocarbons destined for export, then that policy needs to be an “upstream” carbon tax imposed upon hydrocarbons before they enter into export transit. In what follows, I sketch some of the major design issues that an “upstream” carbon tax must address, if it is to avoid an Export Clause challenge.

Since the extraction, preparation, transportation, and uses of the three major hydrocarbons are different, both technically and with respect to the industries’ business models, and because an upstream carbon tax will be layer upon an already existing regulatory regime, the detailing of an “upstream” carbon tax is a complicated exercise. The task is exasperated by the concern that a carbon tax, to be truly effective will probably need to be attended by other policy instruments that break down barriers to investment in energy efficiency, demand response, and distributed energy production, amongst a myriad of other goals. In the section, however, I am only concerned with broadly sketching how the Export Clause might sculpt an “upstream” carbon tax. The effort here is not to offer definitive proposals, but start the discussion on how best to structure an upstream carbon tax. The analysis commences with the suggestions of Metcalf and Weisbach, who in their 2009 paper, “The Design of a Carbon Tax”, indicate preferable points for levying a carbon tax, from the point of view of administrative efficiency.\(^{66}\)

1. Coal

Of the three hydrocarbons, coal is most carbon intensive, delivering the least amount of energy per ton of carbon dioxide emitted.\(^{67}\) Although coal remains abundant within the United States, anthracite, which of the coals has the highest ratio of energy to carbon, is largely depleted.\(^{68}\) While the urgency of eliminating reliance on coal is the


\(^{67}\) See generally, Energy Information Agency at http://www.eia.gov/electricity/annual/html/epa_a_03.html

\(^{68}\) American Chemical Society, CHEMISTRY IN CONTEXT: APPLYING CHEMISTRY TO SOCIETY 7TH ED., p. 163, McGraw Hill 2009.
sharpest of the three hydrocarbons, an upstream carbon tax on its extraction is also the simplest to structure so as to avoid constitutional infirmity under the Export Clause.

Metcalf and Weisberg argue that the carbon tax ought to be imposed upon the miner or the importer of coal, noting that in 2006 there were 1,438 operating mines in the U.S.\textsuperscript{69} The Export Clause does not require a modification of this suggestion.

Unlike natural gas or petroleum, coal is subject to minimum processing before use. Non-coal impurities are removed and the size of the coal is mechanically altered, but the chemical composition of the mineral remains the same until combustion. Since virtually all coal is combusted, either for the generation of an electrical current or for industrial heat, there is no need at any time in the course of its commerce to identify different uses to which it may be put.\textsuperscript{70} There is thus no need to identify users of the coal and consequently no reason to identify the location of those users. Upon coal, the upstream carbon tax can “simply” be styled as a severance tax paid by the producer upon the carbon content of the coal at the time of extraction. At that time, the miner will already know both the type of coal and the mass of that coal, which is all that is needed to determine its prospective carbon dioxide emissions. A system of rebate credits would be distributed for any carbon dioxide captured and sequestered. While there are many policy consideration associated with the rebates, they do not generate Export Clause concerns.

2. Natural Gas

Metcalf and Weisberg propose that

\[ \text{[t]he collection point for the tax on natural gas needs to minimize administrative costs while maximizing coverage. The two most likely places to do this are at the operator level or at the processing plant (plus imports and coal-bed methane). Operators already pay state severance taxes, which means that they have the administrative capacity to pay the tax and that states are already collecting the necessary data. Although there are many small operators,} \]

\textsuperscript{69} Metcalf and Weisberg at p. 526.

taxing the top 500 would capture almost all the natural gas produced in the United States. If the tax is levied on the processor, small operators would no longer be able to avoid the tax, and the tax system would not need to address the problem of different wells producing natural gas of differing carbon content (i.e., differing amounts of contaminants). The problem with taxing the processor is that some natural gas is put into the pipeline system without processing. Either choice may be sensible.\textsuperscript{71}

Does the Export Clause jurisprudence make one more choice more sensible than the other?

Some natural gas is extracted in conjunction with a petroleum reservoir ("associated-dissolved" gas). Formerly, this gas was flared\textsuperscript{72} Now, it can be separated and collected, at which point it enters the same system of processing and transmission as extracted natural gas not associated with a petroleum reservoir (non-associated gas).\textsuperscript{73} Most natural gas production includes hydrocarbons of up to eight carbons in length. The larger of these hydrocarbons are a gas under pressure, but condense into liquids under normal atmospheric pressure and are called natural gas liquids (NGL).\textsuperscript{74} Coalbed methane (CBM) is an exception and is usually a mix of methane and carbon dioxide.\textsuperscript{75} In the case of non-associated gas, some of these NGLs are extracted before reaching the processing plant at the well-head by means of a mechanical separator.\textsuperscript{76} These NGL are called lease-condensate.\textsuperscript{77} The lease-condensate (pentanes and heavier) should also be covered by a carbon tax even though they are separated before the

\textsuperscript{71} Metcalf and Weisberg at p. 525.
\textsuperscript{74} Natural Gas Processing.
\textsuperscript{75} Natural Gas Processing at p. 2; HANDBOOK OF NATURAL GAS TRANSMISSION AND PROCESSING, p. 7.
\textsuperscript{76} Natural Gas Processing at p. 4.
\textsuperscript{77} Natural Gas Processing at p. 4.
processing plant. However, NGLs have non-combustive uses, so a rebate system might be required.

Some small portion of non-associated gas is of “pipeline quality” at the wellhead and can enter directly into the pipeline system without further processing. As indicated by Metcalf and Weisberg, the carbon tax should cover this methane as well.

Gas that has been separated from its associated petroleum but is not yet of pipeline quality is next sent through “gathering lines” to a processing plant, of which there are a great variety. At or on the way to the processing plant other impurities are removed from the “wet” gas, including hydrogen sulfide, carbon dioxide, water vapor, helium, oxygen, and nitrogen. At the processing plant methane is further separated from the heavier hydrocarbons, a process called demethanization. The product of demethanization is more NGLs and “dry” gas of “pipeline quality.” Once separated from the methane the NGL are fractionated, stored, and sent to market. A carbon tax should cover these fractionated NGL as well, although, again, some have non-combustive uses.

From the processing plant, the methane enters the pipeline system. When it does so it must be of “pipeline quality”, i.e., meeting specifications needed to prevent corrosion of the pipeline grid and ensure a uniform marketable product. It is then known as “dry” gas. Determining the carbon content of dry gas would not be difficult.

Natural gas might be exported from the United States by either pipelines or liquefaction. Presently, all pipeline exportation takes places, and could only take place between Canada and Mexico. NAFTA, then, might influence the design of a carbon tax. Although the U.S. is presently a net importer of natural gas, some could also be exported by means of the liquefaction of the natural gas, which is then transported by

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78 Natural Gas Processing at p. 3.
79 Natural Gas Processing at p.
80 EIA, WHAT ARE THE NATURAL GAS LIQUIDS AND HOW ARE THEY USED? (available at http://www.eia.gov/todayinenergy/detail.cfm?id=5930.)
specially designed cargo vessel to a port where it is regasified. There are presently eight natural gas importation facilities, which are relatively less complex than exportation facilities.\textsuperscript{82} The DOE has approved four export facilities and the FERC has recently permitted the construction of one of these facilities.\textsuperscript{83}

At present, because LNG facilities are capital intensive, natural gas for LNG is supplied through long-term contractual agreements between producers, processors, and buyers.\textsuperscript{84} Title appears to transfer either at the time of loading, in the course of shipping, or receipt of buyer.\textsuperscript{85} Cornell stands for the proposition that articles produced under contract are not free of non-discriminatory pre-export taxation. Hence, in both the case of pipeline export and liquefaction, imposing the carbon tax at either the operator level or at the processor level seems to occur before the natural gas enters “into export transit” so Export Clause concerns do not arise. If this is right, and further research might indicate otherwise, the choice between imposing the carbon tax at the wellhead or the processor depends upon administrative efficiency.

3. Petroleum

Metcalf and Weisbach consider imposing the carbon tax at the well and at the refinery. “There are only 148 operating refineries in the US in 2008, making the refineries a logical place to impose the tax. Refineries could pay a separate tax on each distillate depending on the carbon content. Distillates, such as tar, that will not be burned would not be subject to tax. Imports of crude from countries with no carbon pricing system would be subject to the tax at the refinery without any special provision. Imports of refined products (about 3.5 million barrels/day), however, would need to be

\textsuperscript{82} Energy Information Agency, U.S. NATURAL GAS IMPORT/EXPORT LOCATIONS, AS OF THE END OF 2008. [recheck numbers before publ.]


\textsuperscript{84} Andrew Inkpen and Michael H. Moffett, THE GLOBAL OIL & GAS INDUSTRY: MANAGEMENT, STRATEGY & FINANCE, Penwell p. 345-46 (Tulsa, Oklahoma 2011).

taxed.” In a footnote, they further comment that the fuels used by the refinery would need to be included in the tax base. Without special provision in the carbon tax, those fuels could escape the tax base because the refineries often use the lightest fractions (1-4 carbon atoms, called “refinery gases”) to fuel their own distillation towers.

Imposing the carbon tax on petroleum once it has been refined and the use of the distillate is known would avoid having to create a system of rebate credits. However, the use of the distillate (whether combustive or non-combustive) cannot be know from the character of the distillate alone. Some distillates, such as tar (which has more than 20 carbon atoms), presently have no combustive uses. Other distillates might be combusted or used as “feedstock.” For instance, butane (4 carbons) is both blended with gasoline, and therefore combusted, and used as a feedstock for the production of butadiene, a chemical precursor of synthetic rubber, hoses, belts, shoes, and other products. It appears that the use of these distillates cannot be identified except in reference to the intent of the buyer, and the point of sale would be the point at which this is known. Hence, if the carbon tax is imposed at the point of the refinery and the various uses of the distillates are accounted for, the carbon tax is exposed to an Export Clause challenge. Recently, the U.S. has become a net exporter of refined petroleum products.

There seem to be two alternatives available for avoiding an Export Clause challenge. One is to place the tax on the carbon content of petroleum at the point of extraction and to issue rebate credits for petroleum distillates that have a non-combustive use. As with natural gas, then, this would be a “severance” tax plus a rebate system. This alternative increases the number of rebate credits in the carbon permit market but seemingly avoids worries over constitutional infirmity under the Export Clause challenge.

86 Metcalf and Weisberg at p. 527.
87 American Chemical Society, CHEMISTRY IN CONTEXT: APPLYING CHEMISTRY TO SOCIETY, p. 168.
Clause. Alternatively, one could impose the tax upon the carbon content of the distillates and then issue rebate credits to any users of those distillates who certify that they have not combusted the distillate. Fewer rebate credits would need to be issued under this organization of the carbon tax and to fewer and entities, reducing administrative complexity. Further research regarding the transfer of title with respect to petroleum and petroleum products could alter this analysis.

4. **An Upstream Carbon Tax is not an Excise Tax**

Throughout the crafting of a carbon tax, it should also be kept in mind that a carbon tax might be distinguished from an “excise” tax, even if it is not imposed at the point of extraction. An upstream tax on prospective carbon dioxide emissions is not exacted upon either a sale or an activity. It is certainly not an *ad valorem* tax based upon the exchange value of the article at the time of sale. Rather, the carbon tax is based upon the amount of carbon dioxide that will be emitted upon combustion of the hydrocarbon, and this is a function of the mass and the chemical composition of the hydrocarbon. The carbon tax, then, is more akin to a severance tax, which seems to distinguish it from that precedent identifying an excise tax on the sale as a possible violation of the Export clause prohibition. It is thus also a tax on extraction, fitting it within that precedent identifying a tax on extraction as free from constitutional infirmity under the Export clause. However, in the face of comprehensive mitigation policy, it is unlikely that the hydrocarbon industry will concede either that a carbon tax is a severance tax, rather than an excise tax, or that that a severance tax is immune from Export Clause challenge.

VI. **Conclusion**

An upstream carbon tax is only one aspect of a comprehensive greenhouse gas mitigation policy. It only corrects the “distorted price signal” caused by a failure of “the market” to internalize the externalized costs associated with carbon dioxide pollution. It is not an adaption policy. It is not a carbon dioxide drawdown policy. It is not an end sufficient in itself, but merely necessary. It must, nonetheless, be effectively crafted, with constitutional limitations respected. This paper has suggested that CAT could not properly price exported hydrocarbons but that an upstream carbon tax could. If this is
so, and if it is desired that national mitigation policy price hydrocarbons destined for export, then the crafting of such a policy is of great concern.