

## ***How Professor Stewart has Promoted Equity, Effectiveness and Transparency in Environmental Law: A Practitioner’s View***

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Professor Stewart’s impact on the practical development, design and implementation of environmental law has been profoundly deep and extremely broad. His writings have been influential in key substantive areas such as addressing the risks of nuclear waste and genetically modified organisms, and in key geographies, from China to Eastern Europe and across the entire United States. In academia, in government, and in private practice, he has mentored, challenged, and connected a far-flung fellowship of future environmental law leaders.

Here, from the point of view of a practitioner, I wish to sketch a few concrete examples that demonstrate how his scholarship and the force of his persona have promoted *equity, effectiveness, and transparency* in environmental law, including international environmental law. I’ll conclude with a brief personal look-back and look-ahead.

### **I. Promoting Equity and Effectiveness: Proof Positive in California**

Almost 35 years ago, Professor Stewart made the case that incentive-based environmental policy could be more effective – and more equitable – than command-and-control or Best Available Control Technology (BACT) regulation. He advocated “reconstitutive strategies to protect health, safety, and the environment *and to ensure adequate provision of services and*

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*assistance to the poor and disadvantaged.*”<sup>2</sup> Writing from the vantage point of the Reagan years, Professor Stewart noted, “Federal controls have been challenged on the grounds that they hinder productive investment and innovation, stifle diversity, over-centralize decisional responsibility, and spawn costly, divisive, and politically unrepresentative adversary litigation. The proposed solution to these ills is delegalization” – or in today’s vernacular, regulatory rollback. In words that ring strikingly true today, Professor Stewart argued that the “choice between centralized prescription and delegalization is a false one, created by two erroneous premises underlying the debate. The first erroneous premise is that social and economic justice can only be achieved through legal prescriptions. The second is that devolution and deregulation involve reduced reliance on law to resolve social and economic questions.” He advocated for a “third approach that would effectively promote national goals but avoid many of the problems generated by centralized prescription.” His third alternative was a “reconstitutive strategy” that recast federal initiatives via expanded work force protections and market-based environmental policy. As he saw it, “The problem in many areas is not too much or too little federal regulation, but federal regulation of the wrong sort.”

The environmental justice movement today rightly demands that governments and companies dismantle environmental racism and redress the legacy of environmental discrimination.<sup>3</sup> Over three decades ago, Professor Stewart recognized the great potential of

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<sup>2</sup> Richard B. Stewart, *Reconstitutive Law*, 46 Md. L. Rev. 86 (1986) (emphasis added). Available at: <https://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=2639&context=mlr>

<sup>3</sup> For recent studies on environmental racism/environmental discrimination, see Ihab Mikati BS, Adam F. Benson MSPH, Thomas J. Luben PhD, MSPH, Jason D. Sacks MPH, and Jennifer Richmond-Bryant PhD, “Disparities in Distribution of Particulate Matter Emission Sources by Race and Poverty Status,” *American Journal of Public Health (AJPH)* April 2018 (Accepted: December 16, 2017 Published Online: March 07, 2018), <https://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2017.304297> and see Vann R. Newkirk II, “Trump's EPA Concludes Environmental Racism Is Real,” *The Atlantic* (2018).

well-designed market-based environmental policy to boost effectiveness, reduce costs, *and* address equity concerns. Anticipating the distributive justice critique that is resounding today,<sup>4</sup> he emphasized the importance of designing into the market-based systems, from the get-go, provisions to ensure that the systems operate to the benefit not the detriment of poor and underserved communities. He argued that economic incentive systems should not be viewed “solely as mere instruments to achieve a specific goal such as clean air. Economic incentive systems can incorporate and promote intrinsic process values. Transferable pollution rights socialize the market by making firms responsible for the externalities that they generate.”<sup>5</sup>

To ensure these economic incentive systems achieved the equity goals, he recommended pairing them with other innovations, including expansions of labor rights and initiatives to restructure the generation, transmission, and local distribution of electricity.<sup>6</sup> Furthermore, in incentive systems, he suggested, “The number of air pollution permits could be tightly restricted in order to promote noncommodity values, including health and preservation of exceptionally scenic areas.”<sup>7</sup>

Two of Professor Stewart’s seminal 1988 works – “Controlling Environmental Risks Through Economic Incentives”<sup>8</sup> and “Reforming Environmental Law: The Democratic Case for Market Incentives”<sup>9</sup> – not only lay out the case for harnessing the power of markets to drive

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<https://www.theatlantic.com/politics/archive/2018/02/the-trump-administration-finds-that-environmental-racism-is-real/554315/>

<sup>4</sup> See, e.g., Simon Caney and Cameron Hepburn, “Carbon Trading: Unethical, Unjust and Ineffective?” 69 Royal Institute of Philosophy Supplements 201-234 (2011), <https://mahb.stanford.edu/wp-content/uploads/2016/08/Caney-Hepburn-2011-RIP-Carbon-trading-unethical.pdf>

<sup>5</sup> Reconstitutive Law at 108-110.

<sup>6</sup> Reconstitutive Law at

<sup>7</sup> Reconstitutive Law at note 52.

<sup>8</sup> 13 Columbia J. Envir. L. 153 (1988).

<sup>9</sup> 13 Columbia J. Envir. L. 171 (1988) (with Bruce A. Ackerman) (hereinafter “The Democratic Case”).

environmental protection, but also provide the foundation for ensuring that those market-based environmental policies can promote equity and address discrimination.

For example, in 1988 Professor Stewart called for the establishment of “an ongoing system of data collection and analysis” so that environmental law, including emissions caps, could be premised on real data rather than on projections or ad hoc reports. Without such a system, he warned, there could be little hope of constructing a regulatory framework that is responsive to local environmental and economic concerns – precisely what is needed to identify and provide the foundation for policies that effectively address systemic environmental injustice.<sup>10</sup> Connecting with and anticipating the concerns of those whom traditional forms of environmental regulation marginalize, he showed how market-based policies could engage those who historically have not had the means or ability to participate in environmental rule-making despite the fact that their interests would be most affected, as he emphasized the importance of “allowing a wider public to address basic issues that the present regulatory system obscures under a flood of technocratic mumbo-jumbo.”<sup>11</sup>

Anticipating the critique that policy based on economic incentives allow human health and environmental integrity to be traded off for dollars,” Professor Stewart trenchantly observed, “This criticism confuses ends and means and also ignores the inescapable need to choose among competing values in defining our goals. ”<sup>12</sup>

His rejoinder is as apt now as it was then: “While attacked as a ‘license to pollute,’ economic incentives in fact require industry to pay -for the use of common resources rather than giving away this valuable privilege for nothing, as regulatory permit programs do.”<sup>13</sup> Professor

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<sup>10</sup> The Democratic Case, 13 Columbia J. Envir. L. 171, at 193 (1988).

<sup>11</sup> The Democratic Case, 13 Columbia J. Envir. L. at 171.

<sup>12</sup> Controlling Environmental Risks through Economic Incentives at 163.

<sup>13</sup> Id.

Stewart is always careful to distinguish between scientific/economic tools that may be used to help decide what goals to aim for, on the one hand, and the choice of policies to achieve those goals. “[T]he use of economic incentives to achieve environmental goals by no means requires that we set goals themselves through economic criteria such as cost/benefit analysis. . . . We might wish, for example, to set ambitious, self-sacrificing goals for reducing acid rain or carbon dioxide generation in order to preserve the world's ecosystems for the sake of future generations. Economic incentives would nonetheless be the best means of achieving these non-economic goals.”<sup>14</sup>

Countering the distributive justice critique that “economic incentives would allow the wealthy to ‘buy up’ the environment,”<sup>15</sup> he noted that “this criticism is also based on misconception. In a market economy, resources should presumptively be allocated through supply and demand to ensure their efficient use. If we decide to use the air and water to dispose of a limited amount of industrial residuals, there is no reason why we should not allocate the use of the air and water for this purpose throughout the market, just as we allocate other resources. . . . It may be that, for equity or other reasons, we may want to subsidize certain polluters, such as municipalities or economically marginal firms; this should be done openly and explicitly by charging them lower fees or issuing them permits for a reduced fee.”<sup>16</sup>

Focusing on a key issue of concern from an environmental justice perspective, Professor Stewart anticipated the “hot-spot” problem, in which “localized concentrations of pollution must be strictly controlled in order to prevent dangerous thresholds from being exceeded,”<sup>17</sup> and

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<sup>14</sup> Controlling Environmental Risks through Economic Incentives at 163.

<sup>15</sup> Controlling Environmental Risks through Economic Incentives at 163.

<sup>16</sup> Controlling Environmental Risks Through Economic Incentives, at 163-164. (hereinafter “Economic Incentives”). <https://journals.library.columbia.edu/index.php/cjel/article/download/5739/2800>

<sup>17</sup> Controlling Environmental Risks through Economic Incentives at 165.

he proposed specific measures to prevent and address it, starting with statutory design.<sup>18</sup> Going one step further, he underscored the potential of permit auctions to generate significant revenues that could be channeled to helping address economic-environmental discrimination.<sup>19</sup> Noting that “income transfers from rich to needy jurisdictions reflect and promote solidarity values of mutual concern and aid,”<sup>20</sup> he suggested using not only auction revenue allocation, but also societal decisions about the initial allocation of allowances, , to address distributive concerns.<sup>21</sup>

The wisdom of the Democratic Case and its design principles is borne out by the California experience. Two decades after the publication of “Reconstitutive Law”, California instituted a suite of climate policy measures. California’s 2006 Global Warming Solutions Act, Assembly Bill AB 32 (Pavley),<sup>22</sup> set a 2020 target of returning the state’s greenhouse gas (GHG) emissions to 1990 levels. To implement this goal, California’s Air Resources Board (ARB) adopted a cap-and-trade program. A decade later, California set a 2030 target of cutting emissions 40 percent below 1990 levels and extended the cap-and-trade program.<sup>23</sup> The program is now the second-largest such program in the world (after the European Union’s Emissions Trading System, EU-ETS).<sup>24</sup>

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<sup>18</sup> The Democratic Case at notes 49-50.

<sup>19</sup> The Democratic Case at 180.

<sup>20</sup> Reconstitutive Law at 108-110.

<sup>21</sup> It is also borne out by the experience of the European Union’s Emissions Trading System, although a detailed examination of that is beyond the scope of this essay. See generally Towards a Climate-Neutral Europe: Curbing the Trend (Jos Delbeke, Peter Vis, eds.) (European Union and Routledge Books, 2019), [https://ec.europa.eu/clima/sites/clima/files/toward\\_climate\\_neutral\\_europe\\_en.pdf](https://ec.europa.eu/clima/sites/clima/files/toward_climate_neutral_europe_en.pdf); and see EU Climate Policy, Explained (Jos Delbeke, Peter Vis, eds.) (European Union, 2016), [https://ec.europa.eu/clima/sites/clima/files/eu\\_climate\\_policy\\_explained\\_en.pdf](https://ec.europa.eu/clima/sites/clima/files/eu_climate_policy_explained_en.pdf). **[[Optional citations if room:** See also <https://www.edf.org/sites/default/files/harvesting-the-low-carbon-cornucopia-march2007.pdf> and [https://www.edf.org/sites/default/files/EU\\_ETS\\_Lessons\\_Learned\\_Report\\_EDF.pdf](https://www.edf.org/sites/default/files/EU_ETS_Lessons_Learned_Report_EDF.pdf) (2012). ]]

<sup>22</sup> California Legislative Information (2006). “Assembly Bill No. 32, Text.”

[http://leginfo.ca.gov/faces/billNavClient.xhtml?bill\\_id=200520060AB32&search\\_keywords](http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=200520060AB32&search_keywords)

<sup>23</sup> Danae Hernandez-Cortes and Kyle C. Meng, “Do Environmental Markets Cause Environmental Injustice? Evidence from California’s Carbon Market,” National Bureau of Economic Research (2020)

<https://www.nber.org/papers/w27205>

<sup>24</sup> Danae Hernandez-Cortes and Kyle C. Meng, “Do Environmental Markets Cause Environmental Injustice? Evidence from California’s Carbon Market,” National Bureau of Economic Research (2020)

<https://www.nber.org/papers/w27205>

A careful examination of the cap-and-trade-program demonstrates how closely it hews to Professor Stewart’s prescient recommendations - from overall policy design to specific elements promoting equity.

First, consider how it set the caps.<sup>25</sup> The California Legislature set the program’s original emissions caps premised squarely on the science, based on reports of the Intergovernmental Panel on Climate Change (IPCC). Working from precisely the kind of “ongoing system of data collection and analysis” that Professor Stewart called for in The Democratic Case, California’s Air Resources Board (CARB) translated those into limits for sub-sectors.<sup>26</sup> And in developing the caps and regulations, CARB undertook extensive stakeholder outreach to bring in views of the “wider public,” ensure the engagement of environmental justice advisors, scientists, economists, and other local community actors across the state.

Second, consider California’s quarterly emissions allowance auctions. California’s program design requires some of the auction proceeds going to utility ratepayers in the form of rebates and some into the Greenhouse Gas Reduction Fund (GGRF).<sup>27</sup> Assembly Bill AB 1532 (Pérez)<sup>28</sup> mandates that GGRF moneys must be used to facilitate the achievement of reductions

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<sup>25</sup> For a summary, see K. Roedner, “California’s Cap and Trade Program, Step by Step,” Environmental Defense Fund (2019). <https://www.edf.org/sites/default/files/californias-cap-and-trade-program-step-by-step.pdf>

<sup>26</sup> The collection of actual data has provided a solid foundation for the California program. By contrast, programs such as the EU ETS and the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), developed by the International Civil Aviation Organization (ICAO), which originally established their emissions caps based on emissions projections, not historical data, have experienced hiccups as a result. The EU ETS experienced an early market crash when actual emissions data produced after the adoption of the initial cap showed that the cap was far too lax. See L.M. Brown et al, “The EU Emissions Trading System: Results and Lessons Learned,” (EDF 2012) [https://www.edf.org/sites/default/files/EU\\_ETS\\_Lessons\\_Learned\\_Report\\_EDF.pdf](https://www.edf.org/sites/default/files/EU_ETS_Lessons_Learned_Report_EDF.pdf). In 2016, ICAO capped the emissions of international flights for the years 2021-2035 and set the cap at the average of 2019-2020 levels; when 2020 emissions dropped dramatically due to the COVID-19 pandemic, airlines sought and obtained a re-set of the cap at 2019 levels for the first three years of the program, resulting in a likely zeroing of demand for emissions units during those years. See “Impact of COVID-19 on CORSIA design,” (ICAO 2020) <https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-and-Covid-19.aspx>.

<sup>27</sup> See generally Colleen Callahan & J.R. De Shazo, “Investment Justice through the Greenhouse Gas Reduction Fund: Implementing SB 535 and Advancing Climate Action in Disadvantaged Communities,” UCLA Luskin Center for Innovation (2014), [https://innovation.luskin.ucla.edu/wp-content/uploads/2019/03/Investment\\_Justice\\_Through\\_the\\_Greenhouse\\_Gas\\_Reduction\\_Fund.pdf](https://innovation.luskin.ucla.edu/wp-content/uploads/2019/03/Investment_Justice_Through_the_Greenhouse_Gas_Reduction_Fund.pdf)

<sup>28</sup> California Legislative Information (2012). “Assembly Bill No. 1532, Text.”

of GHG emissions in this state and complementary goals including maximizing economic, environmental and public health benefits to the state. Senate Bill 535 (de León) requires that the California Department of Finance allocate at least 25% of the auction proceeds in the GGRF to projects that provide benefits to disadvantaged communities, and to allocate at least 10% to projects located in these communities.<sup>29</sup> Just as Professor Stewart envisioned over thirty years ago, the program is channeling resources to those in need.

Three results are noteworthy. First, as California moves belatedly to address the disparate and discriminatory impacts of pollution,<sup>30</sup> policy-makers should note the empirical evidence indicating that California’s cap-and-trade program has not only been extraordinarily effective in cutting greenhouse gas emissions – the program enabled California to meet its goal of 1990 emissions levels four years early, by 2016<sup>31</sup> – it has also narrowed the disparity in local air pollution exposure between disadvantaged and other communities.<sup>32</sup> The program on its own has not eliminated the gap, but it has helped reduce it, validating Professor Stewart’s hypothesis

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[http://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201120120AB1532](http://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201120120AB1532)

<sup>29</sup> California Legislative Information (2012). “Senate Bill No. 535, Text.”

[http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201120120SB535&search\\_keywords=](http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120SB535&search_keywords=). See also Danae Hernandez-Cortes and Kyle C. Meng, “Do Environmental Markets Cause Environmental Injustice? Evidence from California’s Carbon Market,” National Bureau of Economic Research (2020)

<https://www.nber.org/papers/w27205>

<sup>30</sup> “Fumes Across the Fence Line” (NAACP and CATF 2017), [http://www.naacp.org/wp-content/uploads/2017/11/Fumes-Across-the-Fence-Line\\_NAACP\\_CATF.pdf](http://www.naacp.org/wp-content/uploads/2017/11/Fumes-Across-the-Fence-Line_NAACP_CATF.pdf) (quantifying the elevated health risk that millions of African Americans face due to pollution from oil and gas facilities, and underscoring the need to address not only acute incidents like Aliso Canyon methane gas leak, which affected the exclusive gated communities in the immediate area of the leak, but also the chronic pollution exposure of disproportionately low-income communities of color in Los Angeles who live right next to some of the 5,000 active drilling sites in the city).

<sup>31</sup> Colleen Callahan & J.R. De Shazo, “Investment Justice through the Greenhouse Gas Reduction Fund: Implementing SB 535 and Advancing Climate Action in Disadvantaged Communities,” UCLA Luskin Center for Innovation (2014), [https://innovation.luskin.ucla.edu/wp-content/uploads/2019/03/Investment\\_Justice\\_Through\\_the\\_Greenhouse\\_Gas\\_Reduction\\_Fund.pdf](https://innovation.luskin.ucla.edu/wp-content/uploads/2019/03/Investment_Justice_Through_the_Greenhouse_Gas_Reduction_Fund.pdf)

<sup>32</sup> Danae Hernandez-Cortes and Kyle C. Meng, “Do Environmental Markets Cause Environmental Injustice? Evidence from California’s Carbon Market,” National Bureau of Economic Research (2020) <https://www.nber.org/papers/w27205>

that well-designed market-based environmental policies are a powerful tool that can be deployed to help rectify environmental disparities.

Second, the auction has generated significant revenues and support for advances in climate protection. “The proceeds from California's quarterly sale of emissions allowances have become the main avenue for climate spending in California, with \$13 billion raised since auctions began in 2012. The Greenhouse Gas Reduction Fund has supported hundreds of millions of dollars in incentives for zero-emission vehicles, school bus replacements and transit, among other emissions-cutting projects.”<sup>33</sup>

Third, auction price volatility in the context of the COVID-19 pandemic has introduced considerable uncertainty into the revenue streams from California’s cap-and-trade program,<sup>34</sup> underscoring the importance of Professor Stewart’s caution about undue reliance on auction revenues. As he has pointed out to me on more than one occasion, relying unduly on emissions allowance auction revenue to fund environmental improvements is like funding health care from taxes on cigarettes – it leads to perverse incentives for government to want people to continue smoking, because if the tax is successful in dramatically reducing smoking, the funds for health care will dry up.<sup>35</sup> It remains to be seen whether California will, post-pandemic, adopt refinements to its system to rely more on allowance allocation, as opposed to auction revenues, to strengthen the environmental justice aspects of its generally effective framework.

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<sup>33</sup> Debra Kahn, “California climate programs see bottom fall out of main funding source”, Politico, June 2, 2020. <https://www.politico.com/states/california/story/2020/06/02/california-climate-programs-see-bottom-fall-out-of-main-funding-source-1289867#:~:text=The%20proceeds%20from%20California's%20quarterly,since%20auctions%20began%20in%202012.>

<sup>34</sup> Debra Kahn, “California climate programs see bottom fall out of main funding source”, Politico, June 2, 2020. <https://www.politico.com/states/california/story/2020/06/02/california-climate-programs-see-bottom-fall-out-of-main-funding-source-1289867#:~:text=The%20proceeds%20from%20California's%20quarterly,since%20auctions%20began%20in%202012.>

<sup>35</sup> Professor Richard Stewart, personal communication.

## **II. Transparency: Proof Positive in International Administrative Law**

One of the key advances of Professor Stewart's work on market-based environmental policy was his emphasis on transparency and its role as the cornerstone of effective enforcement. That emphasis, paired with his broad examination of the evolution of administrative law in the global context,<sup>36</sup> inspired practitioners to redouble their efforts to secure robust monitoring, reporting, and verification requirements in the international legal structures they developed, so that those in turn would provide solid foundations for strong domestic enforcement.

In "The Democratic Case," Professor Stewart put forward the thesis that successful market-based environmental laws rest on, and promote, transparency. He wrote, "The marketable permit system would also provide much stronger incentives for effective monitoring and enforcement. If polluters did not expect rigorous enforcement for the term of their permits, this fact would show up at the auction in dramatically lower bids: Why pay a lot for the right to pollute legally when one can pollute illegally without serious risk of detection? Under a marketable permit approach, this problem would be at the center of bureaucratic attention."<sup>37</sup> And he underscored the centrality of transparent reporting and monitoring not just for market-based policies, but for all environmental policies. In "Economic Incentives," he wrote, "Economic incentive systems ... depend on accurate government monitoring of the amount of pollution or risk produced. Critics of economic incentives have claimed that monitoring technologies and capacities are inadequate to prevent widespread cheating. They conclude that

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<sup>36</sup> Richard B. Stewart, "U.S. Administrative Law: A Model for Global Administrative Law," Public Law and Legal Theory Working Paper Series Working Paper No. 05-09, New York University Law School Global Administrative Law Series Institute for International Law and Justice (IILJ) Working Paper No. 2005/7 (2005), text available at <https://poseidon01.ssrn.com/delivery.php?ID=754103009004065112106093118029099111121055086045016032125102089098082075089114115076096031059124007061000029001115091121103037036037038041068008010097028036042090104002089027088094095083068125070031093074000113069121098107113069029065091&EXT=pdf> (hereinafter "Global Administrative Law")

<sup>37</sup> Democratic Case at 183 (footnotes omitted).

we should use technology-based regulation because compliance is much easier to monitor when plants install particular control technologies than when actual discharges must be measured. Existing monitoring capacities are indeed deficient in a number of areas. But they need to be upgraded regardless of whether we use technology-based regulatory standards or economic incentives to achieve environmental goals.”<sup>38</sup>

Professor Stewart realized that once pollution and compliance information became public, the desire of regulated entities to have a level playing field would transform those who comply with environmental law from reluctant agents to adjutants of enforcement – precisely because those who invest in compliance will not be competitively disadvantaged vis-à-vis those who hide their pollution and escape liability. He wrote, “permit holders may themselves support strong enforcement in order to ensure that cheating by others does not depreciate the value of the permit holders' investments.”<sup>39</sup>

Professor Stewart thus provided a foundation for academics and practitioners alike to press for recognition of transparent monitoring, reporting and verification (MRV) as part of the essential or minimum elements necessary for successful market-based environmental policy.<sup>40</sup> Professor Stewart recognized that transparency requirements exist in the context of the “general framework and boundary laws, such as antitrust law and the law of conflicts” that constitute the legal canvas on which market-based environmental policy may be painted.<sup>41</sup>

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<sup>38</sup> Controlling Environmental Risks through Economic Incentives at 166.

<sup>39</sup> Democratic Case at 183 (footnotes omitted).

<sup>40</sup> See N. Keohane et al, “Toward a Club of Carbon Markets,” *Climatic Change* 144, 81–95 (2017), <https://doi.org/10.1007/s10584-015-1506-z> <https://link.springer.com/article/10.1007/s10584-015-1506-z> (in *Climatic Change Special Issue on “Alternate Structures for Global Climate Action: Building Blocks Revisited”* (2017), Richard B. Stewart and Bryce Rudyk, eds.), and sources cited therein, including writings of Professors Richard Stewart and Jonathan Wiener as well as EDF’s Dr. Daniel J. Dudek.

<sup>41</sup> Reconstitutive Law at 88.

From the perspective of the practitioner, one crucial model demonstrating the power of this foundational framework can be found in the 1990 Amendments to the U.S. Clean Air Act, which, in establishing the Acid Rain Trading Program, require electricity companies not only to monitor their sulfur dioxide -and carbon dioxide – emissions continuously, but also to submit reports of these emissions to EPA.<sup>42</sup> The reporting requirement makes each report a federal record, ensuring that under the federal law criminalizing the submission of false statements, lying or cheating on these reports would be prosecutable at the federal level.<sup>43</sup> That innovative step took transparency and accountability to a new level that was, until its enactment, virtually unprecedented in environmental law. The Acid Rain Trading Program, designed on the economic principles laid out in “The Democratic Case,” was phenomenally successful in cutting emissions of sulfur dioxide far ahead of schedule and at a fraction of forecasted costs – and its mandatory reporting requirement for both SO<sub>2</sub> and CO<sub>2</sub> continues to provide transparency on a vitally important sector of U.S. emissions.

Another practical example is the greenhouse gas reporting requirement made possible by Public Law 110-161 (2008), which required that EPA develop a final rule that requires mandatory reporting of greenhouse gas emissions above appropriate thresholds in all sectors of the U.S. economy.<sup>44</sup> While it has not been possible to enact comprehensive climate change legislation in the United States in recent years, and much regulatory action has been rolled back, the greenhouse gas reporting rule remains intact, providing an important building block for future action to cut emissions.

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<sup>42</sup> See Section 412, U.S. Clean Air Act Amendments (Acid Deposition) (1990), text available at [https://www.epa.gov/sites/production/files/2015-06/documents/title\\_iv\\_-\\_acid\\_deposition\\_control.pdf](https://www.epa.gov/sites/production/files/2015-06/documents/title_iv_-_acid_deposition_control.pdf)

<sup>43</sup> 18 U.S. Code § 1001.

<sup>44</sup> H.R.2764 - Consolidated Appropriations Act, 2008, enacted as Public Law 110-161 (2008), text available at <https://www.congress.gov/bill/110th-congress/house-bill/2764>

A further practical example of the influence of Professor Stewart’s framework comes from the international effort to cap and reduce carbon dioxide emissions of flights between countries. These, along with international maritime emissions, are not included in most countries’ Nationally Determined Contributions (NDCs) under the Paris Agreement.<sup>45</sup> In 2016, ICAO adopted the Carbon Offsetting and Reduction Scheme for International Aviation (CORSA), which nominally capped the net CO<sub>2</sub> emissions of flights between participating countries at the average of 2019-2020 levels for the years 2021-2035, and authorized airlines to meet their caps by reducing their emissions directly or by purchasing and retiring approved carbon offsets.<sup>46</sup> A standard-setting process in ICAO resulted in agreed Standards and Recommended Practices (SARPs) establishing criteria that emissions credit programs and emissions units must meet, including avoiding double-claiming of the reductions against Paris Agreement obligations.

Worried that the notoriously secretive ICAO would approve carbon credit programs through backroom deals that would undermine ICAO’s legitimacy and impair public confidence in the integrity of the credits,<sup>47</sup> and drawing on Professor Stewart’s writings on global

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<sup>45</sup> There is no basis in the Paris Agreement to exclude these international emissions from NDCs. See Committee on Climate Change, “[Policies for the Sixth Carbon Budget and Net Zero](https://www.theccc.org.uk/wp-content/uploads/2020/12/Policies-for-the-Sixth-Carbon-Budget-and-Net-Zero.pdf) (Committee on Climate Change, December 2020), at Table 1.1, page 21. <https://www.theccc.org.uk/wp-content/uploads/2020/12/Policies-for-the-Sixth-Carbon-Budget-and-Net-Zero.pdf> (calling on the UK to include international aviation emissions in its Sixth Carbon Budget).

<sup>46</sup> See ICAO Assembly Resolutions 39-3 (2016) and 40-19 (2019). The resolutions provide, inter alia, that ICAO shall develop a methodology by which airlines may reduce the amount of offsets they must retire by using sustainable aviation fuels that, on a lifecycle basis, emit less than conventional jet fuel. ICAO adopted the agreement nearly two full decades after the UNFCCC Conference of the Parties, unable to reach agreement on how to attribute these “international bunker” emissions to countries, formally agreed that governments should address them in the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO), respectively. See Kyoto Protocol at Article 2.2.

<sup>47</sup> “We don’t want ICAO to become the FIFA of carbon markets,” referring to the football governing body’s record of corruption. “UN aviation body agrees to close carbon emissions loophole,” Climate Home News 06/03/2019, <https://www.climatechangenews.com/2019/03/06/un-aviation-body-agrees-close-carbon-emissions-loophole/>

administrative law,<sup>48</sup> practitioners serving as experts on ICAO's Committee on Aviation Environmental Protection (CAEP)<sup>49</sup> pressed ICAO to boost the program's transparency. Specifically, practitioners advocated for the adoption of procedural rules that would provide public notice of an open application process for carbon credit programs to apply to ICAO for CORSIA eligibility; ensure public announcement of the membership of the Technical Advisory Body (TAB) convened by ICAO to review the applications and make recommendations to the ICAO Governing Council of 36 Member State representatives; require public posting of the applications (with provision for exclusion of business-confidential information); invite public comment on the applications; ensure that the public comments are provided to the TAB; provide for publication of the TAB's recommendations to the Council; provide that both the TAB's and Council's actions be based on the application and comment materials received; and open sessions of the TAB and Council to the public.

Remarkably, most of these, patterned closely on core principles of administrative law, were essentially novel for ICAO. And also somewhat remarkably, ICAO adopted most of the recommendations (but not all),<sup>50</sup> and its Technical Advisory Body published not only its

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<sup>48</sup> See, e.g., Benedict Kingsbury and Richard B. Stewart, "Legitimacy and Accountability in Global Regulatory Governance: The Emerging Global Administrative Law and the Design and Operation of Administrative Tribunals of International Organizations," Chapter in *International Administrative Tribunals in a Changing World* (Papanikolaou ed. 2008), <https://www.iilj.org/publications/legitimacy-and-accountability-in-global-regulatory-governance-the-emerging-global-administrative-law-and-the-design-and-operation-of-administrative-tribunals-of-international-organizations/>. See also Richard Stewart, "The Global Regulatory Challenge to U.S. Administrative Law," 37 *N.Y.U. J. Int'l L. & Pol.* 695 (2006); "Foreword: Global Governance as Administration—National and Transnational Approaches to Global Administrative Law," 68 *Law & Contemp. Probs.*, no. 3 & 4, 2005, at 1 (Richard Stewart, Benedict Kingsbury, Nico Krisch and Jonathan B. Wiener); "The Emergence of Global Administrative Law," 68 *Law & Contemp. Probs.*, no. 3 & 4, 2005, at 15 (Richard Stewart, Benedict Kingsbury & Nico Krisch); and "U.S. Administrative Law: A Model for Global Administrative Law?," 68 *Law & Contemp. Probs.*, no. 3 & 4, 2005, at 63

<sup>49</sup> The author participated as an expert observer in the work of the CAEP developing CORSIA. See generally Climate Advisers, EDF, IETA, The Nature Conservancy, "Ensuring Transparency in CORSIA" (2017), <https://www.edf.org/sites/default/files/Ensuring-Transparency-in-CORSIA.pdf>

<sup>50</sup> See ICAO Web Pages <https://www.icao.int/environmental-protection/CORSIA/Pages/TAB2019.aspx> and <https://www.icao.int/environmental-protection/CORSIA/Pages/TAB.aspx>

membership, but also its procedural rules.<sup>51</sup> It did not, however, adopt a requirement that its recommendations and decisions be based on the available evidence in the record. Nonetheless, the resulting package, while not perfect, draws directly on Professor Stewart's work on the development of global administrative law, and can serve as a model for other international institutions.

### **III. Concluding Remarks: A personal look-back and look-ahead**

As a practitioner, my introduction to Professor Stewart's work came at a pivotal time in my career. I had just moved to East Africa to work in the United Nations Environment Programme's environmental law unit, in the mid-1980s. My first experience living in a developing country brought me face to face with levels of poverty I had never seen before. I saw incredibly entrepreneurial people - every village, no matter how small, seemed to have some form of market, which might just be a clearing under a baobab tree, but a place where families who could afford to raise chickens traded eggs with other families who grew sukuma (collard greens) for "sukuma wiki".<sup>52</sup> I also saw, first-hand, how rural poverty was exacerbated by lack of access to even tiny amounts of capital with which to finance basic health and productivity advances. When UNEP began to tackle to global warming in the late 1980s, I became convinced that multilateral approaches to the issue could only succeed if the structure of agreements aligned industrialized countries' concern for the time-distant consequences of greenhouse gas pollution with developing countries' concern for near-term economic growth. And I worried that the complexities of climate science and the pressure for strict regulation mediated through the then-

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<sup>51</sup> [https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/TAB%202020/TAB%20Procedures\\_April%202020\\_Final.pdf](https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/TAB%202020/TAB%20Procedures_April%202020_Final.pdf)

<sup>52</sup> Sukuma wiki, meaning in Swahili "push the week," is a dish made of collard greens. Because the greens are cheap, poor families whose wage earners were paid weekly would prepare sukuma wiki toward the end of the week when money was short.

prevailing policy orthodoxy of “best available control technology” would inadvertently freeze technology innovation and spawn policy proposals so arcane that politicians would find it impossible to grasp them, let alone adopt them.

So I began looking for ways to connect the baobab tree with the giant engines of global markets, to hitch the human desire for economic development to a legal framework that would drive investment in climate protection. But sitting at my small desk in Africa with my first-ever tiny word-processor pecking away at this concept was a lonely task. There was no one to talk with about the big questions – like transparency, enforcement, equity. Then I stumbled on a dog-eared photocopy of Professor Stewart’s “The Democratic Case.”<sup>53</sup> It was amazing. It put everything together – all the strands I’d been struggling to find, and so, so, much more. “Can markets be designated in ways which enhance, rather than undermine, the reality of democratic self-rule?”, Professor Stewart asked. “This is the question that should dominate the agenda for the reform of environmental law.” He asserted that it is not necessary for environmental law to choose between democracy and efficiency. And he brought empirical research to the fore to demonstrate that “the creative use of market incentives [could] not only save billions of dollars each year,” but also “vastly improve the quality of democratic debate about environmental values, allowing a wider public to address basic issues that the present regulatory system obscures under a flood of technocratic mumbo-jumbo.” It made so much sense, and it was so inspiring.

I cobbled together a paper proposing a system of marketable greenhouse gas emission rights and credits, traded through an international emissions credit bank, that could provide a

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<sup>53</sup> R.B. Stewart and B.A. Ackerman, “Reforming Environmental Law: The Democratic Case for Market Incentives,” 13 *Colum. J. Envtl. L.* 171 (1987), [https://digitalcommons.law.yale.edu/fss\\_papers/141/](https://digitalcommons.law.yale.edu/fss_papers/141/) While I had played squash with Prof. Stewart in law school, I had not taken a course from him and didn’t know his scholarship.

flexible and monitorable global system of economic incentives for controlling a range of greenhouse gas emissions. The paid-in capital of the bank could come from the purchase of emissions allowances by large industrial companies. A village in a developing country could borrow money from the local branch of this emissions credit bank to purchase fuel-efficient cookstoves, so the villagers would need to chop down fewer trees for charcoal, and so they could breathe cleaner air in their homes. If the cookstove program were successful, the village would earn emissions credits that the bank could sell on the world market – for example, to a power company – and the proceeds would pay off the villagers' cookstove loan, with any remaining profits going directly to the villagers.<sup>54</sup>

As I was finishing the paper, family matters called me back to the States. A series of fortuitous coincidences and wise suggestions from valued colleagues<sup>55</sup> brought me, with the galley proofs of the paper tucked under my arm, to a chance meeting in Washington, D.C. with the Attorney General of the Land and Natural Resources Division of the U.S. Department of Justice: Professor Stewart. And that opened, for me, the opportunity of a lifetime.

Through the ensuing three decades of design work on the Kyoto Protocol, the Paris Agreement, CORSIA, national and regional cap and trade systems around the world, and regional and global trade pacts, those of us who've had the good fortune to be inspired by Professor Stewart's work<sup>56</sup> have strived to put into practice the principles he advanced and

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<sup>54</sup> Petsonk, The Role of the United Nations Environment Programme (UNEP) in the Development of International Environmental Law," 5 Am U J Intl Law and Pol 351 (1990),

<http://digitalcommons.wcl.american.edu/cgi/viewcontent.cgi?article=1585&context=auilr>

<sup>55</sup> Special thanks to Durwood Zaelke, Anne Shields, and Jonathan Wiener.

<sup>56</sup> See, e.g., Richard B. Stewart, "The Clean Development Mechanism : building international public-private partnerships under the Kyoto Protocol : technical, financial and institutional issues," UN Conference on Trade and Development (UNCTAD, 2000), <https://digitallibrary.un.org/record/428162?ln=en> ; Richard B. Stewart & Jonathan B. Wiener, *Reconstructing Climate Policy: Beyond Kyoto* (American Enterprise Institute Press, 2003), [https://scholarship.law.duke.edu/faculty\\_scholarship/2851](https://scholarship.law.duke.edu/faculty_scholarship/2851); Richard B. Stewart, Michael Oppenheimer & Bryce Rudyk, "Building Blocks for Global Climate Protection," 32 Stanford Environmental Law Review 341 (2003), <https://law.stanford.edu/wp-content/uploads/2018/05/stewart.pdf>; Richard B. Stewart, Michael Oppenheimer &

continues to advance. The recognition that it's human nature to want and work to achieve a better life for one's family. The understanding that the engines of markets can and must be tapped in favor of effective environmental protection, competition to spur innovation and grind down costs, furthering equality and combatting discrimination, and securing the transparency that not only underpins fair enforcement, but supports the foundations of democracy. Professor Stewart has powerfully and durably made the case and mapped out the tools. For us practitioners, this celebration of his work is and must remain our call to action.

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Bryce Rudyk, "Building blocks: a strategy for near-term action within the new global climate framework," *Climatic Change* volume 144, pages1–13 (2017), <https://link.springer.com/article/10.1007/s10584-017-1932-1>.