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# THE SINGAPORE WORKAROUND:

## PROVIDING A “GREENPRINT” FOR A UNFCCC PARTY RECLASSIFICATION

by *P. Cal Trepagnier\**

### INTRODUCTION

The international climate debate currently focuses on the world’s two largest greenhouse gas emitters: China and the United States.<sup>1</sup> However, to successfully address the impasse in climate change negotiations, the focus should actually be on one of the smaller emitters, the Republic of Singapore (“Singapore”). The United Nations Framework Convention on Climate Change (“UNFCCC”)<sup>2</sup> classifies nations into two categories originally based on 1990 economic levels: Annex I Parties (developed countries) and Non-Annex I Parties (developing countries).<sup>3</sup> Although there is no automatic graduation based on predefined criteria, a process and a precedent exists for status graduation that could provide a model for countries to shift from Non-Annex I to Annex I Parties. In 2009, Malta, originally a Non-Annex I country, successfully petitioned the UNFCCC after joining the European Union (“EU”) to “put itself on the same legal footing as the other Member States of the European Union that are included in Annex I to the Convention.”<sup>4</sup> Singapore’s economy is also strong enough to shift it from a Non-Annex I to an Annex I country and other countries can then follow suit, providing a solution to the current impasse in negotiations.

This article offers a “Singapore workaround” as a way forward: diplomatic negotiations with Singapore aimed at changing the classification of nations that have developed economically since the formation of the UNFCCC. It has been argued by “[p]roponents of reclassification . . . that responsibility for mitigation and eligibility for support should reflect contemporary differences in levels of development among developing countries, rather than those current[ly] built into the Convention.”<sup>5</sup> The reclassification of Singapore from a Non-Annex I to an Annex I Party would provide the ideal model for shifting parties’ obligations in the climate realm in the future. Singapore is a financial leader in both globalization<sup>6</sup> and the global recovery<sup>7</sup> and is well positioned for international and domestic “carbon finance.”<sup>8</sup> The nation is economically poised to retool its energy sector,<sup>9</sup> faces imminent and significant risks from climate change impacts,<sup>10</sup> and is also ready to create and enforce modern climate laws.<sup>11</sup> This article examines climate law in Germany and Spain to show how Annex I classification benefited their economies over the past six years. Finally, it discusses how establishing climate laws in Singapore could affect emerging economies, namely Brazil, India, and China.

### OPPORTUNITY FOR BREAKTHROUGH IN INTERNATIONAL CLIMATE LAW

Current international climate law is regulated primarily by the UNFCCC, which was created in 1992 from the United

Nations Conference on Environment and Development in Rio de Janeiro, Brazil, also commonly known as the “Earth Summit.”<sup>12</sup> Article 3 of the Kyoto Protocol of 1997 binds Annex I Parties to reduce “their overall emissions of such gases by at least 5 percent below 1990 levels in the commitment period between 2008 and 2012.”<sup>13</sup> Under the Kyoto Protocol, however, the majority of countries—Non-Annex I nations—do not have greenhouse gas reduction targets.<sup>14</sup> Moreover, there is no automatic system that requires them to reduce emissions, regardless of the level of gross domestic product (“GDP”) per capita.<sup>15</sup> The lack of a mechanism to graduate Non-Annex I Parties once they achieve a certain level of economic development has emerged as perhaps the greatest challenge of the UNFCCC.

The richer developing nations with high emissions that do not take on Annex I rights and responsibilities have long caused frustration and concern for the United States,<sup>16</sup> which refuses to ratify the Kyoto Protocol and commit to emissions reductions.<sup>17</sup> The first commitment period of the Kyoto Protocol is on course to end in 2012 and recent UNFCCC negotiations in Cancun, Mexico fell short of creating a second commitment period.<sup>18</sup> A lack of emissions reductions targets from emerging economies such as Brazil, India, and China have caused stalemates in international negotiations.<sup>19</sup> Despite Singapore’s small size and its relatively minor greenhouse gas emissions, Singapore’s graduation to an Annex I Party could have broader implications for emerging economies in the international effort to curb global climate change.

A graduation mechanism in the UNFCCC would adjust country mitigation obligations over time. A similar option was successfully established by the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer; that Protocol created a panel that reviews country requests for exemptions from ozone depleting substance commitments.<sup>20</sup> Currently however, the UNFCCC’s approach to evaluating country classification is ambiguous.<sup>21</sup> Singapore taking on the rights and responsibilities of an Annex I Party would help to kick-start the process and encourage other rising nations to follow suit. Therefore, the United Nations should facilitate talks with Singapore regarding the transition of Singapore’s status from a Non-Annex I country to an Annex I country.

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## ECONOMIC READINESS

The International Monetary Fund (“IMF”) describes Singapore as a “newly industrialized Asian economy.”<sup>22</sup> Singapore, by land area, is a small, densely populated urban city-state that has limited energy resources.<sup>23</sup> In contrast to its Southeast Asian neighbors, Singapore is not a major agricultural center and therefore much of its food is obtained through importation.<sup>24</sup> The IMF last reported on Singapore’s GDP in 2009 and, at recession levels, Singapore had a GDP of \$182.2 billion U.S. dollars or \$37,200 U.S. dollars per capita.<sup>25</sup> Singapore’s economy has proven to be one of the most stable—not just in Asia, but also globally.<sup>26</sup>

As a result of a strong economic outlook, Singapore can continue to retool its energy sector and meet the challenges of carbon reduction.<sup>27</sup> Singapore has already taken significant action toward clean energy development. In 2001, for example, Singapore’s National Environment Agency set up the Innovation for Environmental Sustainability Fund to provide grants for clean energy investment.<sup>28</sup> In 2007, the Economic Development Board created the inter-agency Clean Energy Programme Office (“CEPO”).<sup>29</sup> Additionally, the Ministry of National Development allocated approximately thirty-nine million U.S. dollars over a five-year period for a Research Fund for the Built Environment.<sup>30</sup>

Currently, Singapore also receives carbon finance through the Clean Development Mechanism (“CDM”), under which Annex I Parties sponsor projects in Singapore to offset the sponsoring country’s emissions.<sup>31</sup> The Kyoto Protocol defines the CDM as an instrument “to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the UNFCCC, and to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments under Article 3.”<sup>32</sup> If Singapore were to accept Annex I responsibilities, it could no longer receive CDM financing and would instead finance these projects in the developing world to help offset its own emissions.<sup>33</sup> With its regional placement and cultural expertise, Singapore would be well positioned to sponsor the projects for other Association of Southeast Asian Nations (“ASEAN”)—nine other developing countries that do not traditionally participate in climate finance projects.<sup>34</sup> Furthermore, Singapore’s stable and strong financial sector would bring additional liquidity to the global carbon market.

## SINGAPORE’S CLIMATE NEGOTIATING POSITION

The Singaporean government has taken a proactive stance on mitigating global climate change and enforces its laws effectively. Singaporean climate negotiators made statements during the last two Conferences of Parties (“COP”) meetings that indicate its willingness to address global climate change.<sup>35</sup> On January 28, 2010, Singaporean Ambassador-at-Large and Chief Negotiator for Climate Change, Chew Tai Soo, wrote, “Singapore therefore wishes to associate with the [Copenhagen] Accord as a good basis for advancing further international negotiations towards reaching a legally binding global agreement on climate change” in a letter to the Executive Secretary, Yvo de Boer, of

the UNFCCC Secretariat.<sup>36</sup> On December 9, 2010, Shunmugam Jayakumar, Singapore’s Senior Minister and Chairman of the Inter-Ministerial Committee on Climate Change addressed a high level conference in Cancun, Mexico at the 16th COP meeting.<sup>37</sup> He emphasized his commitment to a legal framework stating that

it is important that as we pursue a “Balanced Package” in Cancun, we must have clarity that our end goal is to reach a legally binding outcome. Whatever we achieve in Cancun, and whatever be our next steps, it is imperative that these elements or decisions will eventually be stitched together in a legally binding nature, without which, there can be no guarantee of mitigation actions, nor can there be guarantee of the support provided.<sup>38</sup>

Moreover, as a requirement for being a member of the UNFCCC, Singapore submitted two “national communications on climate change.”<sup>39</sup> Each communication shows a willingness to offer solutions to mitigate and adapt to climate change.<sup>40</sup> In its first national communication to the UNFCCC in August 2000, the government of Singapore wrote, “[c]omprehensive preventive measures to safeguard the environment will not work unless there is stringent enforcement to ensure that the laws and regulations are complied with.”<sup>41</sup> In its second national communication from November 2010, the Singaporean government stated,

As a non-Annex I Party to the UNFCCC, we are not subject to binding greenhouse gas emissions reduction commitments under the Kyoto Protocol. Our contribution to global greenhouse gas emissions is, and will remain, small. Nonetheless, as a small-island state vulnerable to the impacts of global climate change, Singapore takes climate change seriously. We will therefore continue to do our part in global efforts to address climate change.<sup>42</sup>

However, some opposition exists within the Singaporean government. Its chief climate negotiator, Chew Tai Soo, made a statement in February 2009 that Singapore should not become an Annex I Party given its size and relatively small carbon footprint: 0.3% of global emissions.<sup>43</sup> Mr. Chew also made an unofficial statement at a sustainability conference in Singapore regarding his opinion on the UNFCCC country classifications: “This approach is flawed as it does not take into account the unique considerations and capabilities of different countries . . . it penalizes small countries with small populations without taking into account their limitations.”<sup>44</sup>

These comments do not reflect Singapore’s overall commitment in addressing climate change and the important example it would set for the global community by becoming an Annex I party. For example, in 2009 a program called Sustainable Singapore Blueprint pledged that the nation would reduce greenhouse gases by sixteen percent below 2020 business as usual levels if a binding international agreement on climate change were reached.<sup>45</sup> With this program, Singapore is already implementing a voluntary mitigation plan, as a contingency should there be a binding international climate agreement. The United Nations

should facilitate discussions to encourage Singapore to “graduate” and accept these responsibilities since Singapore is willing and able to create and enforce laws necessary to achieve carbon reductions.

### ANNEX I SUCCESS AND IMPLICATIONS FOR EMERGING ECONOMIES

Singapore can benefit from looking to two Annex I Parties, Germany and Spain, as models for maintaining economic growth through Kyoto Protocol-based energy efficiency and renewable energy projects. In 2005, both Germany and Spain entered into a binding agreement to reduce carbon emissions under the Kyoto Protocol.<sup>46</sup> Since then, laws designed to reduce carbon and modernize electricity generation, distribution, and consumption have steadily increased.<sup>47</sup> Germany has a national commitment to reduce its carbon footprint forty percent from its 1990 levels by 2020.<sup>48</sup> Germany met its 2012 goal early, in 2007, by generating 12.5% of its electricity from renewables, and Germany will likely exceed its twenty percent by 2020 goal as early as 2011.<sup>49</sup> By 2020, conservative estimates show that Germany will source forty-seven percent of its electricity from renewable energy.<sup>50</sup> Thus, while honoring its Kyoto Protocol commitments, German energy projects have in turn bolstered the fifth largest economy in the world.<sup>51</sup> Spain made a commitment to reduce its carbon emissions by twenty percent from its 1990 levels by 2020, in line with the EU target.<sup>52</sup> Spain also committed to achieving twenty percent of its own final consumption and ten percent of its transport energy needs from renewable energy by 2020.<sup>53</sup> According to its 2005-2010 Renewable Energy Plan, Spain plans to deploy clean energy to meet 12.1% of its primary energy needs, 30.3% of electricity needs, and 5.83% of transportation fuel.<sup>54</sup> One of

Spain’s goals in its 2004-2012 Energy Efficiency Strategy is to reduce domestic energy intensity by 7.2% by 2012.<sup>55</sup>

If Singapore adopts Annex I status and follows in Germany and Spain’s carbon reduction footsteps, it could advance compliance in other developing countries such as Brazil, India, and China. These countries will face greater and different challenges in greenhouse gas reduction from Singapore due to their larger size and strong economies.<sup>56</sup> However, Singapore could establish the model and blueprint, which would help to change the playing field for non-Annex I Parties and encourage greater participation among those nations. Binding carbon emission reductions and carbon finance are only possible if countries take responsibility for their contributions to climate change, however small they are.

### CONCLUSION

In the UNFCCC, richer nations, mostly those in the EU, have assumed the role of Annex I Parties.<sup>57</sup> Singapore can and should become an Annex I nation so that it can fulfill a broader role on the global stage as a leader in greenhouse gas reduction. Singapore is the ideal candidate for graduating from Non-Annex I to Annex I. Its mature economy is ready to retool its electricity sector and to finance clean development mechanism projects. Singapore has national interests in safeguarding its borders from flooding and protecting the health of its citizens.<sup>58</sup> It has a stable government with a history of developing innovative laws and enforcing them.<sup>59</sup> As the international climate law community awaits 17th COP in Durban, South Africa, it should consider graduating a nation to Annex I status as a way to shift binding obligations from the Kyoto Protocol to a new international agreement between nations.



## Endnotes: The Singapore Workaround

<sup>1</sup> Cass R. Sunstein, *The World vs. the United States and China? The Complex Climate Change Incentives of the Leading Greenhouse Gas Emitters*, 55 UCLA L. REV. 1675 (1964).

<sup>2</sup> Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, 137 I.L.M. 22, <http://unfccc.int/resource/docs/convkp/kpeng.pdf>.

<sup>3</sup> *Parties & Observers*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, [http://unfccc.int/parties\\_and\\_observers/items/2704.php](http://unfccc.int/parties_and_observers/items/2704.php) (last visited Feb. 15, 2011) [hereinafter *Parties & Observers*].

<sup>4</sup> United Nations Framework Convention on Climate Change, Copenhagen, Den., Dec. 7-18, 2009, *Proposal from Malta to Amend Annex I to the Convention*, 2, U.N. Doc. FCCC/CP/2009/2 (May 13, 2009), <http://unfccc.int/resource/docs/2009/cop15/eng/02.pdf> (noting that Malta has not set a binding greenhouse gas reduction commitment). In 1997, the UNFCCC Parties granted their approval for six nations to be included as Annex I Parties. Most were new countries that gained independence within that decade and others had not previously been associated with the Annex I process. These countries are Croatia, Liechtenstein, Monaco, Slovenia, the Czech Republic, and Slovakia, with the last two replacing Czechoslovakia. See United Nations Framework Convention on Climate Change, Conference of the Parties, Third Session, Kyoto, Japan, Dec. 1-11, 1997, *Amendments to the List in Annex I to the Convention Under Article 4.2(f) of the Convention, dec. 4/CP.3, in Part Two: Action Taken by the Conference of the Parties at its Third Session*, U.N. Doc. FCCC/CP/1997/7/Add.1 (Mar. 25, 1998), <http://unfccc.int/resource/docs/cop3/07a01.pdf>.

<sup>5</sup> Sikina Jinnah et al., *Tripping Points: Barriers and Bargaining Chips on the Road to Copenhagen*, 4 ENVTL. RES. LETTERS 034003 (2009), [http://iopscience.iop.org/1748-9326/4/3/034003/pdf/1748-9326\\_4\\_3\\_034003.pdf](http://iopscience.iop.org/1748-9326/4/3/034003/pdf/1748-9326_4_3_034003.pdf).

<sup>6</sup> *Statement by the Hon. Lee Hsien Loong, Prime Minister of Singapore at the Annual Meetings of the Boards of Governors of the International Monetary Fund and the World Bank Group*, INT’L MONETARY FUND (Sept. 19, 2006), <http://www.imf.org/external/am/2006/speeches/pr04e.pdf>.

<sup>7</sup> *IMF Chief Highlights Need for Strong Partnership with Asia*, IMF SURVEY MAGAZINE (Feb. 09, 2011), <http://www.imf.org/external/pubs/ft/survey/so/2011/new020911a.htm>.

<sup>8</sup> Rachel Ward Saltzman, *Distributing Emissions Rights in the Global Order: The Case for Equal Per Capita Allocation*, 13 YALE HUM. RTS. & DEV. L.J. 281 (2010).

<sup>9</sup> NAT’L ENV. AGENCY, SINGAPORE’S SECOND NATIONAL COMMUNICATION: UNDER THE UNITED FRAMEWORK CONVENTION ON CLIMATE CHANGE 4 (Nov. 12, 2010), <http://unfccc.int/resource/docs/natc/sinn2.pdf> [hereinafter *SSNC*].

<sup>10</sup> *Id.* at 3.

<sup>11</sup> *Trust*, SINGAPORE ECON. DEV. BOARD, [http://www.sedb.com/edb/sg/en\\_uk/index/why\\_singapore/trust.html](http://www.sedb.com/edb/sg/en_uk/index/why_singapore/trust.html) (last updated Apr. 29, 2009).

<sup>12</sup> See GRACIELA CHICHILNISKY & KRISTEN A. SHEERAN, *SAVING KYOTO* 56-57 (Kate Parker ed., 2009); DAVID HUNTER ET AL., *INTERNATIONAL ENVIRONMENTAL LAW AND POLICY* 667-74 (Robert C. Clark et al. eds., 2007).

<sup>13</sup> *Id.*

<sup>14</sup> *Id.*

<sup>15</sup> CHICHILNISKY, *supra* note 12; U.N. Framework Convention on Climate Change art. 4(1)-(2), May 9, 1992, 1771 U.N.T.S. 107 [hereinafter *UNFCCC*].

<sup>16</sup> See HUNTER ET AL., *supra* note 12, at 681.

<sup>17</sup> Alan Manne & Richard Richels, *US Rejection of the Kyoto Protocol: The Impact on Compliance Costs and CO<sub>2</sub> Emissions*, 32 ENERGY POL’Y 447 (2004).

<sup>18</sup> Jennifer Morgan, *Reflections on the Cancún Agreements*, WORLD RESOURCES INST. (Dec. 14, 2010), <http://www.wri.org/stories/2010/12/reflections-cancun-agreements>.

<sup>19</sup> Marianne Lavelle, *Toward a Stalemate in Copenhagen*, CTR. FOR PUB. INTEG. RY (Nov. 5, 2009), [http://www.publicintegrity.org/investigations/global\\_climate\\_change\\_lobby/overview/](http://www.publicintegrity.org/investigations/global_climate_change_lobby/overview/).

<sup>20</sup> The Montreal Protocol on Substances that Deplete the Ozone Layer arts. 2H(5), 5, Sept. 16, 1987, 1522 U.N.T.S. 3; *Exemption Information*, UNEP OZONE SECRETARIAT, [http://ozone.unep.org/Exemption\\_Information/](http://ozone.unep.org/Exemption_Information/) (last updated 2004).

<sup>21</sup> Elizabeth Ladt & George David Banks, *Reflections on COP-16: Time to Move Past the United Nations Framework Convention on Climate Change*, ENERGY EFFICIENCY & CLIMATE CHANGE LAW (DEC. 14, 2010), <http://www.encycylaw.com/2010/12/ladt-and-banks/>.

<sup>22</sup> INT’L MONETARY FUND, WORLD ECONOMIC OUTLOOK: RECOVERY, RISK, AND REBALANCING 62, 171 (2010), <http://www.imf.org/external/pubs/ft/weo/2010/02/pdf/text.pdf>.

<sup>23</sup> SSNC, *supra* note 9, at 2.

<sup>24</sup> *Id.* at 14.

<sup>25</sup> *Singapore: Data*, THE WORLD BANK, <http://data.worldbank.org/country/singapore> (last visited Feb. 4, 2011).

<sup>26</sup> *AMB Country Risk Report*, A.M. BEST 2-3 (2010), <http://www3.ambest.com/ratings/cr/reports/Singapore.pdf>.

<sup>27</sup> See UNFCCC, *supra* note 15, at pmb1 (calling for “the widest cooperation by all countries . . . in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions . . . .”); Terry Barker et al., *Summary for Policymakers*, in CLIMATE CHANGE 2007: MITIGATION OF CLIMATE CHANGE, CONTRIBUTION OF WORKING GROUP III TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (Bert Metz et al. eds., 2007) (estimating future energy infrastructure investment decisions from 2007 to 2030 to total twenty trillion US dollars), <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-spm.pdf>.

<sup>28</sup> SSNC, *supra* note 9, at 57.

<sup>29</sup> *Id.* at 57 (considering that the CEPO was set up administratively in April 2007 with S\$170 million to coordinate research and test-bedding and leverage other government agencies to grow the clean energy industry).

<sup>30</sup> *Id.* at 56 (considering the Research Fund for the Built Environment is a S\$50 million fund from the Ministry of National Development (“MND”) funds projects such as including sustainable development projects such as integrating solar technologies into building facades).

<sup>31</sup> *Id.* at 53.

<sup>32</sup> Kyoto Protocol, *supra* note 2, art. 12.

<sup>33</sup> See UNFCCC, *supra* note 15, art. 12(2) (“The purpose of the clean development mechanism [is] to assist parties not included in Annex I in achieving sustainable development . . . and to assist parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments . . . .”).

<sup>34</sup> *Registration*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, [\[unfccc.int/Statistics/Registration/NumOfRegisteredProjByHostPartiesPieChart.html\]\(http://unfccc.int/Statistics/Registration/NumOfRegisteredProjByHostPartiesPieChart.html\) \(last visited Feb. 4, 2011\) \(considering Brunei Darussalam and Myanmar no projects, Laos—one, Singapore—two, Cambodia—four, Thailand—forty-two, Philippines—forty-eight, Vietnam—forty-eight, Indonesia—fifty-six, and Malaysia—eighty-eight project\(s\) out of 2,781 worldwide\); \*Member Countries\*, ASS’N OF S. E. NATIONS, <http://www.aseansec.org/74.htm> \(last visited Feb. 4, 2011\).](http://cdm.</a></p></div><div data-bbox=)

<sup>35</sup> *S’pore Backs Push for Climate Agreement*, MINISTRY OF FOREIGN AFFAIRS, SINGAPORE (Dec. 17, 2009), [http://app.mfa.gov.sg/2006/press/view\\_press.asp?post\\_id=5681](http://app.mfa.gov.sg/2006/press/view_press.asp?post_id=5681); *Senior Minister S Jayakumar Addresses the Delegates at the High-Level Plenary Session of the 16th UNFCCC Conference of the Parties (COP-16) in Cancun, Mexico*, MINISTRY OF FOREIGN AFFAIRS, SINGAPORE (Sep. 12, 2010), [http://app.mfa.gov.sg/2006/lowRes/press/view\\_press\\_print.asp?post\\_id=6603](http://app.mfa.gov.sg/2006/lowRes/press/view_press_print.asp?post_id=6603) [hereinafter *Jayakumar*].

<sup>36</sup> Letter from Chew Tai Soo, Ambassador-at-large & Chief Negotiator for Climate Change, Sing., to H.E. Yvo de Boer, Exec. Sec’y, Secretariat of the U.N. Framework Convention on Climate Change, (Jan. 28, 2010), [http://unfccc.int/files/meetings/cop\\_15/copenhagen\\_accord/application/pdf/singaporecphaccord.pdf](http://unfccc.int/files/meetings/cop_15/copenhagen_accord/application/pdf/singaporecphaccord.pdf)

<sup>37</sup> *Jayakumar*, *supra* note 35.

<sup>38</sup> *Id.*

<sup>39</sup> *Climate Change and Energy Efficiency*, NAT’ ENV’T AGENCY, [http://app2.nea.gov.sg/topics\\_climatechange.aspx](http://app2.nea.gov.sg/topics_climatechange.aspx) (last updated May 08, 2008).

<sup>40</sup> See MINISTRY OF THE ENV’T, SINGAPORE’S INITIAL NATIONAL COMMUNICATION: UNDER THE UNITED NATION FRAMEWORK CONVENTION ON CLIMATE CHANGE, 35 U.N. Doc. SGP/COM/1 B (Aug. 21, 2000) (explaining that “Singapore has developed many policies and implemented many measures that have helped to mitigate the increase in greenhouse gas emission.”), <http://unfccc.int/resource/docs/nat/sinncl.pdf> [hereinafter SINC]; SSNC, *supra* note 9, at 36 (“The predominant greenhouse gas in Singapore is carbon dioxide (“CO<sub>2</sub>”) that arises from the combustion of fossil fuels. While Singapore faces many geographical constraints that limit our energy options, we have developed policies and implemented measures that help to mitigate the increase in greenhouse gases.”).

<sup>41</sup> SINC, *supra* note 40, at 17.

<sup>42</sup> SSNC, *supra* note 9, at i.

<sup>43</sup> David Fogarty, *Don’t Judge States on Wealth and Emissions: Climate Envoy*, REUTERS (Feb. 21, 2011), <http://www.reuters.com/article/2009/02/21/us-climate-singapore-idUSTRE51K0TR20090221>.

<sup>44</sup> *Id.*

<sup>45</sup> SSNC, *supra* note 9, at 20.

<sup>46</sup> See *Kyoto Protocol Bodies*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, [http://unfccc.int/kyoto\\_protocol/kyoto\\_protocol\\_bodies/items/2772.php](http://unfccc.int/kyoto_protocol/kyoto_protocol_bodies/items/2772.php) (last visited Feb. 4, 2011).

<sup>47</sup> MINISTERIO DE MEDIO AMBIENTE, CUARTA COMUNICACIÓN NACIONAL DE ESPAÑA: CONVENCION MARCO DE LAS NACIONES UNIDAS SOBRE EL CAMBIO CLIMÁTICO (Mar. 23, 2006), <http://unfccc.int/resource/docs/nat/spanc4.pdf>.

<sup>48</sup> *International Climate Policy*, FED. MINISTRY FOR THE ENV’T, NATURE CONSERVATION & NUCLEAR SAFETY (Apr. 2010), [http://www.bmu.de/english/climate/international\\_climate\\_policy/doc/41824.php](http://www.bmu.de/english/climate/international_climate_policy/doc/41824.php).

<sup>49</sup> Arne Jungjohann & Bjorn Jahnke, *Europe: Creating Jobs with Renewable Energies*, HEINRICH BÖLL STIFTUNG 2 (May 19, 2009), [http://boell.org/downloads/Creating\\_Green\\_New\\_Jobs\\_with\\_Renewable\\_Energies1.pdf](http://boell.org/downloads/Creating_Green_New_Jobs_with_Renewable_Energies1.pdf).

<sup>50</sup> *Id.*

<sup>51</sup> *Id.* at 1.

<sup>52</sup> Directive 2009/28, of the European Parliament and of the Council of 23 April 2009 on the Promotion of the Use of Energy From Renewable Sources and Amending and Subsequently Repealing Directives 2001/77/EC and 2003/30/EC, 2009 O.J. (L 140) 16, 46, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:EN:PDF>.

<sup>53</sup> *Renewable Policy Review: Spain*, EUR. RENEWABLE ENERGY COUNCIL 4, [http://www.erec.org/fileadmin/erec\\_docs/Projcet\\_Documents/RES2020/SPAIN\\_RES\\_\\_Policy\\_review\\_\\_09\\_Final.pdf](http://www.erec.org/fileadmin/erec_docs/Projcet_Documents/RES2020/SPAIN_RES__Policy_review__09_Final.pdf) (last visited Feb. 4 2011).

<sup>54</sup> *Id.*

<sup>55</sup> KATE GORDON, JULIAN L. WONG, & JT McLAIN, CTR. FOR AM. PROGRESS, OUT OF THE RUNNING? HOW GERMANY, SPAIN, AND CHINA ARE SEIZING THE ENERGY

OPPORTUNITY AND WHY THE UNITED STATES RISKS GETTING LEFT BEHIND (2010), [http://www.americanprogress.org/issues/2010/03/pdf/out\\_of\\_running.pdf](http://www.americanprogress.org/issues/2010/03/pdf/out_of_running.pdf).

<sup>56</sup> *Compare* WILLIAM CHANDLER ET AL., CLIMATE CHANGE MITIGATION IN DEVELOPING COUNTRIES: BRAZIL CHINA, INDIA, MEXICO, SOUTH AFRICA, AND TURKEY, at iii-v (2002), [http://www.pewclimate.org/docUploads/dev\\_mitigation.pdf](http://www.pewclimate.org/docUploads/dev_mitigation.pdf); with ASIAN DEV. BANK, THE ECONOMICS OF CLIMATE CHANGE IN SOUTHEAST ASIA: A REGIONAL VIEW, at xvii-xxx (2009), <http://www.adb.org/documents/books/economics-climate-change-sea/Economics-Climate-Change.pdf>.

<sup>57</sup> *List of Annex I Parties to the Convention*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, [http://unfccc.int/parties\\_and\\_observers/parties/annex\\_i/items/2774.php](http://unfccc.int/parties_and_observers/parties/annex_i/items/2774.php) (last visited Feb. 4, 2011).

<sup>58</sup> *See* SSNC, *supra* note 9, at 30.

<sup>59</sup> *Trust*, *supra* note 11.