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January 8, 2013

Localizing Climate Change Law

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Localizing Climate Change Action - *abstract*

Myanna Dellinger

Waiting for national- or supranational-level actors to take substantively effective action against climate change is like waiting for Godot: unlikely to happen, at least at a substantively early enough point in time. The December 2012 negotiations under the UNFCCC umbrella yet again demonstrated the failure of action at the international level. This article adds new value to existing scholarship by conducting original research into select climate initiatives at the subnational, substate level in order to find out whether it is worth pursuing climate change action at this level instead. The article posits that in times with little or severely delayed climate change action by national and supranational actors, it is worth pursuing climate change action at the local - but not the purely private – level.

After identifying what “success” means in the climate change arena, the article analyzes the potential for both substantive *and* procedural success presented by select local initiatives. Some of these feature traditional adversarial enforcement methods, some modern collaborative-style enforcement, some no enforcement at all, and one is a reporting program with mandatory implications. The article demonstrates how action at the scaled-down level can be effective whether traditional adversarial or more collaborative goal enforcement methods are applied, and perhaps even if no enforcement methods are applied at all.

The article builds on the author’s parallel project, *An Unstoppable Tide: Creating Environmental and Human Rights Law from the Bottom Up*.¹ This analyzed bottom-up, polycentric developments within national and international environmental and human rights law in general. It argued that bottom-up, polycentric action presents viable alternatives to traditional top-down action within these areas. It presented a set of guidelines for the development and enforcement of law in that applies to action within climate change as well and thus to the enclosed article (16,000 words).

¹ Forthcoming in ___ Oregon Review of International Law ___ (2013).

Localizing Climate Change Action

Myanna Dellinger

Everybody talks about the weather, but nobody does anything about it²

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² Quote is commonly attributed to both author Mark Twain and Charles Dudley Warner, editor, The Hartford Courant.

I. Introduction

Fortunately, the above saying is no longer true. Some attempts have been and are made around the world to curb climate change. Unfortunately, these have produced very few actual, promising results so far. Numerous scholarly articles have been written lamenting the lack of effective action at, in particular, the state, national or supranational level and discussing the need for local action instead. This article builds on such scholarship, but adds new value by conducting original research into select climate initiatives at the subnational, substate level in order to analyze whether it is worth pursuing climate change action at this scale at all. To do so, the article analyzes the particular factors that are considered to make environmental law initiatives successful as well as risk factors of which law- and policymakers should be aware. The article is among the first to set forth a framework of reference for analyzing what “success” means in the environmental law context with a particular focus on climate change and to apply this framework to the analysis of programs to analyze whether they may be considered effective. Since this appears to be the case in general, the article posits that in times with little or delayed climate change action by national and supranational actors, it is worth pursuing climate change action at the local - but not the purely private – level. Further, the article shows how action at the scaled-down level can be effective whether traditional adversarial or more collaborative goal enforcement methods are applied, or perhaps even where no enforcement methods are applied at all.

The article builds on the author’s parallel project, *An Unstoppable Tide: Creating Environmental and Human Rights Law from the Bottom Up*.³ This analyzes bottom-up, polycentric developments within national and international environmental and human rights law. It posited that such action presents viable alternatives to traditional top-down action and described why. The article presented new value in the form of a set of guidelines from the human rights and environmental law arenas that can be applied to future developments of new law in both those, but also in broader or narrower segments of modern law such as climate change action. As described in the author’s parallel article, clear parallels between human rights and climate change exist. For example, severe weather caused by climate change may affect our health and ultimately our lives, thus impacting the human rights to health and life. Our property rights may be at peril because of climate change as well. In 2008, the U.N. Human Rights Council officially recognized the fact that “climate change poses an immediate and far-reaching threat to people and communities around the world and has implications for the full enjoyment of human rights.”⁴ Accordingly, the principles for law creation, observance, and enforcement produced in the parallel article apply to the present article. So do the guidelines set forth in that article for effective law creation at the scaled-down and potentially non-governmental level.

While we discuss what to do and how best to do it, the climate situation keeps getting more and more dire. We already let several precious years go by without any

³ Forthcoming in __ Oregon Review of International Law __ (2013).

⁴ Office of the High Commission for Human Rights, U.N. Human Rights Council, 7th Sess., U.N. Doc. A/HRC/7/L.21/Rev.1 (Mar. 26, 2008), available at <http://ap.ohchr.org/documents/E/HRC/resolutions/A/HRC/7/L.21/Rev.1.doc>.

real progress in the area. The severity of this will be set forth next by way of factual background.

II. The Current State of Affairs

This article takes the starting point that climate change exists, is manmade, and needs to be addressed effectively *now* – within a few years at the most - in order to avoid severe planetary effects. The article will thus not re-discuss that body of knowledge other than providing the following update of the state of scientific, economic, and legal affairs to demonstrate the by now extreme urgency of the problem.

A. The science

In May 2012, the National Oceanic and Atmospheric Administration's ("NOAA") National Climatic Data Center released a report showing that the average temperature in the United States between March and May was 57.1 degrees; 5.2 degrees above the long-term average from 1901 to 2000.⁵ Before May 2012, the United States experienced twelve consecutive months with temperatures in the top third for monthly average temperatures.⁶ The odds of that happening randomly are one in 540,000.⁷ Globally, the average April 2012 temperature was 1.17 degree warmer than the average from the past century.⁸ That was the 326th consecutive month that global temperatures exceeded the 20th century average.⁹ The odds of that happening by simple chance are 3.7×10^{-99} ; a number "considerably larger than the number of stars in the universe."¹⁰ NASA scientist James Hansen, the "Godfather of Global Warming," states that the likelihood of temperatures similar to the global heat waves of recent years was rarer than one in 300 from the 1950s through the 1980s.¹¹ Now, the odds are closer to 1 in 10.¹² "[S]tatistically, what's happening is not random or normal, but pure and simple climate

⁵ Michael Pearson & Phil Gast, *More Record Warmth as Scientists Warn of Global Tipping Point*, http://articles.cnn.com/2012-06-08/us/us_record-warmth_1_climate-change-noaa-nature-article?_s=PM:US.

⁶ Michael Pearson & Phil Gast, *More Record Warmth as Scientists Warn of Global Tipping Point*, http://articles.cnn.com/2012-06-08/us/us_record-warmth_1_climate-change-noaa-nature-article?_s=PM:US.

⁷ Michael Pearson & Phil Gast, *More Record Warmth as Scientists Warn of Global Tipping Point*, http://articles.cnn.com/2012-06-08/us/us_record-warmth_1_climate-change-noaa-nature-article?_s=PM:US.

⁸ Michael Pearson & Phil Gast, *More Record Warmth as Scientists Warn of Global Tipping Point*, http://articles.cnn.com/2012-06-08/us/us_record-warmth_1_climate-change-noaa-nature-article?_s=PM:US.

⁹ Michael Pearson & Phil Gast, *More Record Warmth as Scientists Warn of Global Tipping Point*, http://articles.cnn.com/2012-06-08/us/us_record-warmth_1_climate-change-noaa-nature-article?_s=PM:US.

¹⁰ Bill McKibben, *Global Warming's Terrifying New Math*, *The Rolling Stone*, August 2, 2012.

¹¹ Doyle Rice, *New Study Links Heat Waves to Climate Change*, <http://www.usatoday.com/weather/climate/globalwarming/story/2012-08-04/heat-waves-climate-change-james-hansen/56794570/1>.

¹² Doyle Rice, *New Study Links Heat Waves to Climate Change*, <http://www.usatoday.com/weather/climate/globalwarming/story/2012-08-04/heat-waves-climate-change-james-hansen/56794570/1>.

change.”¹³ The United States Supreme Court and at least two United States Courts of Appeals have taken note of this.¹⁴

What must be done about this problem? The 2007 IPCC Synthesis Report stated that to keep the global average temperature increase from pre-industrial levels within 2-2.4° Celsius, CO₂ emissions must be reduced by 50-85% over 2000 levels by 2050 and peak by 2015.¹⁵ “167 countries responsible for more than 87% of the world’s carbon emissions signed on to the Copenhagen Accord, endorsing the two degree target,” which is just about “the only thing about climate change that the world has settled on.”¹⁶ The 2012 Doha agreement reached under the auspices of the United Nations Framework Conference for Climate Change (“UNFCCC”) reaffirmed the two degree target.¹⁷ But it is looking more and more unlikely that goal can be met. For example, the concentration of carbon dioxide in the atmosphere has, according to a 2012 UN report, jumped 20% since 2000.¹⁸ An 80% reduction by 2050 would mean that an individual would have to have a footprint of no more than 1.1 metric tonnes of CO₂ from their direct energy use.¹⁹ In comparison, individuals in the United States consumed 18 tonnes of CO₂ per person in 2008.²⁰ In total amounts, one calculation shows that global anthropogenic emissions

¹³ Doyle Rice, *New Study Links Heat Waves to Climate Change*, <http://www.usatoday.com/weather/climate/globalwarming/story/2012-08-04/heat-waves-climate-change-james-hansen/56794570/1>.

¹⁴ See, e.g., *Massachusetts v. EPA*, 549 U.S. 497, 505, 534 (2007) (noting that in recent decades, “[a] well-documented rise in global temperatures has coincided with a significant increase in the concentration of [greenhouse gases] in the atmosphere” and relying on the EPA’s Endangerment Finding that greenhouse gases contribute to the total greenhouse gas air pollution, and thus to the climate change problem, which is reasonably anticipated to endanger public health and welfare.”); *Coalition for Responsible Regulation v. EPA*, No 09-1322 (D.C. Circuit) (2012) (similarly relying on the EPA’s “substantial scientific evidence” showing that “anthropogenically induced climate change threatens both public health and public welfare” (p. 29) and commenting that “[t]his is how science works. EPA is not required to re-prove the existence of the atom every time it approaches a scientific question.” (p. 27)); *Native Village of Kivalina v. ExxonMobil*, 2012 WL 4215921 at *6 (referring to the “dire circumstance” in which the village of Kivalina finds itself because of the rising sea level caused by climate change, but relying on *Connecticut v. Am. Elec. Power Co.*, 131 S.Ct. 2527 (2011) in holding that relief must come from the legislative and executive branches of the government, not the courts via federal common law nuisance claims).

¹⁵ http://www.ipcc.ch/publications_and_data/ar4/syr/en/spms5.html. In 2011, the chief economist for the International Energy Agency projected that current global energy consumption levels put the Earth on a trajectory to warm by 6 degrees Celsius above pre-industrial levels by 2100, an outcome he called “a catastrophe for all of us.” http://www.washingtonpost.com/national/health-science/world-on-track-for-nearly-1-1-degree-temperature-rise-energy-expert-says/2011/11/28/gIQAi0IM6N_story.html; http://unfccc.int/files/press/statements/application/pdf/20121021_precop_rok.pdf (mentioning the “2 degree” goal).

¹⁶ Bill McKibben, *Global Warming’s Terrifying New Math*, *The Rolling Stone*, August 2, 2012.

¹⁷ UN News Centre, *Ban Welcomes Outcome of UN Climate Change Talks in Doha*, December 8, 2012, available at <http://www.un.org/apps/news/story.asp?NewsID=43716#.UMjE1454VW4>.

¹⁸ Karl Ritter, *2012 UN Climate Talks in Doha, Qatar Face Multiple Challenges*, *HuffPost Green*, November 25, 2012, available at http://www.huffingtonpost.com/2012/11/25/2012-un-climate-talks-qatar_n_2188048.html.

¹⁹ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy* 19, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

²⁰ <http://data.worldbank.org/indicator/EN.ATM.CO2E.PC>. This figure reflects the burning of fossil fuels and manufacture of cement.

must be reduced to approximately 44 metric GtCO₂e by 2020 to stay within the 2° goal.²¹ However, at the end of 2009, total global greenhouse gas (GHG) emissions amounted to 49.5 GtCO₂e.²² The emissions gap between what is necessary to avoid catastrophic climate change and projected emissions continues to *widen* instead of narrowing.²³ It may thus already have become unrealistic to strive for “only” a 2° Celsius limit. Indeed, a recent World Bank projection showed that temperatures are more likely to increase up to 4° Celsius by the end of this century over pre-industrial times, thus overshooting the target on which most UN talks have been based so far.²⁴ The chief economist of the International Energy Agency cites to evidence showing that temperatures are likely to rise by 6 degrees, “which would create a planet straight out of science fiction.”²⁵ In fact, temperatures have already risen by almost 0.8° Celsius and, because of previously released carbon is likely to rise another 0.8 degrees, the world is already three-quarters of the way to the “bottomest of bottom lines” two-degree target.²⁶ The world can afford to add only approximately “565 more gigatons of carbon dioxide to the atmosphere by midcentury and still have some reasonable hope of staying below two degrees. [R]easonable, in this case, means four chances in five, or somewhat worse odds than playing Russian roulette with a six-shooter.”²⁷

B. The economy

The above paints a very bleak picture of the state of affairs and the uphill battle to be fought. Perhaps it is already too late to realistically hope for effective mitigation of the problem. Perhaps adaptation is the best we can do at this point in time. However, the problem is too severe to simply give up even trying. Further, relatively sudden and effective turn-arounds of severe scientific and moral problems of international importance have been seen before. For example, extensive campaigning in the 1980s demanded and obtained financial divestment from companies doing business in South Africa because of the apartheid problem.²⁸ Currently, campaigns against sweat shops and child labor appear to add leverage against companies acquiring products produced in morally reprehensible ways. The ozone layer problem was virtually resolved by the Montreal Protocol in a relatively short amount of time. However, one major difference between the ozone depletion problem and climate change is that with the ozone problem, President Reagan embraced aggressive action at an early point in time to solve the problem because of a belief in the cost-benefit analysis which, at bottom, made action cheaper than inaction and thus created strong impetus for the United States to sign on to

²¹ The United Nations Environment Programme *Bridging the Gap* 9, 15 (2011). http://www.unep.org/pdf/UNEP_bridging_gap.pdf.

²² The United Nations Environment Programme *Bridging the Gap* 9, 15 (2011). http://www.unep.org/pdf/UNEP_bridging_gap.pdf.

²³ Wynne Parry, *UNEP Greenhouse Gas Emissions Report Finds Climate Change Goals Growing More Elusive*, HuffPost Green, November 24, 2012, available at http://www.huffingtonpost.com/2012/11/23/unep-greenhouse-gas-emissions_n_2179270.html.

²⁴ Karl Ritter, *2012 UN Climate Talks in Doha, Qatar Face Multiple Challenges*, HuffPost Green, November 25, 2012, available at http://www.huffingtonpost.com/2012/11/25/2012-un-climate-talks-qatar_n_2188048.html.

²⁵ Bill McKibben, *Global Warming's Terrifying New Math*, The Rolling Stone, August 2, 2012.

²⁶ Bill McKibben, *Global Warming's Terrifying New Math*, The Rolling Stone, August 2, 2012.

²⁷ Bill McKibben, *Global Warming's Terrifying New Math*, The Rolling Stone, August 2, 2012.

²⁸ Bill McKibben, *Global Warming's Terrifying New Math*, The Rolling Stone, August 2, 2012.

binding action.²⁹ The financial advantages of taking action against climate change have not yet become persuasive at least in the United States, although one can hope that this will change with more awareness of the financial benefits of taking action. For example, the size of the “climate economy” is estimated to be \$2.2 trillion by 2020.³⁰ Other countries are taking note of this: China’s budget for energy conservation and anti-pollution measures over the next few years is \$372 billion.³¹ In contrast, the global clean energy investment in 2011 was \$260 billion.³² Saudia Arabia is planning to invest \$109 billion in its solar industry over the next twenty years.³³ Frequently cloudy German has through early and focused investments become the world leader in solar power whereas most parts of sunny America are only now rolling out solar programs, but arguably still only at a negligible scale given the abundance of the natural resource.

A very significant obstacle to climate change solutions is precisely the carbon economy and the companies, even nations, who are heavily invested in this. Whereas we can add only 565 gigatons of fossil fuels to stay within the world recognized two-degrees goal, the carbon contained in the coal, oil and gas reserves of the fossil-fuel companies and the countries that act as such (think Venezuela and Kuwait) amounts to 2,795; five times more than the “safe” limit.³⁴ Those reserves are the primary assets worth approximately \$27 trillion of such companies as ExxonMobile, BP, Gazprom, Chevron, ConocoPhillips, and Shell.³⁵ “Taken together, just these six firms . . . would use up more than a quarter of the remaining two-degree budget.”³⁶ These companies are obviously not going to give up on such a lucrative assets and further opportunities for growth in their fields, quite the opposite: In March 2012, “Exxon CEO Rex Tillerson told Wall Street journalists that the company plans to spend \$37 billion a year through 2016 (about \$100 million a day) searching for yet more oil and gas . . . this industry alone holds the power to change the physics and the chemistry of our planet, and they’re planning to use it.”³⁷ As for the advice by the business sector in general as to what to do “if” scientists turn out to be correct, the position of the U.S. Chamber of Commerce is simply that “populations can acclimatize to warmer climates via a range of behavioral, physiological and technological adaptations.”³⁸ Extreme indeed, and a problem which clearly to be addressed somehow whether through legislative action, hopeless as it may seem currently given the sheer strength of the carbon industry, or through investor-driven and other action.

²⁹ Andrew Winston, *The Challenge of Climate Math*, The Huffington Post, November 28, 2012, available at http://www.huffingtonpost.com/andrew-winston/the-challenge-of-climate-_b_2189004.html.

³⁰ Andrew Winston, *The Challenge of Climate Math*, The Huffington Post, November 28, 2012, available at http://www.huffingtonpost.com/andrew-winston/the-challenge-of-climate-_b_2189004.html.

³¹ Andrew Winston, *The Challenge of Climate Math*, The Huffington Post, November 28, 2012, available at http://www.huffingtonpost.com/andrew-winston/the-challenge-of-climate-_b_2189004.html.

³² Andrew Winston, *The Challenge of Climate Math*, The Huffington Post, November 28, 2012, available at http://www.huffingtonpost.com/andrew-winston/the-challenge-of-climate-_b_2189004.html.

³³ ³³ Andrew Winston, *The Challenge of Climate Math*, The Huffington Post, November 28, 2012, available at http://www.huffingtonpost.com/andrew-winston/the-challenge-of-climate-_b_2189004.html.

³⁴ Bill McKibben, *Global Warming’s Terrifying New Math*, The Rolling Stone, August 2, 2012.

³⁵ Bill McKibben, *Global Warming’s Terrifying New Math*, The Rolling Stone, August 2, 2012.

³⁶ Bill McKibben, *Global Warming’s Terrifying New Math*, The Rolling Stone, August 2, 2012.

³⁷ Bill McKibben, *Global Warming’s Terrifying New Math*, The Rolling Stone, August 2, 2012.

³⁸ Bill McKibben, *Global Warming’s Terrifying New Math*, The Rolling Stone, August 2, 2012.

C. The lacking political and legal action

Although time is running out quickly, there is still a very small window of time in which to act to attempt to avoid at least the very worst effects of climate change. However, taking beneficial advantage of this will require swift and decisive action by a multitude of actors around the world at multiple scales. Until recently, focus was largely on national and multinational actors who were largely perceived to be “the only game in town.”³⁹ The problem with climate change at that scale is, however, is the continued lack of effective, promising action. The Kyoto Protocol only called for an average of approximately 5% GHG reductions by Annex I nations under the first commitment period;⁴⁰ not nearly enough to effectively stem climate change according to current data.

And although the Kyoto Protocol was extended from 2012 to 2020 at the 2012 COP 18 in Doha,⁴¹ only 37 out of the 195 parties to the UNFCCC now have legally binding emission limitation and reduction commitments representing just 12% of global emissions.⁴² The Kyoto Protocol now mainly applies to the European Union, Australia, and a few other countries who can choose their own emission targets.⁴³ Previous industrialized signatories Japan, Russia, and Canada did not sign on to the extension.⁴⁴ The USA never participated.⁴⁵ Cautious hopes before Doha had been for a new strengthened and legally binding agreement that would also apply to developing countries such as China and India, the world’s top and third carbon emitters. But at a time when the Kyoto Protocol should have been strengthened, it was left significantly weakened, although officially still alive.⁴⁶ And although a “rough work plan” attempts to pave the way for a comprehensive, legally binding agreement by 2015, it would only take effect in 2020,⁴⁷ years after carbon emissions should *already* have peaked. After the Copenhagen, Durban and Doha UNFCCC negotiations, there is thus – for good reason - wide and deep

³⁹ Thomas Gremillion, *Setting the Foundation: Climate Change Adaptation at the Local Level*, 41 *Envtl. L.* 1229 (2011).

⁴⁰ Kyoto Protocol, Article 3.

⁴¹ UN News Centre, *Ban Welcomes Outcome of UN Climate Change Talks in Doha*, December 8, 2012, available at <http://www.un.org/apps/news/story.asp?NewsID=43716#.UMjE1454VW4>; http://unfccc.int/files/meetings/doha_nov_2012/decisions/application/pdf/cop18_agreed_outcome.pdf (check).

⁴² UN News Centre, *Ban Welcomes Outcome of UN Climate Change Talks in Doha*, December 8, 2012, available at <http://www.un.org/apps/news/story.asp?NewsID=43716#.UMjE1454VW4>.

⁴³ Tom Arup, *Doha Climate Change Talks Delivered Little*, *The Sydney Morning Herald*, December 11, 2012, available at <http://www.smh.com.au/environment/doha-climate-change-talks-delivered-little-20121210-2b5oj.html>.

⁴⁴ Tom Arup, *Doha Climate Change Talks Delivered Little*, *The Sydney Morning Herald*, December 11, 2012, available at <http://www.smh.com.au/environment/doha-climate-change-talks-delivered-little-20121210-2b5oj.html>.

⁴⁵ The USA withdrew entirely from the Kyoto process in 2001 because, among other reasons, the Protocol was not to cover rapidly industrializing and heavily emitting nations such as China and India. Cite needed?

⁴⁶ Stephen Leahy, *Doha Climate Summit Ends with No New CO2 Cuts or Funding*, December 10, 2012, available at <http://truth-out.org/news/item/13254-doha-climate-summit-ends-with-no-new-co2-cuts-or-funding>.

⁴⁷ Tom Arup, *Doha Climate Change Talks Delivered Little*, *The Sydney Morning Herald*, December 11, 2012, available at <http://www.smh.com.au/environment/doha-climate-change-talks-delivered-little-20121210-2b5oj.html>.

skepticism regarding the efficacy of large-scale international solutions to be implemented through national actors.

At the regional level, the EU has adopted relatively far-reaching climate change reduction commitments – 20% emissions reductions by 2020⁴⁸ - but has admitted that because the EU is a relatively small group of emitters covering at the very most 14% of global emissions, it is not by itself going to make a significant difference in the fight against climate change.⁴⁹ As for the largest emitters, the USA has only pledged to reduce its emissions by 17% below 2005 levels,⁵⁰ but has never adopted any legally binding agreement at a national level. Further, the USA stated early on in the Doha negotiations that it would *not* increase its 17%-by-2020 target because “the scale and extent of [that] effort . . . is enormous.”⁵¹ Similarly, the US EPA has only recently begun developing standards for greenhouse gas (GHG) emissions from stationary and mobile sources which will have some positive effect, but likely not soon enough. China and India are still claiming a right to emit a significant amount of total, although not per capita, amounts of GHGs in order to develop and modernize. Finger-pointing, passing the hot potato, and procrastination are still the name of the game at the national and supranational levels and may still be so for some time to come; time that just is not available if we want to avoid what experts fear will be extreme results. There is thus broad agreement among legal scholars that the international treaty regime and national action is currently not leading to effective change within climate change.

Since the national and international climate change regimes are at least temporarily, and perhaps permanently, dysfunctional, there is a clear need for action by lower-level structures. The good news is that whereas possible solutions at the scaled-up level would add to the picture, they are no longer considered “the only game in town.” In fact, quite far from it. A rapidly growing body of scholarship points to the emergence of a range of sub-state actors who are developing their own initiatives and approaches to climate change action.⁵² In one study, for example, more sub-states than actual states were taking climate change initiatives: out of 58 experiments, only 9 were nation states.⁵³ Localized action is thus overtaking the importance of national and supranational climate change law. The next section will analyze some such drivers of action.

⁴⁸ European Commission, *What is the EU Doing about Climate Change?*, available at http://ec.europa.eu/clima/policies/brief/eu/index_en.htm.

⁴⁹ Karl Ritter, *2012 UN Climate Talks in Doha, Qatar Face Multiple Challenges*, HuffPost Green, November 25, 2012, available at http://www.huffingtonpost.com/2012/11/25/2012-un-climate-talks-qatar_n_2188048.html.

⁵⁰ Karl Ritter, *UN Climate Boss: No Support for Tough Climate Deal*, AP, November 30, 2012, available at <http://news.yahoo.com/un-climate-boss-no-support-tough-climate-deal-123816100.html>.

⁵¹ AP, *US Defends “Enormous” Climate Efforts at UN Talks*, November 26, 2012, available at http://www.cbsnews.com/8301-205_162-57554338/u.s-defends-enormous-climate-efforts-at-u.n-talks/

⁵² Heike Schroeder & Harriet Bulkeley, *Global Cities and the Governance of Climate Change: What is the Role of Law in Cities?*, 36 *Fordham Urb. L.J.* 313, 315 (2009).

⁵³ Matthew J. Hoffman, *Experimenting with a Global Response after Kyoto* 30-31 (2011).

III. Local Climate Change Experiments

New actors at both the local government and non-governmental levels are surfacing and becoming the focus of attention in the climate change field. Because of the established lack of effective action by traditional actors, it is worth examining these non-traditional actors to examine whether they can be considered to be able to produce viable alternatives to more traditional action or whether they just add to an already increasingly fragmented, yet largely ineffective climate governance system. For purposes of limitation, focus of this article will be on action taken by select *non*-emissions trading programs at the subnational level only. As one of the purposes of this article is to determine if scaled-down action within climate change may already have or promise to take on any legal binding nature where legally binding solutions at the national and supranational levels have largely failed to surface, the main focus of this article will focus on initiatives that voluntarily feature at least some mandatory aspects, broadly interpreted. Thus, the article will analyze initiatives that apply “strict” accountability with traditional enforcement, programs with broader forms of accountability, but no strict enforcement, and models with reporting requirements and regulatory implications, but no enforcement per se. For comparison of possible efficiencies, however, some promising city coalition programs without any enforcement will also be analyzed.

A. Experiments with Traditional Enforcement Methods

The two initiatives analyzed below feature enforcement mechanisms under which actors are held strictly accountable if failing to meet their self-imposed, but binding commitments. One experiment employs monetary fines, the other expulsion from group membership for compliance failures. Such enforcement mechanisms more closely resemble traditional forms of compliance securement than some of the newer, collaborative experiments that will be analyzed later.

Because the purpose of this article is to predict the possible future efficacy of non-traditional, local climate change experiments, the article does not critique the chosen degree of severity or possible lack thereof of the sanctions chosen by each initiative. The interesting aspect of the actual steps taken is to consider whether they might lead to any effect at all, not whether other types or degrees of sanctioning may be more effective than those chosen. Both the potential for procedural and substantive efficacies will be analyzed.

1. EU Covenant of Mayors

80% of all energy consumption and CO₂ emissions is associated with urban activity.⁵⁴ On this background, the European Commission launched the Covenant of Mayors in 2008 to endorse and support the efforts deployed by local authorities to reduce their contributions to climate change.⁵⁵ Covenant signatories aim to meet and exceed the European Union’s target of 20% CO₂ reductions by 2020.⁵⁶ Some signatories voluntary go much further than that. For example, the city of Halmstad, Sweden, has adopted a

⁵⁴ http://www.eumayors.eu/about/covenant-of-mayors_en.html

⁵⁵ http://www.eumayors.eu/about/covenant-of-mayors_en.html

⁵⁶ http://www.eumayors.eu/about/covenant-of-mayors_en.html

45% reductions goal.⁵⁷ Through these goals, local authorities would contribute as much as one fifth of the total emissions reductions effort needed for the whole EU.⁵⁸

The Covenant is open to democratically constituted cities whatever their stage of implementation of their existing energy and climate policies.⁵⁹ Currently, the Covenant has no less than 4,520 signatories representing almost 170 million inhabitants.⁶⁰ Whereas the Covenant was initially open only to cities in Europe, it now offers membership to cities around the world.⁶¹ Thus, in addition to the many EU members, numerous non-EU local authorities have joined the initiative including cities such as Buenos Aires, Lviv, Ukraine; Osh, Kyrgyzstan; Fornelli, Cameroon; and Ushaiia, Argentina; the southernmost city in the world.⁶²

The signatory cities plan to go beyond the objectives set by the EU through the use of individualized Sustainable Energy Action Plans (“SEAPs”) with implementation reports to follow up, by adapting city structures to undertake necessary actions, by mobilizing civil society to take part in developing the SEAPs, and by sharing experience and know-how with other territorial units.⁶³ The action taken must cover at least three of the Covenant’s four key sectors: Transportation, municipal buildings, tertiary buildings, equipment and facilities; and residential buildings.⁶⁴

If the CO2 reduction objectives set forth in the SEAP are not met or if an SEAP is not submitted within the year following formal city adoption of the Covenant, the cities will be terminated from membership of the program:⁶⁵ “Signatories who fail to fulfill their commitments are temporarily suspended from the initiative until they can prove otherwise. In addition, the actual implementation of the SEAP is ensured by the biannual submission of a monitoring report.”⁶⁶

What motivates cities to undertake this type of commitment? Public relations are important. The cities are given a perceivably significant opportunity to make a public statement of extra commitments to CO2 reductions and thus to make their territories

⁵⁷ Halmstad Sustainable Energy Plan 5, available at http://helpdesk.eumayors.eu/docs/seap/714_1329817723.pdf.

⁵⁸ Towards a Low Carbon Future p. 4, available at http://www.eumayors.eu/IMG/pdf/brochure_com_web_FINAL_18_11_2011.pdf

⁵⁹ As a Local Authority 1, available at http://www.eumayors.eu/participation/as-a-local-authority_en.html. If cities are too small to prepare a GHG inventory or draft an action plan, they “should be supported by administrations who can;” Covenant of Mayors 4, available at http://www.eumayors.eu/IMG/pdf/covenantofmayors_text_en.pdf.

⁶⁰ http://www.eumayors.eu/index_en.html

⁶¹ Covenant of Mayors 4, available at http://www.eumayors.eu/IMG/pdf/covenantofmayors_text_en.pdf; Towards a Low Carbon Future 8, available at http://www.eumayors.eu/IMG/pdf/brochure_com_web_FINAL_18_11_2011.pdf

⁶² http://www.eumayors.eu/index_en.html, Towards a Low Carbon Future 8, available at http://www.eumayors.eu/IMG/pdf/brochure_com_web_FINAL_18_11_2011.pdf.

⁶³ Covenant of Mayors 2, available at http://www.eumayors.eu/IMG/pdf/covenantofmayors_text_en.pdf.

⁶⁴ Towards a Low Carbon Future 4, available at http://www.eumayors.eu/IMG/pdf/brochure_com_web_FINAL_18_11_2011.pdf.

⁶⁵ Covenant of Mayors 2, available at http://www.eumayors.eu/IMG/pdf/covenantofmayors_text_en.pdf.

⁶⁶ Towards a Low Carbon Future 4, available at http://www.eumayors.eu/IMG/pdf/brochure_com_web_FINAL_18_11_2011.pdf.

known as pioneers in climate change reduction efforts.⁶⁷ Shared GHG reduction expertise as well as the opportunities to benefit from EU endorsement and support also factor in.⁶⁸ Further, members may also qualify for various types of funding through the initiative.⁶⁹

According to the EU Commissioner for Climate, Ms. Connie Hedegaard, more than 2300 local authorities have already gone beyond the 2020 targets *before* the adopted deadline.⁷⁰ This, of course, is significant. It is thus fair to label action at this level successful substantively, at least under the EU Covenant umbrella. It is also procedurally promising in that the program motivates a greater and greater amount of local authorities *and* their private citizen constituents to take joint action in developing and implementing action plans.

2. Carbon Rationing Action Groups (“CRAGs”)

The CRAG initiative began in England. CRAGs are composed of groups of private individuals who have committed to reducing their individual and collective carbon footprints.⁷¹ “[T]he core idea behind CRAGs is that personal responsibility is key, and that lobbying the government is only half of the solution.”⁷² CRAGs have been compared to “Weight-Watchers for the energy-conscious.”⁷³ The aims of CRAG schemes are:

- To make us all aware of our personal CO2 footprint,
- To find out if [the CRAG scheme] can help us make radical cuts in our personal CO2 emissions,
- To help us argue for the adoption of similar schemes at the national and/or international levels,
- To build up solidarity among a growing community of carbon-conscious people, and
- To share practical lower-carbon-living knowledge and experience.⁷⁴

In the United Kingdom, there are as many as 26 active CRAGs with established rules and at least one carbon accounting year underway as well as thirteen start-ups that are still recruiting members or have not yet determined rules or started a carbon accounting year.⁷⁵ In the United States, there are four established CRAGs and two startups.⁷⁶ In Canada, one established CRAG and one startup exist, and China has one

⁶⁷ As a Local Authority 2, available at http://www.eumayors.eu/participation/as-a-local-authority_en.html

⁶⁸ Id.

⁶⁹ Id.

⁷⁰ Towards a Low Carbon Future 2, available at http://www.eumayors.eu/IMG/pdf/brochure_com_web_FINAL_18_11_2011.pdf.

⁷¹ Sarah Krakoff, *Planetarian Identity Formation and the Relocalization of Environmental Law*, 64 Fla. L. Rev. 87, 115-16 (2012).

⁷²

http://www.theecologist.org/how_to_make_a_difference/climate_change_and_energy/360287/setting_up_a_group_to_cut_carbon_together.html

⁷³ Id.

⁷⁴ http://www.geos.ed.ac.uk/homes/s0671956/CRAGs_report.pdf p. 3.

⁷⁵ Sarah Krakoff, *Planetarian Identity Formation and the Relocalization of Environmental Law*, 64 Fla. L. Rev. 87, 117 (2012).

⁷⁶ Id.

established CRAG.⁷⁷ It should be noted that it is questionable whether *all* these experiments are still truly active or not and if so, what their level of activity is.⁷⁸ In fact, some CRAG members have expressed doubt about whether their respective CRAGs are still fully functioning.⁷⁹ Key members are examining strategies to help the movement grow and flourish in new ways.⁸⁰ At any rate, the CRAG scheme is worth briefly considering to glean the lessons that were, after all, produced even if the CRAG scheme has since stalled in some instances or to some extent.

A CRAG consists of approximately 250-350 members.⁸¹ The CRAGs either set an annual emissions target (a “ration”) in total amounts, for example 5 tons CO₂ per person, or a percentage-based cut in emissions compared to the previous year.⁸² Most British groups with a per capita target started with 4500 kg, an approximately 10% per annum reduction of the UK average for direct emissions. The rationale was that a 10% p.a. reduction is what is needed to cut emissions by 90% by 2030, which is the UK’s fair share of the global reduction necessary to avoid warming of more than 2 degrees C.⁸³ Most CRAGs operate with a target that is the same for each member at a certain emissions level, for example a 25% reduction per year for those who start with a footprint of 15-20 tonnes down to a 5% reduction for those who start with a footprint of 5 tonnes or lower.⁸⁴ Some CRAGs have differentiated obligations and some allow members to set their own targets.⁸⁵ Some do not have a fixed ration at all.⁸⁶ Members keep track of their own emissions by keeping a record of household energy use, private car and plane travel.⁸⁷

The most noteworthy aspect of the CRAG initiative is that many of the groups impose penalties on noncompliant members *without* government mandates requiring such enforcement. This self-imposition of traditional rule enforcement by non-governmental groups is unique in the climate change framework. Where national and supranational

⁷⁷ Id.

⁷⁸ http://www.geos.ed.ac.uk/homes/s0671956/CRAGs_report.pdf.

⁷⁹ http://www.geos.ed.ac.uk/homes/s0671956/CRAGs_report.pdf.

⁸⁰ Jamie Andrews, *Setting up a Group to Cut Carbon Together*, *The Ecologist*, Jan. 13, 2009, available at http://www.theecologist.org/how_to_make_a_difference/climate_change_and_energy/360287/setting_up_a_group_to_cut_carbon_together.html.

⁸¹ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 4*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

⁸² <http://www.climateactioncentre.org/carbon-equity>.

⁸³ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 11*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

⁸⁴ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 10*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

⁸⁵ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 10*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

⁸⁶ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 4*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

⁸⁷ <http://www.climateactioncentre.org/carbon-equity>.

bodies are still discussing whether any future schemes should be legally enforceable or not and, if so, how to implement such enforcement; these groups have thus already voluntarily taken on mechanisms with quasi-legal ramifications, thus showing the non-opposition to traditionally styled norm enforcement by at least some members of civil society in the climate change context. The design of the CRAG enforcement system is as follows: Most penalties are financial. Of the approximately 24 active CRAGs listed in one report, 14 have a financial penalty for exceeding the carbon target ranging from 2 pence to 10 pence per kg.⁸⁸ Many groups cap the penalty at GBP 100 per year. Two CRAGs allow over-emitters to do voluntary work in lieu of paying the financial penalty.⁸⁹ Seven CRAGs chose not to have a penalty at all.⁹⁰ Only two CRAGs operate a carbon “trading” scheme where under-emitters receive payments from over-emitters.⁹¹ Instead, six CRAGs give monies from over-emitters to carbon reduction projects, environmental charities or other “good causes.”⁹² A few have yet to decide what to do with the penalties paid by the over-emitters, but appear to be considering funding carbon offsetting projects or environmental groups instead of financially awarding under-emitters.⁹³ Finally, not all CRAG participants (“CRAGers”) attribute the changes in their carbon consumption patterns to their involvement with the CRAG scheme.⁹⁴ But while some do not so connect their behavioral patterns, the mere fact that they are members of a CRAG has doubtlessly had an effect on their thinking, which is significant too.

The psychology of penalties in the carbon context is relevant to considerations of whether action of this nature and at this level has the potential for being substantively efficient. First, many CRAGers do not think that the financial penalty applied had actually changed their carbon consuming behavior, in part because the penalties are too small.⁹⁵ One person said about a potentially larger penalty: “It would focus my mind. I wouldn’t be content to just let things drift and think if it’s a little bit I’ll pay. I would

⁸⁸ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 13*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

⁸⁹ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 13*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

⁹⁰ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 13*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

⁹¹ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 13*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

⁹² Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 13*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

⁹³ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 13*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

⁹⁴ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 19*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

⁹⁵ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 15*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

have to actually sit down and work it out and that would be good.”⁹⁶ The embarrassment factor should also be considered: some people feel embarrassed about receiving money from fellow CRAgers, but not from larger, unknown sources.⁹⁷ Thus, just over 50% of the interviewees in one study expressed “qualified to enthusiastic” support for the introduction of a national personal carbon accounting scheme in the UK.⁹⁸ One of the main reasons for such support is that a national plan would take the form of a redistributive policy, but one in which the incentive is in having to pay money to a large and relatively anonymous entity rather than being one of gaining money from a small group whose members more closely identify with one another. The embarrassment factor is not perceived as being a barrier in a national scheme because, as one CRAger stated, “there wouldn’t be this ‘I’m doing it to my neighbor’ sort of factor.”⁹⁹

So far, some CRAGs have been able to create some substantively promising results. Members of some groups reduced their footprints by 27% just in their first year of membership from 4.9 tonnes to 3.6.¹⁰⁰ The 3.6 tonne footprint is 31% below the UK average of 5.2 tonnes for direct carbon emissions.¹⁰¹ The average baseline footprint of CRAgers was only 6% below the UK average.¹⁰² Thus, the members were not already at a significant advantage or disadvantage when starting.¹⁰³

It is important to consider what motivates individuals to comply with mandates that have been imposed on them from the top down or that they have imposed upon themselves in order to attempt to identify the most promising solutions for possible future program emulation. The motivation to observe binding mandates comes in many forms. Financial and other traditional, adversarial-style penalties are just one of several possibly effective drivers. Equally important are considerations such as whether the mandates or laws are sound and necessary seen from both a personal and social point of view, whether they have been adopted with public participation by trustworthy bodies of authority, and

⁹⁶ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 15*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

⁹⁷ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 15*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

⁹⁸ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 16*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

⁹⁹ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 15-16*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

¹⁰⁰ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 19*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

¹⁰¹ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 19*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

¹⁰² Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 19*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

¹⁰³ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 19*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

whether they are considered important symbolically as a statement of the direction in which constituents and stakeholders should move.¹⁰⁴ In the CRAG context, this means that it may actually not be the penalties that motivate members to reduce their carbon emissions; it may just as well be that CRAGers – who by definition are highly environmentally conscious people – believe in the soundness of reducing carbon emissions to begin with and who would thus have been just as or almost just as likely to act even without a financial deterrent. Although it is difficult to identify one from a possible multitude of causes leading to any given desired effect, it is still important to monitor whether experiments with strict accountability and penalties for excessive carbon emissions will, over time, lead to more comprehensive and promising patterns of carbon reduction than comparable groups *without* traditional enforcement mechanisms. It is also important to remember that it cannot be assumed that the experiences of some CRAGers will expand to the general population as a whole in the UK or elsewhere should a national, compulsory personal carbon accounting scheme be instigated as CRAGers still only represent a limited segment of the general population. However, their results do suggest some interesting issues to consider, for example whether fixed carbon rations or targets may prove viable, how carbon accounting should be accomplished, and what type of enforcement methods should be applied to subnational *or* national rationing initiatives, if any.

In sum, the CRAG model appears to present some relevance to climate change efforts, but only as an addition to broader schemes. This is mainly so because doubt exists as to whether these groups are truly active anymore and if so, whether any significant work is being undertaken under the CRAG umbrella. If CRAGs reappear as active, fully legitimate actors on the climate change arena, it would become relevant to continue to attempt verify whether the members take action *because* of the model or whether they would have done so anyway for personally convincing reasons as well as to follow up on the efficacy of self-imposing penalties on group members.

Whereas action scaled down to the purely individual, voluntary micro-level thus appears to be largely insufficient as stand-alone models at this point in time, some important lessons can still be derived from the CRAG initiative. First, clear information, targets and intergroup support are a must at this level of action.¹⁰⁵ Second, differentiated responsibilities are needed allowing members to individualize their carbon rationing goals,¹⁰⁶ at least within some parameters and to some extent. Third, flexibility and

¹⁰⁴ For more information on the recognized advantages of public participation, see, Dellinger, *An Unstoppable Tide; Creating Environmental and Human Rights Law from the Bottom Up*, __ Oregon Review of International Law __ (2013).

¹⁰⁵ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 35*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author).

¹⁰⁶ Rachel Howell, *The Experience of Carbon Rationing Action Groups: Implications for a Personal Carbon Allowances Policy 35*, Final Report, The UK Energy Research Centre, Demand Reduction Theme, University of Oxford (on file with author); Jamie Andrews, *Setting up a Group to Cut Carbon Together*, The Ecologist, Jan. 13, 2009, available at http://www.theecologist.org/how_to_make_a_difference/climate_change_and_energy/360287/setting_up_a_group_to_cut_carbon_together.html.

dynamism are key.¹⁰⁷ Accordingly, whereas on the one hand, carbon reduction targets should be clear, the supervising authorities (whether NGOs or government entities) should, on the other hand, consider the benefits of granting participants some leeway in meeting the targets while still upholding clear overall goals to drive the action forward. This is a fine balance to strike, but an important one. Fourth, having sanctions may be more substantively effective than having none. If sanctions are monetary in nature, payments and transfer of funds should be overseen by bodies of more traditional authority such as governments or larger, more established groups than smaller NGOs such as CRAGs because of the embarrassment factor mentioned above. In general, the peer pressure factor does appear to instigate action at the scaled-down level. Said one CRAGer: “If one group member feels the need to take a flight for a particular reason, others in the group can effectively sanction it by ensuring that the *group* target is not exceeded. This is an important concept to explore given that climate change affects us all, no matter who is responsible for the carbon being released into the atmosphere.”¹⁰⁸ Last, but not least, bottom-up action is widely considered necessary to successful climate change efforts. By their very nature, CRAGs demonstrate how such action may spring forth at the very bottom of traditional law- and policy-development hierarchies. This low level of action is not one typically looked to for action and may not yield sufficient substantive progress without the synergic effects that can be obtained through an interface to other larger-scaled areas of action, but procedurally, CRAGs have added value to the environmental discourse.

B. Experimenting with Collaborative Enforcement Methods

This section analyzes Climate Savers, an initiative with no traditional adversarial-style enforcement mechanisms. Instead, this initiative features accountability in the form of monitoring and independent verification combined with secondary implementation requirements. This type of enforcement is more collaborative than traditional approaches with more authoritative and, in some cases, even adversarial approaches. It is also one promoted in and applied in some environmental treaty contexts such as the Facilitative Branch of the UNFCCC and the UNECE Aarhus Convention.

Climate Savers is a WWF-run platform for corporations wishing to undertake voluntary sector-leading targets regarding their own GHG emissions as well as to cooperate with other companies in the implementation of innovative solutions for a low carbon economy.¹⁰⁹ Climate Savers started as a two-year experiment meant mainly to be an advocacy tool, but is now one of the most ambitious and credible climate business

¹⁰⁷ Jamie Andrews, *Setting up a Group to Cut Carbon Together*, The Ecologist, Jan. 13, 2009, available at http://www.theecologist.org/how_to_make_a_difference/climate_change_and_energy/360287/setting_up_a_group_to_cut_carbon_together.html.

¹⁰⁸ Jamie Andrews, *Setting up a Group to Cut Carbon Together*, The Ecologist, Jan. 13, 2009, available at http://www.theecologist.org/how_to_make_a_difference/climate_change_and_energy/360287/setting_up_a_group_to_cut_carbon_together.html.

¹⁰⁹ WWF Climate Savers, *Discover the Benefits of Leadership with WWF Climate Savers 3*, available at assets.panda.org/downloads/brochure_climate_savers_lowres.pdf.

engagement programs in the world.¹¹⁰ Members include established corporate giants such as Nike, Johnson & Johnson, IBM, Novo Nordisk, and Sony.¹¹¹

The members set their own reductions goals tailored to the specific circumstances and operating sector of each member company.¹¹² The goals are set in absolute terms for defined timeframes.¹¹³ Climate Savers write a memorandum of understanding (“MOU”) for the participants, who commit themselves in writing to an action plan.¹¹⁴ If that plan cannot be implemented, a secondary action plan will be drafted.¹¹⁵ The program uses what is known as “stretch targets” under which companies undertake reductions goals that go a few percentages *further* than that with which the companies are comfortable.¹¹⁶ This is done in order to challenge the companies to not just meet, but exceed even their own expectations and comfort levels.¹¹⁷ The MOU stipulates that Climate Savers will issue a public statement about the compliance challenges and an action plan to remedy any gaps that may arise.¹¹⁸ Compliance review is conducted by the independent third party Ecofys.¹¹⁹ Operating with high levels of ambition, the program is thus “not for the faint-hearted.”¹²⁰

The goals are publicly communicated and will result in pressure to comply from the global community.¹²¹ Among other things, the companies have to report progress every year at a global summit in front of their peers, adding pressure to comply.¹²² The members’ relationship with Climate Savers is, however, non-adversarial and there are no penalties for non-compliance.¹²³ This type of oversight and public awareness is thus not

¹¹⁰ Telephone interview with Matthew Banks, Senior Program Officer, Climate Change, WWF US, June 27, 2012; WWF Climate Savers, *Discover the Benefits of Leadership with WWF Climate Savers 5*, available at assets.panda.org/downloads/brochure_climate_savers_lowres.pdf.

¹¹¹ WWF Climate Savers, *Discover the Benefits of Leadership with WWF Climate Savers 11*, available at assets.panda.org/downloads/brochure_climate_savers_lowres.pdf.

¹¹² WWF Climate Savers, *Discover the Benefits of Leadership with WWF Climate Savers 5*, available at assets.panda.org/downloads/brochure_climate_savers_lowres.pdf.

¹¹³ WWF Climate Savers, *Discover the Benefits of Leadership with WWF Climate Savers 5*, available at assets.panda.org/downloads/brochure_climate_savers_lowres.pdf.

¹¹⁴ Telephone interview with Matthew Banks, Senior Program Officer, Climate Change, WWF US, June 27, 2012.

¹¹⁵ Telephone interview with Matthew Banks, Senior Program Officer, Climate Change, WWF US, June 27, 2012.

¹¹⁶ Telephone interview Matthew Banks, Senior Program Officer, Climate Change, WWF US, June 27, 2012.

¹¹⁷ Telephone interview with Matthew Banks, Senior Program Officer, Climate Change, WWF US, June 27, 2012.

¹¹⁸ Email from Matthew Banks, Senior Program Officer, Climate Change, WWF US, June 27, 2012 (on file with author).

¹¹⁹ Press release, World Wide Fund for Nature, *WWF Climate Savers Companies Cut 100 Million Tonnes of Greenhouse Gases*, May 9, 2012, available at http://wwf.panda.org/wwf_news/?204638/WWF-Climate-Savers-companies-cut-100-million-tonnes-of-greenhouse-gases

¹²⁰ WWF Climate Savers, *Discover the Benefits of Leadership with WWF Climate Savers 3*, available at assets.panda.org/downloads/brochure_climate_savers_lowres.pdf.

¹²¹ Telephone interview with Matthew Banks, Senior Program Officer, Climate Change, WWF US, June 27, 2012.

¹²² Email from Matthew Banks, Senior Program Officer, Climate Change, WWF US, December 14, 2012 (on file with author).

¹²³ Telephone interview with Matthew Banks, Senior Program Officer, Climate Change, WWF US, June 27, 2012.

unlike the “naming and shaming” enforcement method already known in international law contexts, although typically one that is used against nation states, not private actors as here.

What drives the participants to undertake relatively far-reaching goals such as those under the Climate Savers program even *without* government requirements? A noteworthy aspect of this program is that the commonly perceived PR advantage of being seen as “green” does *not* motivate all companies to act. According to Senior Program Officer Matthew Banks, the members participate mainly out of a sense of obligation.¹²⁴ They do not want to be associated with the negative tenets of environmentalism such as the bp and “greenwashing” scandals of recent years.¹²⁵ This counters the otherwise common criticism that companies are more interested in the PR advantages to be derived from carbon reduction efforts than in any substantive results. This may well be the case for some, but as shown, does not hold true for all. Among other motivational factors are strong and positive brand images, increased networking opportunities, improved business performance through energy savings, and improved risk management through reduced energy dependence.¹²⁶ These companies also recognize that “cutting carbon emissions and spurring economic growth can go hand in hand.”¹²⁷ Further, the program acts as a “sounding board, providing valuable guidance for companies seeking to substantially reduce their carbon footprints while growing their businesses and enhancing their brand equity.”¹²⁸

The collaborative enforcement methodology of the program can also be measured against notions of Corporate Social Responsibility (“CSR”) pursuant to which some companies just might act because it is the “right” thing to do.¹²⁹ In this context, carbon reduction action is undoubtedly not only taken for the sake of acting in what is modernly perceived to be environmentally sound ways, but also driven by interests in reducing energy consumption to save money, because corporations realize that government regulations are inevitable in the long run anyway, and for fears of potential government or shareholders’ lawsuits for failure to act reasonably in an area in which the law is undergoing change in directions that are not yet fully predictable. Said one stakeholder: “It doesn’t actually matter whether a board believes in climate change, ‘cos climate change believes in them and they have no choice but to ensure that they are seen to be

¹²⁴ Telephone interview with Matthew Banks, Senior Program Officer, Climate Change, WWF US, June 27, 2012.

¹²⁵ Telephone interview Mr. Matthew Banks, Senior Program Officer, Climate Change, WWF US, June 27, 2012.

¹²⁶ WWF Climate Savers, *Discover the Benefits of Leadership with WWF Climate Savers* 6, available at assets.panda.org/downloads/brochure_climate_savers_lowres.pdf.

¹²⁷ WWF Climate Savers, *Discover the Benefits of Leadership with WWF Climate Savers* 6, available at assets.panda.org/downloads/brochure_climate_savers_lowres.pdf.

¹²⁸ WWF Climate Savers, *Discover the Benefits of Leadership with WWF Climate Savers* 3, available at assets.panda.org/downloads/brochure_climate_savers_lowres.pdf.

¹²⁹ For more information about why civil society observes norms that are considered morally sound, although perhaps not mandated by positive law, see Dellinger, *An Unstoppable Tide; Creating Environmental and Human Rights Law from the Bottom Up*, __ Oregon Review of International Law __ (2013).

taking effective action on climate change.”¹³⁰ Thus, whereas some corporations claim that they are not taking action because of any perceived PR advantages, it is clear that for others, the perceived negative implications of non-compliance is a factor in program compliance.

It is fair to describe the program as a success. By May 2012, member companies have cut 100 million tonnes of GHGs in direct and indirect emissions, which corresponds to twice the current annual emissions of Switzerland.¹³¹ One example of effects reached through the program is Johnson and Johnson. This company’s climate change goal was to reduce its baseline 1990 CO₂ emission levels for its facilities by 7% by the end of 2010.¹³² When that target was initially adopted, the company considered it very hard to reach. Nonetheless, the company not only achieved, but exceeded the goal by achieving a 23% reduction at the end of 2010.¹³³ Simultaneously, the company experienced a sales growth of approximately 450%.¹³⁴ At the end of 2011, Johnson and Johnson realized a more modest 4.9% reduction in CO₂ emissions while still realizing a 5.5% increase in sales.¹³⁵ As regards its transportation-related emissions, the company has announced two related goals: a five-year goal of reducing the CO₂ emissions to 142 g/km per vehicle, which it is on track to achieve,¹³⁶ and to realize a 20% improvement in its overall fleet emissions efficiency for its global inventory of over 28,000 vehicles.¹³⁷ For its overall energy use, however, the company states only that it “will continue to follow The Greenhouse Gas Protocol issued by the World Business Council for Sustainable Development and the World Resources Institute” whose goals are not transparent.¹³⁸ Other companies, although not members of Climate Savers, have also managed to reduce energy consumption in tough financial times (perhaps precisely because of such times). For example, Dow Chemical has reduced its energy costs \$9 billion since 1994.¹³⁹ Walmart has improved the fuel efficiency of its distribution fleet by 69% since 2005.¹⁴⁰

¹³⁰ Heike Schroeder & Harriet Bulkeley, *Global Cities and the Governance of Climate Change: What is the Role of Law in Cities?*, 36 *Fordham Urb. L.J.* 313, 341 (2009).

¹³¹ http://wwf.panda.org/wwf_news/?204638/WWF-Climate-Savers-companies-cut-100-million-tonnes-of-greenhouse-gases.

¹³² <http://www.jnj.com/wps/wcm/connect/e265d6804bc83ae392f6ffbf30c50c56/2011-responsibility-report.pdf?MOD=AJPERES> p. 29.

¹³³ <http://www.jnj.com/wps/wcm/connect/e265d6804bc83ae392f6ffbf30c50c56/2011-responsibility-report.pdf?MOD=AJPERES> p. 29.

¹³⁴ <http://www.jnj.com/wps/wcm/connect/e265d6804bc83ae392f6ffbf30c50c56/2011-responsibility-report.pdf?MOD=AJPERES> p. 29.

¹³⁵ <http://www.jnj.com/wps/wcm/connect/e265d6804bc83ae392f6ffbf30c50c56/2011-responsibility-report.pdf?MOD=AJPERES> p. 29.

¹³⁶ <http://www.jnj.com/wps/wcm/connect/e265d6804bc83ae392f6ffbf30c50c56/2011-responsibility-report.pdf?MOD=AJPERES> p. 31.

¹³⁷ <http://www.jnj.com/wps/wcm/connect/e265d6804bc83ae392f6ffbf30c50c56/2011-responsibility-report.pdf?MOD=AJPERES> p. 30.

¹³⁸ <http://www.jnj.com/wps/wcm/connect/e265d6804bc83ae392f6ffbf30c50c56/2011-responsibility-report.pdf?MOD=AJPERES> p. 29. The emission reduction goals of this program are not clear, which casts some doubt on the *ultimate* willingness of the participating corporate members in taking effective action and not just reiterating more or less empty rhetoric.

¹³⁹ Andrew Winston, *The Challenge of Climate Math*, The Huffington Post, November 28, 2012, available at http://www.huffingtonpost.com/andrew-winston/the-challenge-of-climate-_b_2189004.html.

¹⁴⁰ Andrew Winston, *The Challenge of Climate Math*, The Huffington Post, November 28, 2012, available at http://www.huffingtonpost.com/andrew-winston/the-challenge-of-climate-_b_2189004.html.

There is thus reason for cautious optimism that some companies will proactively and voluntarily seek to reduce their emissions without traditional legal requirements.

The Climate Savers initiative shows several important aspects of non-governmental action against climate change under the auspices of an established, reputable organization. First, strict oversight by third, independent parties of claims of environmental advances by corporations is needed to avoid “greenwashing” or even appearances thereof. Of course, it is impossible to prevent companies from producing self-interested, yet largely untrue promotional statements to boost their image and sales.¹⁴¹ It is precisely for this reason that membership of and accountability through organizations such as Climate Savers is an advantage both to those companies that actually intend to take relevant action and to the outside world. Strict or traditional enforcement of organizational goals may actually *not* be needed to ensure goal compliance; softer oversight methods with assistance in reaching the adopted goals may be equally effective. Considerations of public relations are still key to in this context as shown both by the interest of some in being seen as part of the green movement and, similarly but for the opposite reason, the interest of some in *not* being associated with that movement because of recent perceived, although arguably not always factually correct, scandals rocking the environmental movement.

Of course, the most important issue in the corporate context is not so much whether some companies actually mean well and truly intend to reduce their carbon footprints whether for purely financial or, additionally, for more altruistic reasons as well, but that the traditional carbon industry is still able to counteract much of the carbon reductions achieved by other companies through the sheer size of the industry’s planned carbon output as described above. The carbon industry is virtually out of government control at the global level. This situation is untenable and must be turned around if we as a world society are truly serious about finding solutions to climate change. It is beyond the scope of this article and almost impossible to answer the question of just how to do so. However, it remains positive that initiatives such as Climate Savers are able to work productively with other corporations if not the carbon industry for obvious reasons. In short, action at many fronts is required. It is fair to conclude that Climate Savers sets a promising precedent for companies willing to undertake voluntary, but quasi-binding action.

C. Voluntary Experiments

The U.S. Conference of Mayors Climate Protection Agreement (the “MCPA”) and ICLEI’s GreenClimateCities® create contrast to programs with a more binding nature such as the EU Covenant of Mayors. These two voluntary programs are, in particular, relevant in this context as both they and the EU Covenant are city coalition programs. But whereas Covenant appears to be both procedurally and substantively successful, more action needs to be demonstrated by the MCPA and GreenClimateCities® before these can be reasonably be determined to be effective in both aspects as well.

¹⁴¹ For example, in the fall of 2012, bp ran commercials on national televised news stations still boasting the company’s alleged interest in the environment years after having caused one of the worst oil drilling disasters in history.

1. MCPA

The MCPA has been ratified by 1,054 mayors from cities in all 50 states, the District of Columbia, and Puerto Rico, representing a total population of almost 90 million people.¹⁴² The program was launched by then-Seattle Mayor Greg Nichols in 2005 on the date on which the Kyoto Protocol took legal effect for the ratifying nations.¹⁴³

Under the MCPA, participating cities have committed to take the following three actions:

- Strive to meet or beat the [2012] Kyoto Protocol targets in their own communities, through actions ranging from anti-sprawl land-use policies to urban forest restoration projects to public information campaigns;
- Urge their state governments, and the federal government, to enact policies and programs to meet or beat the greenhouse gas emission reduction target suggested for the United States in the Kyoto Protocol – [a] *7% reduction from 1990 levels by 2012*; and
- Urge the U.S. Congress to pass [] bipartisan greenhouse gas reduction legislation, which would establish a national emission trading system.¹⁴⁴

Although the initiative thus refers to “commitments,” it features no enforcement mechanisms and thus no ramifications for noncompliance.¹⁴⁵ The program is entirely voluntary.¹⁴⁶

To sign up for the MCPA, mayors have to sign a simple one-page “agreement” simply stating “You have my support for the Mayors Climate Protection Agreement” with the possibility for adding comments to be posted on the website.¹⁴⁷ Although simplicity in drafting agreements can be good, too much simplicity can also be seen as a lack of sincerity. In combination with the fact that the targets to be reached are not very far-reaching¹⁴⁸ and that there is no enforcement or even apparent accountability under the program, “adopting” the agreement appears to not have much real “bite.”

Although the participating mayors have “recognize[d] the need for a federal partner in this effort, they cannot and will not wait to act until Washington is ready to move on this problem,”¹⁴⁹ no substantively significant results have been produced under the MCPA so far. As shown, the MCPA only attempted to achieve the reduction goal set forth by the Kyoto Protocol, and even this moderate goal has not been met at the time of this writing. Further, the MCPA does not demonstrate how, if at all, it is incorporating

¹⁴² <http://www.usmayors.org/climateprotection/list.asp>. However, a map of participating cities show significant clustering around traditionally progressive urban areas such as San Francisco, Seattle, Portland, Oregon, and other large metropolitan areas.

<http://www.usmayors.org/climateprotection/ClimateChange.asp>

¹⁴³ <http://www.usmayors.org/climateprotection/agreement.htm>.

¹⁴⁴ <http://www.usmayors.org/climateprotection/agreement.htm> (emphasis added).

¹⁴⁵ Telephone interview with Kevin McCarty, Managing Director, MCPA (Aug. 7, 2012).

¹⁴⁶ Telephone interview with Kevin McCarty, Managing Director, MCPA (Aug. 7, 2012).

¹⁴⁷ <http://www.usmayors.org/climateprotection/documents/signaturepage.pdf>

¹⁴⁸ Although it should be borne in mind that approximately 5% was the goal discussed under the UNFCCC regime at the time.

¹⁴⁹ <http://www.usmayors.org/climateprotection/about.htm>

methods of public participation, a recognized indicator of procedural effectiveness. The MCPA has thus demonstrated limited procedural success as well.

2. ICLEI and the GreenClimateCities® Initiative

ICLEI – Local Governments for Sustainability - counts among its members two mega-cities, 100 super-cities and urban regions, 450 large cities as well as 450 small and medium-sized cities and towns in 84 countries.¹⁵⁰ ICLEI was the first global network of cities and local governments established to achieve sustainability at the local level.¹⁵¹ ICLEI's 1991 Urban CO2 Reduction Project, implemented in 14 cities across the US, Europe and Canada, was among the first concrete measures in local climate action.¹⁵² Under ICLEI's initial Cities for Climate Protection (CCP) Campaign, participating cities were expected to follow a “five milestone” process following a political commitment by their local governments.¹⁵³ Milestone 1 requires the cities to conduct a baseline emissions inventory and forecast.¹⁵⁴ Milestone 2 calls for the adoption of an emissions reduction target for the forecast year.¹⁵⁵ Milestone 3 specifies the requirements for the development of a local action plan: “Through a multi-stakeholder process, the city develops a Local Action Plan that describes the policies and measures that the local government will take to reduce greenhouse gas emissions and achieve its emissions reduction target ... In addition to direct greenhouse gas reduction measures, most plans also incorporate public awareness and education efforts.”¹⁵⁶ Milestone 4 addresses the implementation of policies and measures.¹⁵⁷ Milestone 5 requires the cities to monitor and verify their progress on the implementation of measures.¹⁵⁸

GreenClimateCities® is ICLEI's newest EU-funded platform for low-carbon city development which is meant to phase out the Cities for Climate Protection Campaign.¹⁵⁹ The program was launched in June 2012 and is being rolled out through pilot implementation in India, South Africa, Indonesia, and Brazil.¹⁶⁰ The program assists cities in achieving low-carbon development and management through, among other things, technical support, networking, carbon target-setting, emissions accounting and control, and quantification of reduction measures:¹⁶¹

Cities will receive guidance and technical support from ICLEI as they set up their greenhouse gas emissions inventory; identify opportunities for rapid emission reductions; develop a climate action plan; identify finance for urban infrastructure

¹⁵⁰ <http://www.iclei.org/index.php?id=about>.

¹⁵¹ <http://www.iclei.org/?id=940>

¹⁵² <http://www.iclei.org/index.php?id=1651>

¹⁵³ <http://www.iclei.org/index.php?id=10828>

¹⁵⁴ <http://www.iclei.org/index.php?id=810>

¹⁵⁵ <http://www.iclei.org/index.php?id=810>

¹⁵⁶ <http://www.iclei.org/index.php?id=810>

¹⁵⁷ <http://www.iclei.org/index.php?id=810>

¹⁵⁸ <http://www.iclei.org/index.php?id=810>

¹⁵⁹ <http://www.iclei.org/index.php?id=800>

¹⁶⁰ E-mail from Yunus Arikan, Manager, ICLEI, November 21, 2012 (on file with author).

¹⁶¹ E-mail from Yunus Arikan, Manager, ICLEI, November 21, 2012 (on file with author);

<http://www.iclei.org/index.php?id=800>;

http://www.iclei.org/fileadmin/user_upload/documents/Global/About_ICLEI/brochures/GCC_final_Brochure.pdf pp. 1-3.

projects; and measure progress and report their achievements to the global carbonn Cities Climate Registry. This 3-step approach of analyzation, action and acceleration ensures continuation of best practices and tailors them to the specific urban area.¹⁶²

Members of the GreenClimateCities® set specific and individual carbon reduction goals.¹⁶³ These members' individual goals are measured using Heat+; ICLEI's globally accessible online accounting and reporting tool sponsored by, among others, the European Union.¹⁶⁴ Results are registered with the carbonn® Cities Climate Registry, which is overseen by the neutral third party Bonn Center for Local Climate Action and Reporting.¹⁶⁵ As of December 2012, 232 cities from 25 countries representing a population of 235 million inhabitants and controlling community GHG emissions of 1.5 GtCO₂e/yr reported 561 climate and energy commitments, 557 GHG inventories and a total of 2092 mitigation and adaptation actions and action plans through the carbonn® Cities Climate Registry.¹⁶⁶

Importantly, global partnering with other climate change projects such as the WWF Earth Hour City Challenge, the Japan Project, and the Mexico City Pact¹⁶⁷ forms a big part of ICLEI's efforts just as the initiative operates with an interface to major supranational governmental organizations. For example, Heat+ complies with the IPCC guidelines just as ICLEI partners with the UNEP Climate Neutral Network and the World Mayors Council on Climate Change.¹⁶⁸

Although ICLEI and thus GreenClimateCities® asks the members to commit to certain targets, it does not apply any enforcement method, at least not in a traditional sense of the word. Instead, the members are expected to self-police their efforts and make the outcomes publicly available via the carbonn® Cities Climate Registry. Thus, with only the "threat" of potential public scorn if not living up to the adopted targets, GreenClimateCities finds itself on the voluntary end of the compliance continuum spectrum. It recognizes this: "The GreenClimateCities initiative invites cities worldwide to join efforts by local governments from all parts of the world to take voluntary climate

¹⁶²

[http://www.iclei.org/index.php?id=1487&tx_ttnews\[tt_news\]=4873&tx_ttnews\[backPid\]=983&cHash=a169021d51](http://www.iclei.org/index.php?id=1487&tx_ttnews[tt_news]=4873&tx_ttnews[backPid]=983&cHash=a169021d51)

¹⁶³ <http://www.iclei.org/index.php?id=800>;

http://www.iclei.org/fileadmin/user_upload/documents/Global/About_ICLEI/brochures/GCC_final_Brochure.pdf

¹⁶⁴ <http://www.iclei.org/index.php?id=800>; <http://heat.iclei.org/heatplusv4n/sponsors.aspx>.

¹⁶⁵

http://www.iclei.org/fileadmin/user_upload/documents/Global/About_ICLEI/brochures/GCC_final_Brochure.pdf

¹⁶⁶

http://citiesclimateregistry.org/fileadmin/user_upload/cCCR/cCCR_November2012_Update/cCCR_November2012.pdf p. 1

¹⁶⁷

http://citiesclimateregistry.org/fileadmin/user_upload/cCCR/cCCR_November2012_Update/cCCR_November2012.pdf

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[http://www.iclei.org/index.php?id=1487&tx_ttnews\[tt_news\]=4873&tx_ttnews\[backPid\]=983&cHash=a169021d51](http://www.iclei.org/index.php?id=1487&tx_ttnews[tt_news]=4873&tx_ttnews[backPid]=983&cHash=a169021d51); Chronology of Efforts of ICLEI on Local Climate Change Action, on file with author.

action now and not wait for national governments to eventually come to a global climate agreement.”¹⁶⁹

Whether this model proves to be more or less efficient than city initiatives with a more traditional, “adversarial” enforcement style such as that employed by the EU Covenant remains to be seen. This program is yet too new to demonstrate any substantive success. However, this and similar programs *do* demonstrate the potential for and continued interest in voluntary city action leading to climate change mitigation and adaptation results. What appears promising from such schemes is the potential for cities around the world to bypass potential state and national government inaction while maintaining an interface to and potentially cooperating with supranational organizations. These relatively new actors actually act whereas traditional actors continue the stalemate situation with which the world community has grown increasingly dissatisfied. And it is precisely because some of these scaled-down initiatives are as new as they are that there is reason for cautious optimism that dawn is coming to climate change efforts that go beyond mere rhetoric by local entities adopting emissions targets combined with, broadly interpreted, some accountability and repercussions for non-compliance through, at the more voluntary end of the spectrum, negative publicity and the call for self-correction and, at the more mandatory end, through fines, program expulsion, or other traditional enforcement types.

By contrasting the above city coalition initiatives, the following lessons about the potential efficacy of such programs emerge: Seen from a more or less isolated point of view, city programs with at least *some* degree of enforcement appear to be more effective than initiatives without any enforcement. The type of sanction under the EU program – exclusion from group membership – is arguably not terribly severe at first blush, but may nonetheless may drive members to attempt to meet their adopted goals for “naming and shaming” reasons. This compliance driver is, after all, considered important in the international context at the national level, but undoubtedly also has some effect at the city level. Other motivators are the same under the American, the ICLEI-based, and the models and thus demonstrate what the program leaders themselves have determined will help drive cities to join the initiatives and take action. Listening to the actors themselves is also important to external discourse regarding potential program efficacies. For example, all programs operate using a significant degree of generalized peer pressure and the desire to stand out as progressive leaders in the climate change arena.¹⁷⁰ They are based on both financial stressors *and* motivators such as financing assistance, difficult economic times requiring cross-sector energy savings, and the realization of the danger of relying on imported oil from politically unstable regions.¹⁷¹ Program signatories also

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[http://www.iclei.org/index.php?id=1487&tx_ttnews\[tt_news\]=4873&tx_ttnews\[backPid\]=983&cHash=a169021d51](http://www.iclei.org/index.php?id=1487&tx_ttnews[tt_news]=4873&tx_ttnews[backPid]=983&cHash=a169021d51)

¹⁷⁰ For example, Mr. McCarty of the MCPA says that after the Seattle, Washington Mayor took the initiative for the program, the duty became viral in the United States, even at an early point in time. Telephone interview with Kevin McCarty, Managing Director, MCPA (Aug. 7, 2012). According to Mr. McCarty, mayors are aware of the fact that they are often expected to act on socio-cultural changes without initial impetus or support by larger government bodies.

¹⁷¹ Telephone interview with Kevin McCarty, Managing Director, MCPA (Aug. 7, 2012); As a Local Authority 2, available at http://www.eumayors.eu/participation/as-a-local-authority_en.html.

wish to benefit from the channeling of funds from competing areas to their local areas.¹⁷² Technical and other knowledge-sharing among program members and national governance bodies is also important just as general networking advantages are typically listed among the benefits of joining the programs.

Another lesson pertains to the stronger bargaining position of large compared to smaller government units. Thus, actors in the EU city scheme have recognized the benefit of having the EU negotiate with third-party financial actors to set up financial facilities aimed at aiding accomplishment of the tasks of the action plans.¹⁷³ Thus, vertical governance cooperation is important in relation to the success of action initiated by cities and other types of bottom-up action.

So is the involvement of civil society.¹⁷⁴ The MCPA, however, makes no references to any kind of public participation. “Aside from a provision providing for helping with climate change education, no reference is made to the importance and role of an ample public consultation process.”¹⁷⁵ Modernly, this is neither procedurally efficient nor very legitimate. Opening up the policy-making process to public participation discussing how to proceed on certain issues and where the available financial and other resources should be used increases the legitimacy of the regulating process and shares responsibilities of the final outcomes.¹⁷⁶ The otherwise regulated become the regulators; a recognized advantage in modern law and policy-making and – enforcement. The EU model’s focus on mobilizing civil society to take part in developing Action Plan is thus a better solution and should be emulated in similar future programs.

It is clear that time has come for cities and other local governance units to step up their action and roles within climate change mitigation and adaptation in more and more diverse ways than before. Cities enjoy unique positions as advisors, motivators and role models. They can lead by example by reducing their own energy consumption in public buildings and by procuring energy from sustainable sources. They can lead more awareness-raising activities. As planners, regulators and developers, they can take relevant legislative and other legal action. As energy producers and suppliers, they can promote and produce more renewable energy.¹⁷⁷ In the American context, had a national climate change framework been adopted in the USA, it would to a large extent have had to be implemented at the city level anyway. Cities and other local government units must be even more proactive and not wait for national governments to lead the way within

¹⁷² Telephone interview with Kevin McCarty, Managing Director, MCPA (Aug. 7, 2012); As a Local Authority 2, available at http://www.eumayors.eu/participation/as-a-local-authority_en.html.

¹⁷³ Covenant of Mayors 3, available at http://www.eumayors.eu/IMG/pdf/covenantofmayors_text_en.pdf.

¹⁷⁴ For the advantages of civil society involvement in bottom-up lawmaking, see Dellinger, *An Unstoppable Tide; Creating Environmental and Human Rights Law from the Bottom Up*, __ Oregon Review of International Law __ (2013).

¹⁷⁵ Romulu Silveira da Rocha Sampaio, *Regulating Climate Change Risk at the Local Level – the Denver Experience: Greenprint or Greenwash?*, 17 Mo. Envtl. L. & Pol’y Rev. 356, 370 (2010).

¹⁷⁶ Romulu Silveira da Rocha Sampaio, *Regulating Climate Change Risk at the Local Level – the Denver Experience: Greenprint or Greenwash?*, 17 Mo. Envtl. L. & Pol’y Rev. 356, 370 (2010).

¹⁷⁷ For an analysis of the several roles played by cities modernly as well as their importance to top-down or bottom-up governance, see Dellinger, *An Unstoppable Tide; Creating Environmental and Human Rights Law from the Bottom up*, __ Oregon Review of International Law __ (2013).

climate change. As the above shows, effective action can and should at this point in time be instigated at the local level. All such solutions will require accurate and reliable emissions accounting and reporting. This aspect will be examined next.

D. Reporting with Mandatory Implications

To be considered reliable among climate regulation skeptics and advocates alike, it is particularly important for programs to ensure neutral and reliable reporting, accounting, and compliance oversight. Of course, this is also sound practice anyway. Consumer demand for transparency with respect to environmental performance is increasing, which further adds to the need for trustworthy reporting programs. With the establishment of more and more climate-focused initiatives around the world, it is also necessary to apply relatively homogenous and transparent emissions reporting standards in order to be able to compare “apples to apples” at the international level. This section will analyze the Climate Registry as an example of how to accomplish these goal and the relevant concerns in future developments of this and other reporting platforms.

A self-proclaimed “bottom-up” approach to emissions accounting, the Climate Registry is a non-profit collaboration established and governed by North American states, provinces, territories, and Native Sovereign Nations.¹⁷⁸ It is the only program of its kind in North America that started and operates as a voluntary initiative.¹⁷⁹ The program sets standards for members to calculate, verify and publicly report their GHG emissions into one single registry.¹⁸⁰ The results are verified by independent bodies accredited by the American National Standards Institute.¹⁸¹ The Climate Registry now supports both voluntary, market-based, regulatory and mandatory reporting programs¹⁸² and thus has both indirect, but also direct legal implications.

The membership consists of corporations, government agencies (now at the city, state, *and* federal levels) as well as nonprofit organizations.¹⁸³ The Registry has approximately 430 current members including energy-producing and energy-source companies, car manufacturers, mining companies, environmentally-oriented NGOs, colleges, and government bodies.¹⁸⁴ The Registry partners with several GHG reductions programs such as ICLEI and the US Conference of Mayors’ Climate Initiative.¹⁸⁵ Membership is also required for members of the Western Climate Initiative.¹⁸⁶ However, the United States Environmental Protection Agency has since 2009 has required reporting by “large” GHG emitters in the USA.¹⁸⁷ This reporting, however, must be done directly

¹⁷⁸ The Climate Registry pp. 1-2, FAQs, available at www.theclimateregistry.org.

¹⁷⁹ Denise Sheehan & Alex Carr, *The Future of GHG Reporting: Patchwork or Tapestry?*, available at <http://www.theclimateregistry.org/downloads/2010/10/sheehan.pdf>

¹⁸⁰ www.theclimateregistry.org.

¹⁸¹ <http://www.theclimateregistry.org/about/faqs/#q17>;

<http://www.theclimateregistry.org/resources/verification/list-of-verification-bodies/>

¹⁸² <http://www.theclimateregistry.org/about/faqs/#q17>

¹⁸³ <http://www.theclimateregistry.org/members/>

¹⁸⁴ <http://www.theclimateregistry.org/members/>

¹⁸⁵ <http://www.theclimateregistry.org/about/faqs/>

¹⁸⁶ Matthew J. Hoffman, *Experimenting with a Global Response after Kyoto* 89 (2011).

¹⁸⁷ H.R. 2764; Public Law 110-161; 74 FR 56260. According to the EPA, the Greenhouse Gas Reporting Program “will help us better understand where greenhouse gas emissions are coming from and will

to the EPA and thus not, for example, the Climate Registry. This may add to the “patchwork problem” whereby too many actors on the climate change scene may add unnecessary complexity and overlapping requirements. Because of the sheer extent of EPA’s reporting requirement,¹⁸⁸ it may be feared that this would drive programs such as the Climate Registry into a state of less relevance. In turn, this could be a problem to those emitters who are not required to report to the EPA such as smaller emitters and non-American sources. Further, twenty-six states have developed or are developing mandatory GHG reporting rules, many of which go beyond the EPA requirements,¹⁸⁹ so the Registry might have a role to play in supporting reporting under such programs. The EPA also recognizes the importance of voluntary programs,¹⁹⁰ so program co-existence and cooperation might also become a positive result.

In addition to the “usual” benefits of membership such as technical assistance, networking, and promotional advantages, membership of the Climate Registry enables participants to set a baseline for GHG emissions for use in current and possible future regulatory programs.¹⁹¹ This also positions the members to be ready for large-scale emission trading under cap and trade programs, should these become the norm or requirement at a future stage. Further, because the Registry interfaces with several government bodies, it already enjoys quite a bit of legitimacy in the climate regulation context, which is also a solid starting point if emissions trading becomes the order of the day. Simply put, the Climate Registry is “building the infrastructure for a carbon market,”¹⁹² but also for North American registration efforts more broadly. Finally, the interaction among government-mandated regulatory and purely voluntary, bottom-up solutions is significant in times of still limited government mandates because it demonstrates how bottom-up solutions have the potential for fossilizing into government mandates at scaled-up levels and thus, eventually, “hard law.” In short, the Climate Registry is an example of how programs that commence as voluntary programs may, over time and indirectly, obtain mandatory importance.

An analysis of the different roles played by the Climate Registry sheds further light on the broader effects and benefits of this and similar programs. First, the Registry plays an important functional role in standardizing GHG emissions reporting for both those members that are likely to be regulated in national or regional policies, but also those that are not.¹⁹³ It thus serves a “smoothing function” by laying out procedures and protocols for measuring carbon emissions in uniform ways.¹⁹⁴ Through the Registry, climate

improve our ability to make informed policy, business, and regulatory decisions.”

<http://www.epa.gov/ghgreporting/index.html>.

¹⁸⁸ The EPA estimates that the reporting rule will cover approximately 85% of U.S. GHG emissions and apply to 10,000 facilities. Denise Sheehan & Alex Carr, *The Future of GHG Reporting: Patchwork or Tapestry?*, available at <http://www.theclimateregistry.org/downloads/2010/10/sheehan.pdf>

¹⁸⁹ Denise Sheehan & Alex Carr, *The Future of GHG Reporting: Patchwork or Tapestry?*, available at <http://www.theclimateregistry.org/downloads/2010/10/sheehan.pdf>

¹⁹⁰ Denise Sheehan & Alex Carr, *The Future of GHG Reporting: Patchwork or Tapestry?*, available at <http://www.theclimateregistry.org/downloads/2010/10/sheehan.pdf>

¹⁹¹ www.theclimateregistry.org, p. 2.

¹⁹² Matthew J. Hoffman, *Experimenting with a Global Response after Kyoto* 87 (2011).

¹⁹³ Matthew J. Hoffman, *Experimenting with a Global Response after Kyoto* 89 (2011).

¹⁹⁴ Matthew J. Hoffman, *Experimenting with a Global Response after Kyoto* 91 (2011).

change leaders can legitimately claim to be so.¹⁹⁵ In fact, the most important reason for implementing actors to join the Registry is to be recognized for climate leadership.¹⁹⁶ This stands in contrast to, for example, the Climate Savers program under which some corporations have expressed reservations regarding promoting their environmentally friendly actions externally after recent “greenwashing” debacles. The Registry is literally creating a platform for transparency, accountability and uniformity in a still somewhat controversial branch of science and law.

Additionally, the Registry helps build a significant domestic political carbon registration infrastructure. For example, when the EPA issued its mandatory GHG reporting rule in 2009, the Climate Registry influenced the EPA as it developed the rule and the third party verification process, which stands at the core of the Registry’s inventory protocols.¹⁹⁷ The EPA had considered other aspects and solutions, but the Registry procedures were adopted.¹⁹⁸ It is thus a “[p]owerful platform for sub-national governments to engage with U.S. and Canadian federal governments as they (potentially) develop national responses to climate change.”¹⁹⁹ The Registry is a thus promising development with the potential for increased future importance should emissions reporting become more broadly mandatory. It is an innovative program that is developing at the seams of voluntary and regulated activity and presents a “[k]ey example of how experiments work together across governance models.”²⁰⁰ The program is thus also an example of vertical cooperation. It also demonstrates the potential for horizontal interfacing with a variety of climate change-related programs at similar levels whether or not these are, strictly seen, “mandatory,” “regulatory,” or purely “voluntary.”

Further, the program has international potential as its governance and general members include both American and Canadian entities. The Registry has participated in discussions about globalizing the model and thus may gain international reach outside the U.S. and Canada.²⁰¹ The Registry is currently working with a Chinese NGO and an environmental department of the government of Israel to help develop registries in those countries.²⁰² The Registry is further participating in discussions about launching similar registries in other areas.²⁰³ Thus, infrastructure building through the Registry may be going global.²⁰⁴ This is noteworthy because of the potential advantage of having fewer global actors claiming to provide the “best” emissions accounting and reporting oversight (and the “best” programs in general). Homogeneity at a larger, international scale may well prove not only more intrinsically sound to the climate change mitigation efforts and programs themselves, but also establish more external credibility to actors who have not yet committed to any or much action, whether these be corporate actors or government units. These considerations and the potential for governments to interact effectively with

¹⁹⁵ Matthew J. Hoffman, *Experimenting with a Global Response after Kyoto* 89 (2011).

¹⁹⁶ Matthew J. Hoffman, *Experimenting with a Global Response after Kyoto* 89 (2011).

¹⁹⁷ Matthew J. Hoffman, *Experimenting with a Global Response after Kyoto* 90 (2011).

¹⁹⁸ Matthew J. Hoffman, *Experimenting with a Global Response after Kyoto* 90 (2011).

¹⁹⁹ Matthew J. Hoffman, *Experimenting with a Global Response after Kyoto* 90 (2011).

²⁰⁰ Matthew J. Hoffman, *Experimenting with a Global Response after Kyoto* 90 (2011).

²⁰¹ Matthew J. Hoffman, *Experimenting with a Global Response after Kyoto* 90 (2011).

²⁰² Matthew J. Hoffman, *Experimenting with a Global Response after Kyoto* 90 (2011).

²⁰³ Matthew J. Hoffman, *Experimenting with a Global Response after Kyoto* 90 (2011).

²⁰⁴ Matthew J. Hoffman, *Experimenting with a Global Response after Kyoto* 91 (2011).

non-government units in climate reporting and overall programs should be taken into account in both the design and implementation of future climate change reduction initiatives.

IV. What Does “Success” Mean within the Climate Change Discourse?

Before attempting to evaluate the actual or the potential for success of the above programs, it is necessary to consider which benchmarks to apply in doing so. Substantive carbon reduction improvements are of obvious importance, but other outcome-variables are also important to a possible determination of success.

A. Benchmarks for Success

Public participation in the design, implementation and enforcement of laws and policies is a widely recognized indicator of success not just within climate change, but to law in general. However, one school of thought in the climate change contexts is that “[b]ecause of the underlying uncertainty on [sic] the causation between the best local climate change mitigation policy and the real and concrete impact on a global environmental problem, ... efficiency can *only* be measured procedurally... it *cannot* be measured taking into account the quality of the final regulatory result.”²⁰⁵ Whereas modernly, there can be no doubt about the many and important benefits of public participation and whereas it is, to be sure, difficult to trace with *exact* certainty any possible positive carbon reduction results to just one or a few causes, such difficulty does not warrant the claim that public participation should be the only benchmark for success within climate change or any other area of the law as well. Causation uncertainties as well as other legal and technical difficulties abound in relation to many other complex areas of the law. Fortunately, that has not stopped and should not stop the discourse about how to measure success more broadly than by merely verifying the degree to which public participation is applied in various initiatives. Courses of action, legislative progress and on-the-ground results can be evaluated retroactively in an attempt to identify general patterns that appear to indicate greater substantive efficiencies than others. Because law and policy are not an exact science, attempting to achieve “exact certainty” in relation to what may work and what may not is too limiting and does not help in moving the agenda forward. This article thus also measures indicia of possible substantive efficacy in addition to public participation.

The best measure of success of environmental initiatives is, in fact, widely considered to be the substantive improvement of environmental conditions, sustainability, and improved energy infrastructures.²⁰⁶ As regards climate change in particular, success measured in terms of actual effects would thus encompass, among other things, reduced

²⁰⁵ Romulu Silveira da Rocha Sampaio, *Regulating Climate Change Risk at the Local Level – the Denver Experience: Greenprint or Greenwash?*, 17 Mo. Env'tl. L. & Pol'y Rev. 356, 357, 372 (2010) (emphasis added).

²⁰⁶ See, e.g., J. B. Ruhl, *Thinking Of Environmental Law As A Complex Adaptive System: How To Clean Up The Environment By Making A Mess Of Environmental Law*, 34 Hous. L. Rev. 933, n210 (1997); Susan A. Schneider, *Reconsidering the Industrialization of Agriculture*, 26 J. Env'tl. L. & Litig. 19, 27 (2011); Carrie Dolmat-Connell, *After Nafta: Can A New International Convention On Toxic Trade Be Far Behind?*, 12 B.U. Int'l L.J. 443, 458-59 (1994); Andrew Schatz, *Discounting the Clean Development Mechanism*, 20 Geo. Int'l Env'tl. L. Rev. 703, 722 (2008); Laura C. Bickel, *Baby Teeth: An Argument in Defense of the Commission for Environmental Cooperation*, 37 New Eng. L. Rev. 815, 849 (2003).

carbon emissions, reduced energy consumption in general, and reduced total costs of reducing CO2 levels. As there is still uncertainty as to how to achieve these goals, flexibility in program designs is also a key benchmark of success within climate change efforts. As precious time goes by without climate change being addressed sufficiently, it also becomes more and more necessary for effective programs to include adaptation measures in addition to prevention. Adaptation efforts must include components that protect both natural resources and natural services as well as humankind from the coming crises. Adaptation *and* prevention are considered to form part of a “basic litmus test”²⁰⁷ for regional systems, but of course also apply to national and supranational efforts.

Another layer of analysis can be applied to the above considerations regarding success within climate change efforts, namely what has been termed the “Who, When, and How Test.”²⁰⁸ The “Who” part of the test examines the type of action bodies that are created in connection with new legislation or other relevant action and who is appointed to such bodies.²⁰⁹ Responsible task forces with leaders willing and able to move the agenda forward must be established.²¹⁰ Accordingly, such parties must be willing to actually implement potentially new laws fully to avoid a de facto failure of the Who test. They should not, however, have unfettered discretion in how to reach the objectives with which they have been tasked. For example,

an agency often becomes more powerful and has more control over particular outcomes than the legislature, particularly in light of the broad discretion courts usually give agencies. In this case, resources, authority, and discretion can easily become global warming negatives. Political leaders may come and go, but agency personnel will most often retain their positions through multiple administrations. Once entrenched in their jobs, such agency personnel may develop great power, but then use that power to maintain their own positions rather than bravely striking out to implement the true intent of the law. As can be readily imagined, the Who test may be the most important factor in any analysis of how a bill will work.²¹¹

The “When” test looks at whether timeframes for action are sufficiently short.²¹² “Because time is of the essence in every last effort to mitigate global warming, [a] lack of

²⁰⁷ James Olmsted, *The Global Warming Crisis: An Analytical Framework to Regional Responses*, 23 J. Envtl. L. & Litig. 125, 156-158 (2008).

²⁰⁸ James Olmsted, *The Global Warming Crisis: An Analytical Framework to Regional Responses*, 23 J. Envtl. L. & Litig. 125, 156-158 (2008).

²⁰⁹ James Olmsted, *The Global Warming Crisis: An Analytical Framework to Regional Responses*, 23 J. Envtl. L. & Litig. 125, 156-158 (2008).

²¹⁰ James Olmsted, *The Global Warming Crisis: An Analytical Framework to Regional Responses*, 23 J. Envtl. L. & Litig. 125, 156-158 (2008).

²¹¹ James Olmsted, *The Global Warming Crisis: An Analytical Framework to Regional Responses*, 23 J. Envtl. L. & Litig. 125, 156-158 (2008).

²¹² James Olmsted, *The Global Warming Crisis: An Analytical Framework to Regional Responses*, 23 J. Envtl. L. & Litig. 125, 156-158 (2008).

specificity regarding timing may represent a failure of the When test.”²¹³ The “How” test requires specificity in relation to how to reach the program goals.”²¹⁴

Finally, the “success” of any environmental program will have to include a significant mobilization of broad segments of private forces including corporations. Whereas governments and the public-interest sector have important roles to play, solutions that do not seek to involve even broader segments of civil society and the business sector run the risk of becoming lopsided at best and ineffective at worst without the support and cooperation of these. In former UN Secretary-General Kofi Annan’s words: “Action starts with Governments . . . [b]ut Governments cannot do [this] alone. Civil society groups have a critical role, as partners, advocates and watchdogs. So do commercial enterprises. Without the private sector, sustainable development will remain only a distant dream.”²¹⁵ Christiana Figueres, Executive Secretary of the UNFCCC, agrees: “We need the corporate sector to play a part [in the fight against climate change] and to contribute.”²¹⁶

B. Can Local Action be “Too Successful”?

Localized climate change action does not only create viable steps towards climate change mitigation and adaptation; there is also a flip side of the coin. The proliferation of local initiatives has demonstrated pitfalls that should be borne in mind and, if possible, avoided in future processes. Some of these negative outcomes concerns include the following.

First, “[t]here is a tendency to measure success in the field of environmental law more in terms of legal acts than in terms of actually improving the environment.”²¹⁷ However, the true measure of success in this field is, of course, whether actual results are achieved. In fact, more and more acts, regulations, and programs may well lead to an inopportune fragmentation of otherwise potentially promising initiatives into disjointed, inhomogeneous action and thus be counterproductive to the ultimate goal. More concerted action would be better. There is no need to re-invent the wheel again and again, as currently seems to be the direction in which many actors are going. This will not help the agenda out of the stalemate situation in which it has found itself in recent years. A relevant risk is that a large amount of actors (whether they be cities, regions, private or government programs) currently claim to be “the leader” of the field. It thus seems that instead of focusing on efficiency and substance, some of these actors are using climate change just as much or more for promotional reasons than for the goal of reaching the actual goals necessary to prevent extreme climate change.

²¹³ James Olmsted, *The Global Warming Crisis: An Analytical Framework to Regional Responses*, 23 J. Envtl. L. & Litig. 125, 156-158 (2008).

²¹⁴ James Olmsted, *The Global Warming Crisis: An Analytical Framework to Regional Responses*, 23 J. Envtl. L. & Litig. 125, 156-158 (2008).

²¹⁵ Attila Tanzi, *Controversial developments in the field of public participation in the international environmental law process*, in *NGOS IN INTERNATIONAL LAW: EFFICIENCY IN FLEXIBILITY?* 136, Pierre-Marie Dupuy & Luisa Vierucci eds. (2008).

²¹⁶ The Saudi Gazette, *Conference Leaders Hail Doha Gateway Agreement*, December 8, 2012, available at <http://www.saudigazette.com.sa/index.cfm?method=home.regcon&contentid=20121211145601>.

²¹⁷ 12 B.U. Int'l L.J. 443, 458-59.

Further, when action becomes too widespread, the potential for costs savings due to economies of scale becomes diminished. From an important technical point of view, some pollutants may also escape limiting action at all through schemes that are too fragmented: “[B]ecause the sources of GHGs are globally widespread, even ubiquitous, in every country and every sector of the economy, subglobal regulatory coverage fails to control important sources of pollutants.”²¹⁸

Similarly, an important cross-border “leakage”²¹⁹ problem may become the result of action that is “too” localized. “Leakage” denotes situations where subglobal and/or subnational regulations encourage emissions activities to shift or “leak” to unregulated areas over time.²²⁰ It can be traced to three causes: a price effect, a “slack off” effect, and a capital relocation effect.²²¹ The price effect relates to situations in which GHG regulations in one geographical area may affect the prices of and thus demand for certain products in that country with a spill-over effect in another. Consider, for example, that “restricting forest clearing in Country A would restrict timber supply and raise the world market price for timber, inducing an increase in the quantity of timber harvested in Country B” instead.²²² Of course, “[t]he magnitude of these effects depends on . . . how much the activity levels change in response to price changes[] and on the degree of integration of world markets for the relevant goods and services.”²²³ Second, “restrictions on emissions in Country A could induce emissions-intensive industries to uproot and relocate facilities to unregulated Country B” for cost-savings reasons.²²⁴ Third,

[t]he “slack off” effect is a response to changing national net benefits. In the absence of a treaty, Country A might undertake some abatement, just to the point where its (small) domestic share of the global marginal benefits equals its domestic marginal costs of abatement. Country B would do likewise. But if Country A begins to abate its own emissions more aggressively, some additional global protection would be obtained, and the marginal benefit to Country B of its own abatement efforts would be diminished slightly (on the standard assumption of diminishing marginal benefits of protection), so that the domestically rational degree of abatement in Country B would fall. Hence, as some states emit less, other states rationally emit more.²²⁵

²¹⁸ Jonathan B. Wiener, *Think Globally, Act Globally: The Limits Of Local Climate Policies*, 155 U. Pa. L. Rev. 1961, 1967-1973 (2007).

²¹⁹ Jonathan B. Wiener, *Think Globally, Act Globally: The Limits Of Local Climate Policies*, 155 U. Pa. L. Rev. 1961, 1967-1973 (2007).

²²⁰ Jonathan B. Wiener, *Think Globally, Act Globally: The Limits Of Local Climate Policies*, 155 U. Pa. L. Rev. 1961, 1967-1973 (2007).

²²¹ Jonathan B. Wiener, *Think Globally, Act Globally: The Limits Of Local Climate Policies*, 155 U. Pa. L. Rev. 1961, 1967-1973 (2007).

²²² Jonathan B. Wiener, *Think Globally, Act Globally: The Limits Of Local Climate Policies*, 155 U. Pa. L. Rev. 1961, 1967-1973.

²²³ Jonathan B. Wiener, *Think Globally, Act Globally: The Limits Of Local Climate Policies*, 155 U. Pa. L. Rev. 1961, 1967-1973.

²²⁴ Jonathan B. Wiener, *Think Globally, Act Globally: The Limits Of Local Climate Policies*, 155 U. Pa. L. Rev. 1961, 1967-1973.

²²⁵ Jonathan B. Wiener, *Think Globally, Act Globally: The Limits Of Local Climate Policies*, 155 U. Pa. L. Rev. 1961, 1967-1973.

The leakage considerations apply to both the global regime, but also to the United States system if regulations are taken at the subnational level without coherence provided by federal umbrella provisions. Whereas these considerations are important and must be addressed in the development of future localized climate solutions, they should not be allowed stop or slow down the currently necessary development of the area.

V. The Status: Is it Worth Pursuing Climate Change Action at the Localized Level?

This section will apply the above determining factors for the possible success of climate change programs to the described initiatives in order to analyze whether action at the subnational level already is or is likely to become successful seen from both the procedural and the substantive points of view. For the sake of brevity of analysis, the factors will be combined into two overall groupings; “actors” and “substance” in order to follow the scholarly recognized benchmarks for success set forth above. The analysis in relation to the program actors will highlight whether there is a risk that the leaders of the programs have too much discretion, whether public participation is a requirement in the programs, whether corporations are involved, and whether, in general, polycentric action forms part of the programs. The “substance” analysis will seek answers to whether any promising on-the-ground indicators or results can be identified at this point in time, whether the program goals operate with a sufficiently narrow timeframe, and how the initiatives plan to meet their goals.

A. Action at the purely private, voluntary level: CRAGs and the Nudge Theory

This article examined CRAGs as an example of a truly bottom-up solution initiated without any government mandates or interaction, but with self-imposed compliance enforcement. Such voluntary NGO action has, at least until recently, been touted widely as a promising possibility for success, especially since government units remain as reluctant to act as they do. However, the answer to whether such action will suffice in relation to climate change action, the answer must, on balance, be “no.”

First, the CRAG actors are not powerful enough. Whereas the “Who” test referenced above mentions the concern of program leaders that may be so powerful as to have unfettered discretion in relation to the action taken, the CRAG experience shows the opposite: the programs is by its very nature led by peers who must agree on what action to take and how to reach the goals. Whereas such solidarity is laudable in theory, clearer leadership from the top down within the programs must also form a part of successful programs. This appears to be lacking, yet needed, within the CRAG scheme. Further, the range of actors is too narrow. One recognized benchmark for success is polycentric action²²⁶ including, if possible, interaction with government units, corporations, and private interest groups. CRAGs by definition only consist of the latter, which is problematic.

Second, the most important problem in connection with the substance of the CRAG initiative is the apparent lack of continued and/or renewed activity. This is unfortunate given the initial substantively far-reaching goals of the groups (10% GHG reductions per

²²⁶ Elinor Ostrom, *A Polycentric Approach for Coping with Climate Change* 35, Policy Research Working Paper 5095, The World Bank, Development Economics, Office of the Senior Vice President and Chief Economist, October 2009; Craig Anthony Arnold, *Fourth-Generation Environmental Law: Integrationist And Multimodal* 35 Wm. & Mary Env'tl. L. & Pol'y Rev. 771, 856 (2011).

annum) *and* the ability by some CRAGers to reduce their carbon footprints by 27% in the first year of operations.

On the other hand, one of the most promising aspects of this type of program is the fact that at least some people accept fines in binding GHG reduction schemes. Where governments have not yet adopted such or similar penalties, the fact that CRAG members operate(d) with self-imposed fines should be noteworthy for lawmakers. However, how broadly such an enforcement scheme would be accepted by civil society not only in the UK, but especially in the more heavily emitting nations such as the United States is beyond the scope of this article. Suffice it to say that fines imposed on private people for exceeding carbon rations would undoubtedly meet with intense resistance in many places. The CRAG scheme also illustrates how laws that are seen as sound from a personal and social perspective will meet with greater acceptance than those that are not. It is thus important to continue to bring attention to the problem in order to increase the awareness and understanding of the continued and intensifying threat of climate change. Focus on this problem was greater in the late 2000s than is often the now. This is obviously unfortunate.

Outside the CRAG and climate change realm, private action without any government mandates has, by way of comparison, been promoted under such names as the “nudge theory.” Described by the authors as “libertarian paternalism,”²²⁷ the nudge theory was popularized by law professor Cass Sunstein and economist Richard Thaler in their recent book on how to influence private behavior without offering financial incentives or imposing government sanctions.²²⁸ Similarly, Christiana Figueres also recently called for private citizens to “assume responsibility” in relation to climate change, although she did not specifically label her call a “nudge.”²²⁹ For a policy to be a nudge, it has to involve changing our physical or social environment in a way that does not restrict our choices or change financial incentives.²³⁰ For example, successes in behavioral change through nudges include attitudes towards smoking,²³¹ taking shorter showers, turning off lights when leaving a room, and attitudes towards eating healthily and drinking and driving. Examples of nudges within the environmental field include the use of thermostats that state the cost per hour of increasing or lowering room temperatures.²³² A small British company has already designed a relatively inexpensive unit that wirelessly connects to a home’s energy meter and displays electricity usage in watts *or* money.²³³ A blue glow indicates that less electricity than usual is being used; a red glow means the opposite.²³⁴ This is considered more helpful in effectuating actual

²²⁷ Cass Sunstein & Richard Thaler, *Nudge* 5 (2009) (defining libertarianism as “liberty-preserving” with the aim of not burdening those who want to exercise their freedom and “paternalism” as trying to influence people’s behavior and choices in directions that will make choosers better off, as judged by themselves.).

²²⁸ Cass Sunstein & Richard Thaler, *Nudge* (2009).

²²⁹ Karl Ritter, *UN Climate Boss: No Support for Tough Climate Deal*, AP, November 30, 2012, available at <http://news.yahoo.com/un-climate-boss-no-support-tough-climate-deal-123816100.html>.

²³⁰ Baroness Julia Neuberger, *Why a Nudge is Not Enough to Change Behaviour*, BBC News Health, July 18, 2011, available at <http://www.bbc.co.uk/news/health-14186806>.

²³¹ Jonathan Ball, *Nudge Tactics No “Magic Bullet,”* BBC News, Science and Environment, September 6, 2012, available at <http://www.bbc.co.uk/news/science-environment-19506608>.

²³² Cass Sunstein & Richard Thaler, *Nudge* 101 (2009).

²³³ Cass Sunstein & Richard Thaler, *Nudge* 259 (2009).

²³⁴ Cass Sunstein & Richard Thaler, *Nudge* 259 (2009).

change among consumers than to more lofty informational campaigns. Japan is planning to label consumer goods to show their carbon footprints to raise public awareness about global warming.²³⁵ Similar labels have already been introduced in Britain and France.²³⁶ Perhaps most indicatively, the Sacramento Municipal Water District uses a simple, reader-friendly Home Electricity Report that specifies how the users' energy use compares with that of both their "efficient neighbors" (those that fall under a specified standard) and "all neighbors."²³⁷ People are ranked as "great," "good," or "below average" (with one smiley face for good, two for great).²³⁸ Users are also shown how their energy use compares with that of efficient neighbors by percentages and bar charts ("Last month, you used 40% more electricity than your efficient neighbors.")²³⁹ Finally, customers are shown in big letters how much money they are paying per year as a result of their possible inefficiency ("At today's rates, this COSTS YOU ABOUT \$358 PER YEAR").²⁴⁰ Equally importantly, consumers are also given personalized energy-savings tips based on their energy use and housing profiles (such as unplugging appliances, smart purchases, and "investments" in maintenance of heating/cooling systems).²⁴¹ Specificity in what to do to save energy and realistic options in how to accomplish this goal are key. Thus, common factual messages such as "stop flying" or "help save the environment" (as is often displayed on hotel room signs asking patrons to consider reusing towels instead of having them washed) are considered less effective.²⁴²

Although in theory an appealing and promising idea, the problem with the nudge theory in relation to climate change is the remarkable extent of inertia within this area. It may simply be necessary to "force," and not just nudge, people and organizations to take action against climate change whether through legal and/or financial methods such as carbon taxes or tax credits. Indeed, the authors of *Nudge* also do recognize the "status quo bias" among people and the fact that people are, in general, not very able to plan for the future.²⁴³ This may explain the inertia within climate change which is still largely seen as a "future" problem that many people cannot relate to. In contrast, the ozone depletion problem, for example, had much more of a here-and-now effect (think fears at the time of losing one's eyesight due to the lack of a protective ozone layer) and thus arguably caused more of a willingness to act.

The United Kingdom is one of the nations that, so far, has favored "the nudge", but a recent report by the British Government Committee concludes that nudges alone won't work.²⁴⁴ It is necessary to use a whole range of different policies including government

²³⁵ Cass Sunstein & Richard Thaler, *Nudge* 261 (2009).

²³⁶ Cass Sunstein & Richard Thaler, *Nudge* 261 (2009).

²³⁷ Cass Sunstein & Richard Thaler, *Nudge* 259 (2009).

²³⁸ Cass Sunstein & Richard Thaler, *Nudge* 259 (2009).

²³⁹ Cass Sunstein & Richard Thaler, *Nudge* 259 (2009).

²⁴⁰ Cass Sunstein & Richard Thaler, *Nudge* 259 (2009) (emphasis in original).

²⁴¹ Cass Sunstein & Richard Thaler, *Nudge* 259 (2009).

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http://www.theecologist.org/how_to_make_a_difference/climate_change_and_energy/360287/setting_up_a_group_to_cut_carbon_together.html.

²⁴³ Cass Sunstein & Richard Thaler, *Nudge* 34-35 (2009).

²⁴⁴ Baroness Julia Neuberger, *Why a Nudge is Not Enough to Change Behaviour*, BBC News Health, July 18, 2011, available at <http://www.bbc.co.uk/news/health-14186806>.

regulations.²⁴⁵ “People perceive – correctly – that their individual actions will not make a decisive difference.”²⁴⁶ A recent poll found that while, for example, recycling is widespread in America and 73% of those polled are paying bills online in order to save paper, only 4% had reduced their utility use and only 3% had purchased hybrid cars.²⁴⁷ “Given a hundred years, you could conceivably change lifestyles enough to matter – but time is precisely what we lack.”²⁴⁸ Professor Lord John Krebs concurs in findings presented at a recent British Science Festival: Nudges are successful in some areas, but not always. They should not be regarded as a “get out of jail free” card by governments wishing to avoid tougher approaches like regulation or taxation.²⁴⁹ Instead, a combination of approaches – social nudging regulation, taxation and investment – will be most relevant in relation to difficult problems²⁵⁰ such as climate change.

In short, action at the purely private level will not suffice to solve the climate change problem. If privately initiated programs were interfaced with programs with more binding authority and resources, their success rate would have potential to increase.

B. Action at the city level: EU Covenant of Mayors and GreenClimateCities®²⁵¹

Action at this level appears to be the most promising of the initiatives analyzed here. From a positive angle, because the programs constitute cooperation among cities equally situated within the programs, the risk of actors that are “too” powerful from an organizational point of view does not appear to be a problem.²⁵² Nonetheless, one may fear that some cities may over time capture the de facto leadership of the programs, - whether for altruistic or more self-focused reasons - and thus obtain inexpediently strong leadership roles vis-à-vis other cities. This concern should, however, be addressed internally through proper procedural preventative measures.

The EU Covenant of Mayors attempts to motivate civil society to cooperate with the member cities in developing action plans. This is a procedurally sound practice. In contrast, GreenClimateCities® does not mention any type of public participation in its documentation, which is also not very transparent. The program is very new, so giving it the benefit of the doubt, the correction of these issues may well be in the pipeline, which would be desirable for the reasons established above. The EU Covenant of Mayors attempts to share information with “other territorial units,” and thus to undertake at least

²⁴⁵ Baroness Julia Neuberger, *Why a Nudge is Not Enough to Change Behaviour*, BBC News Health, July 18, 2011, available at <http://www.bbc.co.uk/news/health-14186806>.

²⁴⁶ Bill McKibben, *Global Warming’s Terrifying New Math*, The Rolling Stone, August 2, 2012.

²⁴⁷ Bill McKibben, *Global Warming’s Terrifying New Math*, The Rolling Stone, August 2, 2012.

²⁴⁸ Bill McKibben, *Global Warming’s Terrifying New Math*, The Rolling Stone, August 2, 2012.

²⁴⁹ Jonathan Ball, *Nudge Tactics No “Magic Bullet,”* BBC News, Science and Environment, September 6, 2012, available at <http://www.bbc.co.uk/news/science-environment-19506608>.

²⁵⁰ Jonathan Ball, *Nudge Tactics No “Magic Bullet,”* BBC News, Science and Environment, September 6, 2012, available at <http://www.bbc.co.uk/news/science-environment-19506608>.

²⁵¹ The MCPA has purposefully been omitted from this section due to the organization’s lack in updating commitments at the end of 2012 when this article was written.

²⁵² This of course remains a concern at the individual city level, where mayors may have relatively large amounts of power depending on the democratic design in question. In the climate context, however, “strong” mayors have helped the agenda forward such as in the case of London, England, New York, and Seattle. See Dellinger, *An Unstoppable Tide; Creating Environmental and Human Rights Law from the Bottom Up*, __ Oregon Review of International Law __ (2013).

some, albeit not much, polycentric action. However, the focus on *territories* indicates that the Covenant does not plan to involve PINGOs or BINGOs to a significant extent in its work. GreenClimateCities® does not mention any type of polycentric cooperation in its materials beyond the obvious cooperation among the governance members themselves. Cities (or other governmentally established geographical units) will thus be the solely responsible parties under both the EU Covenant and the GreenClimateCities® programs. But polycentric action is a recognized benchmark of success, especially if both business *and* public-interest NGOs are involved in the same programs. This consideration also applies to the city level and should thus be taken into account for greater possibilities of effectiveness and inclusiveness in city coalition programs.

Substantively, the EU Covenant of Mayors program appears to be promising. The 20% reductions goal by 2020 is positive. However, it is important to remember that by definition, this goal then only accounts for one fifth of the total effort required by the EU, thus still leaving no less than four fifths of the goal to be accomplished by non-members including many rural areas. Although some less urbanized areas such as counties and metropolitan districts have joined the initiative, members are typically towns, cities, and other relatively urbanized areas. Given the fact that most sources of CO₂ (power plants, companies, and individuals) make urban areas their home, one would have hoped that by now, the umbrella goals of such urban areas would have reached farther than the arguably still meager 20%. At the same time, it should be remembered that other official and unofficial programs also overlap with or compare to the EU Covenant. This patchwork situation is, however, not ideal as it is not only difficult to overview, but also creates risks that gaps exist and remain unnoticed in what should ideally be an all-encompassing blanket. Nonetheless, it is promising that clear reductions goals have been set and announced under the EU Covenant, that these will not be met solely or mainly by cap-and-trade programs, but by actual emissions *reductions*, that there is a specific year for goal fulfillment that is not too distant, and that the program is spreading to other parts of the world than just the EU. It is also noteworthy that some EU actors are willing to exceed the established targets. This compares to the ClimateSavers program under which some corporations employ similar “stretch targets” that ask them to go further than what they originally thought they could and bodes well for quasi-voluntary action. In contrast, the goals and enforcement methods of the GreenClimateCities® are still somewhat untransparent at this point in time.

In short, action against climate change at the city level is promising. Most importantly though, it should be considered against the risk of overcrowding by a proliferation of too many patchwork programs and actors, most of whom invariably claim to have “the” best solution(s) to the problem and be the next “leaders” of action at the sub-national, sub-state level. Additionally, it would be preferable if larger government units and supranational organizations would (re-)enter the scene to cooperate and otherwise interface legislatively, practically, and politically with the city actors. This is so because there are, as amply demonstrated elsewhere, many roles that only such larger units can undertake or that they are best positioned to undertake. Importantly here, larger governance units can create and enforce umbrella action goals, which could help alleviate the above-mentioned problem of overcrowding. Further, deeper and broader involvement by state, national, and supranational actors would not only lends more force to the regime

in general, but also, after all, more credibility to action taken in cooperation with actors at lower levels.

Cities have clearly demonstrated the potential for innovative and effective action within other areas than climate change. For example, the San Francisco ban on free plastic grocery bags has spread to such cities as Los Angeles, Toronto, Canada, and Delhi, India.²⁵³ Other cities such as Santa Fe, New Mexico, are considering the ban as well.²⁵⁴ Even more jurisdictions – 70 in California alone – have approved bans on Styrofoam cups and food containers.²⁵⁵

New York City has adopted a more controversial ban on the sale of large-sized sodas for health reasons.²⁵⁶ The viability and success of the latter remains to be seen, but it bodes well for climate change governance that effective legislative and other action does spring up at the city level even when not required by state or national bodies.

C. Action at the established NGO-level: Climate Savers

Environmental discourse often laments the lack of corporate involvement in non-governmentally mandated climate change solutions. The Climate Savers program is not only an example of how corporations *do* in some instances involve themselves voluntarily in climate work, but how they also, at least in this instance, take this a step further and cooperate successfully with a PINGO, namely the overseeing WWF. A procedurally successful aspect of the program is demonstrated because of the BINGO-PINGO cooperation itself. This type of cross-sectoral NGO cooperation is very promising.

Public participation – otherwise a hallmark of procedural success - is arguably not directly relevant to Climate Savers, at least not to as large an extent as with government programs, as the program is by definition an initiative by and for companies whereas the public participation concern centers more on traditional governance units. Of course, expanded cooperation with not only government entities at any level and with other PINGOs or BINGOs would be desirable.

On the other hand, a concern when measuring the success of environmental programs is, as always, whether implementing and/or leading actors may become too powerful in relation to other internal and external actors. The Climate Savers program brings forward this concern. The program membership includes corporate giants with the potential for paving the way in positive, but arguably also in negative ways. Most environmentally interested stakeholders probably share the concern that with the large amounts of corporate resources and thus potential for leverage possessed by the type of

²⁵³ http://www.huffingtonpost.com/2012/05/23/plastic-bag-ban-la_n_1540478.html;
<http://www.plasticsnews.com/headlines2.html?id=27079&channel=450>;
<http://www.smartplanet.com/blog/cities/delhi-imposes-complete-ban-of-plastic-bags/5192>;

²⁵⁴ Telephone interview with Katherine Mortimer, Sustainable Santa Fe Programs Manager, Aug. 16, 2012.

²⁵⁵ Wendy Koch, *Cities Have “Tidal Wave” of Bans on Foam Containers*, the USA Today, Nation, Dec. 13, 2012.

²⁵⁶

http://www.slate.com/articles/health_and_science/science/2012/06/bloomberg_bans_large_soda_the_science_behind_the_decision_.html

companies involved in programs such as Climate Savers comes the risk of excessive influence both within the program, but also externally. In the United States, corporations are widely considered to have “captured” many government units. This concern also applies to the organizational level where leadership could similarly be captured by the strongest actors. After the United States Supreme Court’s decision in *Citizens United v. Federal Election Commission*,²⁵⁷ fears that corporations can and do yield excessive powers not only within certain circles such as the groups of which they are members, but also in society at large, are certainly not shrinking. And after environmental scandals such as the bp disaster, the fear of corporations proclaiming externally to be environmentally “friendly,” only to actually remain on a traditional profits-above-everything-else course remains very real. The risk, as demonstrated above, is one of *unfettered* discretion. In the Climate Savers network, it does not appear that any given corporation enjoys too broad powers in relation to other members or the program leadership. But civil society’s general concern that with “leadership” and prominence comes the risk of negative dominance is understandable. It is one that the program should address better externally for a greater amount of acceptability among non-corporate stakeholders in the climate process at large. On balance, however, it is fair to consider ClimateSavers a procedural success because of, in particular, its PINGO/BINGO interface, the reliable nature of the overseeing and well established NGO, and the clear processes for goal fulfillment.

Substantively, the program also appears promising. In particular, the concept of stretch targets is positive as this indicates a corporate awareness that action and more of it - and not the resistance for which many corporations are notorious in the climate context - is needed to achieve substantively successful climate goals. Accordingly, the fact that some companies have already achieved two-digit reductions in times when, for example, the Kyoto Protocol has operated with single-digit reductions figures, at least until very recently. It is also noteworthy that these companies have achieved their reductions while increasing corporate sales growth, even in today’s financially very difficult circumstances. The fact that not insignificant emissions reductions are well underway at the voluntary, corporate level must be determined to be a substantive success as is the program’s focus on third-party compliance review.

In short, it is worth pursuing voluntary action at the BINGO level although some risk factors exist. Cynics will point out that companies may simply participate in programs such as Climate Savers because of PR advantages, the potential for corporate savings, the risk of shareholder hostility and potential lawsuits if not taking action, or because companies realize that regulations appear inevitable in the long run. At any rate, it cannot reasonably be disputed that no matter what their motivation, it is positive that some action is taken by the corporate world, which to a large extent was known to resist such action or even deny the existence of the problem until not too long ago. Broader and more far-reaching corporate action would, of course, be even better, but the fact that many large and well-known companies have involved themselves and cooperate with a PINGO has the potential to create a trend that other perhaps more resistant companies will not be able to avoid in the long run for a variety of reasons. In combination with the pressure exerted by, for example, city and hopefully soon also national and international

²⁵⁷ 558 U.S. 310 (2010).

governance units, there may be grounds for hope that companies will soon form a larger active part of possible solution to the climate change challenge.

D. Multi-sector action: The Climate Registry

Reliable, accurate, and transparent carbon accounting and registration is a must to progress against climate change at any front. Third-party oversight lends necessary credibility to carbon reduction programs. It also allows for future enforcement based on data accessible and verifiable by the overseeing bodies. Because of the highly technical and global nature of the underlying problem, uniform or at least comparable standards are necessary. The Climate Registry is one example of a platform for addressing these concerns. It demonstrates the possibilities for successful interaction among city, state, federal and tribal government entities as well as across to civil society represented via BINGOs and/or PINGOs. The program also is an example of how programs may expand from purely voluntary, bottom-up action to having regulatory implications if or when governments start requiring the type of service that programs such as the Climate Registry provides. Vertical and horizontal cooperation among government and civil society actors is considered key in the environmental arena as well as more broadly. The Climate Registry exemplifies the possibilities of such cooperation. Where this can be expanded to the international level, such as is likely in the case of the Climate Registry, the potential for success also expands. But the risk of overcrowding also exists when it comes to carbon registration. In the United States, both the Climate Registry and the EPA provide registration options. Internationally, the carbonn® Cities Climate Registry also offers such options. It is ironic that on the one hand, polycentric, bottom-up action is necessary to truly move the climate change agenda forward, but on the other hand, too much such action poses separate risks too. Nonetheless, this is the case. As in general, “too much” of something is not good, but neither is “too little.” A reliable, workable, and trustworthy medium needs to be developed, albeit one that allows for a healthy amount of competition among program solutions, perhaps even when it comes to registries. Time, government action or inaction, public opinion, and the marketplace will contribute towards finding workable solutions. In the meantime, actors with power to move the development in the qualitative right direction should be aware of the negatives posed by focusing too narrowly on success for their own programs only, but should also – as arguably is the case already – consider the benefits of synergism between programs on at least the international level where registries can co-exist, even if this may not be the case for reasons of competition at the national levels.

VI: Conclusion

Climate change requires imminent action from as many angles as possible. No one single solution is sufficiently promising at this very late point in time. However, this much is clear: waiting for national- and supranational-level actors to take substantively effective action in broad agreement with a majority of other similarly situated actors is like waiting for Godot; unlikely to happen, at least at an early enough point in time. This article posited that local initiatives currently present the most promising course of action in relation to effective climate change solutions. The article analyzed subnational, substate programs with no, limited, or traditional enforcement methods. Of such local initiatives, the most promising sources of procedural and substantive success are those that are not scaled down to the purely private level, but rather include involvement and

oversight by somewhat larger and more well-established bodies such as city coalitions or recognized NGOs. Whereas traditional law enforcement is not a must to potential progress created by localized actors, research does indicate that those programs that feature at least some mandatory aspects are best positioned to convert plans into actual GHG reductions.

An argument may be that there is no time for local action within climate change. The answer to this is that there is precisely *only* time for this. Although action by and an interface to larger-scale governance units would, of course, still be desirable, experience shows that we must look to nontraditional actors to continue and step up climate change action. This is even more evident after the climate change treaty discussions under the UNFCCC regime yet again failed to produce any effective results at the end of 2012 and in fact *weakened* the second commitment period of the already too modest Kyoto Protocol.

Climatologists continue to warn of a tipping point²⁵⁸ after which the world is unlikely to be able to reverse unforeseeable, but in all likelihood extreme effects of climate change on our natural environment. However, we may also reach a much more positive tipping point, one at which action by a yet relatively small amount of participants reach such a critical mass that effective climate change reduction becomes the order of the day and not mere rhetoric about what could be. At that point in time, the law of the few²⁵⁹ will be the law of the many. Hopefully, *that* tipping point is right around the corner. Anything else would be unacceptable.

²⁵⁸ “The term ‘tipping point’ in its most basic meaning refers to a critical point when unprecedented changes occur rapidly with irreversible effect. It entered the academic lexicon when it was used by the political scientist Morton Grodzins in 1957 in his sociological studies on racial segregation to describe the critical threshold at which point the white population would leave an area where more and more black people were present.” Pojanath Bhatanacharoen et al., *The Tipping Point Of The ‘Tipping Point’ Metaphor: Agency And Process For Waves Of Change*, available at <http://www2.hull.ac.uk/hubs/pdf/ID%20172%20Bhatanacharoen%20P,%20Clark%20T,%20Greatbatch%20D.pdf>. The phrase was coined by analogy to physics where adding even a small amount of weight to a balanced object can cause it to suddenly and completely topple. “The tipping point is when change in a complex system becomes unstoppable. This tends to happen quickly and abruptly, rather than gradually and incrementally.” Mark Heley, *The Global Tipping Point*, netplaces, available at <http://www.netplaces.com/guide-to-2012/the-chaos-point-and-the-noosphere/the-global-tipping-point.htm>. However, the phrase “the tipping point” was more widely popularized by Malcolm Gladwell in his 2000 bestseller *The Tipping Point: How Little Things Can Make a Big Difference*. Gladwell defines the “tipping point” as “the moment of critical mass, the threshold, the boiling point,” at which changes within society, businesses and science become irreversible. Id. at 12.

²⁵⁹ Economists call this the 80/20 principle. This describes the notion that in any given situation, roughly 80% of any work to be done will be undertaken by 20% of the participants. Malcolm Gladwell, 19 *The Tipping Point: How Little Things Can Make a Big Difference* (2000).