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# Legislating Climate Change on a National Level

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**C**limate change is a global problem. Worldwide emissions cannot be curbed to the extent required without meaningful contributions from all major economies. The international community's response to climate change has therefore, quite rationally, focused on globally coordinated collective action.

Yet national legislation is as critical to combating climate change as a successful international agreement. International commitments have little meaning unless they are underpinned by legislative action at the national level.

More subtly, national legislation can alter the dynamics at the international level. Domestic debate can help to advance national positions and give leaders the confidence to go further in the formal UN negotiations. These dynamics are particularly important at a time when international progress is slow.



a difference. This paper summarizes the highlights of the study. The full results are available in Townshend et al.<sup>3</sup>

## Climate Change Legislation at a Glance

Our study covered 155 existing climate change-related laws, an average of just under 10 per country, that were “on the books” by early 2011. The fairly strict assessment criteria we applied mean that this is almost certainly an underestimate of actual climate change regulation.

In particular, the inventory does not include laws still under consideration, although many were identified in the course of the research and they add to a general sense of parliamentary activism. The focus is on legislation at the federal level. This is a significant omission in countries with federal structures (e.g., Brazil, India, and South Africa) and, within this category, in countries where federal legislation has been slow when compared with activity at the sub-national level (e.g., the United States and Canada).

In early 2011, the United Kingdom had the most climate change-related laws with 22, and South Africa had the fewest with just three. However, the number of laws relating to climate change is not a perfect indicator of the breadth and depth of a country’s legislative response. Some laws are integrative while others are very narrow in scope.

The first law referring specifically to climate change was passed in 1998 by Japan (the Law Concerning the Promotion of Countermeasures to Cope with Global Warming), but the vast majority of legislation relating to climate change has been introduced since 2008.

In the majority of countries it is possible to identify “flagship” legislation: a key piece of legislation through which lawmakers have attempted to put their stamp on climate change policy (Table 1). These are often integrative laws that bring together the various strands of preexisting and new climate change regulation under one legislative um-

*View of the GLOBE Copenhagen Legislators Forum in the Second Chamber of the Folketing, the Danish Parliament in October 2009.*

To better understand these trends, we have inventoried climate change legislative action in 16 major world economies. They include the G8 + 5 countries, as well as Indonesia, South Korea, and the European Union. We hope that this inventory, which was put together in close collaboration with senior parliamentarians in the countries concerned, can help to identify gaps and formulate best practice, establishing what has worked well and could be replicated elsewhere.

In numerical terms the results of the survey are encouraging. We identified 155 laws, regulations, policies, and decrees of comparable status that relate to climate change, energy efficiency, low-carbon energy, sustainable transport, forestry management, or adaptation to climate change. Despite setbacks at the international level, national legislators are beginning to act on climate change, realizing that doing so is in their national self-interest and that the co-benefits of increased energy security, improved resource efficiency, increased competitiveness, and better air quality are potentially vast.

Legislative action is not restricted to developed countries. Some of the most encouraging developments take place in the “+5” emerging economies of Brazil, China, India, Mexico, and South Africa.

Brazil already has a very low-carbon energy mix—it gains most of its electricity from hydropower and relies heavily on bio-ethanol for transport—and is now beginning to tackle its main source of greenhouse gas emissions: defores-

tation. China has just released its 12th Five Year Plan, which includes specific targets to help meet its goal of reducing the carbon intensity of gross domestic product (GDP) by 40 to 45 percent from 2005 levels by 2020. India has set up an Expert Group on Low Carbon Strategy for Inclusive Growth, the recommendations of which will form a central theme of India’s 12th Five Year Plan in 2012. Mexican legislators are examining all existing energy-related laws to establish what amendments need to be made to make them consistent with climate change goals, in addition to developing comprehensive climate change legislation. And South Africa has issued a White Paper on climate change with a view to passing a climate change law ahead of the Durban climate change conference later this year.

Domestic action has yet to be translated into progress in the international negotiations, and added together the national targets are not yet sufficient to stabilize global warming at 2°C or less above preindustrial levels, the widely agreed target of international climate diplomacy.<sup>1,2</sup>

Moreover, putting laws on the statute books is different from implementing them and achieving the targets set therein. Policy delivery is a concern particularly for integrative, aspirational laws, which set a framework for action but leave the design of concrete policies to secondary legislation.

Further effort is clearly needed. However, the inventory shows that national legislation is increasingly making

**Table 1. Flagship Legislation**

Country	Name of law	Main purpose	Date passed
Brazil	National Policy on Climate Change (NPCC)	The NPCC is based on Brazil's international commitment with the UNFCCC and incorporates all previous related government instruments (i.e., the National Plan on Climate Change, the National Fund on Climate Change, and others).	2009
Canada	Kyoto Protocol Implementation Act	The purpose of the act is to ensure that Canada takes effective and timely action to meet its obligations under the Kyoto Protocol.	2007
China	National Climate Change Programme 2007	<p>This program focuses on five key areas:</p> <ul style="list-style-type: none"><li>(i) greenhouse gas (GHG) mitigation;</li><li>(ii) adaptation;</li><li>(iii) science and technology;</li><li>(iv) public awareness; and</li><li>(v) institutions and mechanisms.</li></ul> <p>Measures include strengthening the existing energy legal system, improving the national energy program, implementing the Renewable Energy Law, promoting favorable conditions for renewable energy development and GHG mitigation, stimulating energy price reform, optimizing the energy mix, and promoting innovation and efficiency improvements in various power-generating technologies (renewable and nonrenewable), including nuclear power.</p>	2007 (revised in 2008 and 2009)
European Union	Climate and Energy Package (CARE)	<p>The core of the package comprises four pieces of complementary legislation:</p> <ul style="list-style-type: none"><li>(i) revision and strengthening of the EU Emissions Trading Scheme (ETS);</li><li>(ii) effort sharing: reducing GHG emissions fairly, taking into account the relative wealth of the EU Member States;</li><li>(iii) a common framework for the production and promotion of energy from renewable sources; and</li><li>(iv) a legal framework for the environmentally safe geological storage of CO<sub>2</sub>.</li></ul>	2008
France	Grenelle I and II	Grenelle laws include comprehensive policies on emissions targets, renewable energy, energy efficiency, and research and development.	2009 and 2010
Germany	Integrated Climate and Energy Programme	This program aims to cut greenhouse gas emissions by 40 percent from 1990 levels by 2020. The package focuses strongly on the building sector. The German government approved a new climate package of measures in June 2008 that focuses on the transport and construction sectors.	2007 (updated 2008)
India	National Action Plan on Climate Change (NAPCC)	India's NAPCC outlines existing and future policies and programs directed at climate change mitigation and adaptation. The plan sets out eight "national missions" running up to 2017.	2008

**Table 1. Flagship Legislation**

Country	Name of law	Main purpose	Date passed
Indonesia	Presidential Regulation on the National Council for Climate Change (NCCC)	The council coordinates climate change policymaking. It is composed of 17 ministers and chaired by the president. The NCCC is assisted by the following working units: adaptation; mitigation; transfer of technology; funding; post-2012; and forestry and land use conversion.	2008
Italy	Climate Change Action Plan (CCAP)	Italy's CCAP is a comprehensive action plan to help Italy comply with GHG reduction targets under the Kyoto Protocol.	2007
Japan	Law Concerning the Promotion of Measures to Cope with Global Warming	This law establishes the Council of Ministers for Global Environmental Conservation; develops the Kyoto Achievement Plan; and stipulates the establishment and implementation of countermeasures by local governments.	1998 (amended 2005)
Mexico	Inter-Secretariat Commission on Climate Change; Law for the Use of Renewable Energies and for the Finance of the Energy Transition (LUREFET)	The commission is responsible for coordinating national policies for climate change mitigation and adaptation. LUREFET seeks to reduce Mexico's dependence on hydrocarbons by promoting renewable energy sources and clean technology for electricity generation. It also establishes the National Strategy for the Energy Transition and Sustainable Energy Use and the Energy Transition Fund.	2005 and 2008
Russia	Climate Doctrine	The doctrine sets strategic guidelines for the development and implementation of future climate policy, covering issues related to climate change and its impacts. It focuses on the following areas: improving research to better understand the climate system and assess future impacts and risks; developing and implementing short- and long-term measures for mitigation and adaptation; and engagement with the international community.	2009
South Africa	Vision, Strategic Direction and Framework for Climate Policy	The policy is the basis of the draft "Zero" Climate Change Policy, to be converted into law by 2012. The document results from a public consultation process with civil society and business and is based on the findings of the Long-Term Mitigation Scenario Process (LTMS) on Climate Change.  The policy proposes action in the following areas: (i) GHG emission reductions; (ii) intensification of current initiatives; (iii) "business unusual" call for action; (iv) preparing for the future; (v) vulnerability and adaptation; and (vi) alignment, coordination, and cooperation among stakeholders.	2008
South Korea	Framework Act on Low Carbon Green Growth	This law creates the legislative framework for mid- and long-term emissions reduction targets, cap-and-trade, carbon tax, carbon labeling, carbon disclosure, and the expansion of new and renewable energy.	2009



**Table 1. Flagship Legislation**

Country	Name of law	Main purpose	Date passed
United Kingdom	Climate Change Act	The Climate Change Act provides a long-term framework for improving carbon management, promoting the transition to a low carbon economy, and encourages investment in low carbon goods. It includes specific emissions reduction targets (at least 80 percent reduction from 1990 levels by 2050) and creates five-yearly carbon budgets.	2008
United States	No integrative federal climate change legislation.  Most meaningful measures so far: Executive Order 13514: Federal Leadership in Environmental, Energy and Economic Performance; American Recovery and Reinvestment Act.	Executive Order 13514 makes GHG emission management a priority for federal agencies and establishes reporting requirements with detailed targets and deadlines. The focus is on transportation, overall energy use, and procurement policies. All federal agencies are required to develop, implement, and annually update a "Strategic Sustainability Performance Plan" that prioritises agency actions based on life-cycle return on investment.  The American Recovery and Reinvestment Act authorizes a stimulus package that supports new and existing renewable energy and energy efficiency programs to the value of USD 18.6 billion.	2009

brella, as has occurred in Brazil, France, South Korea, and the United Kingdom. In China and India, the five-year plans serve a similar purpose.

However, equally important from the point of view of implementation is the larger number of more narrow laws that contain specific policy measures to increase energy efficiency, promote renewable energy, or reduce greenhouse gas emissions. There may still be question marks about the effectiveness of these measures—of, for example, an energy efficiency standard or a feed-in tariff—but they demonstrate the willingness of lawmakers to move beyond aspiration and take concrete action.

### Economic Factors

The primary motivation for climate change legislation was often economic. For example, South Korea's Green Growth Law, which includes targets



*Facing the camera: Hon Barry Gardiner MP, Vice President of GLOBE International & former UK Minister for Environment, Senator Manlio Fabio Beltrones Rivera, President of the Senate of Mexico and Senator Yeidckol Polevnsky, President of the Senate Committee for Competitiveness and President of GLOBE Mexico, Senator Serys Shessarenko, President of the Senate of Brazil and President of GLOBE Brazil at the GLOBE Mexico City Legislators Forum, Senate of Mexico, December 2010.*



*Cooling towers from the Byron IL nuclear Power Plant.*

for emissions reduction and creates the legislative platform for the move to a low-carbon economy, was at least partly driven by the concern to protect Korea's competitiveness against the backdrop of the likely imposition of carbon tariffs in Korea's main export markets. At the same time, South Korea saw the opportunity to kick-start the economy through "green" fiscal stimulus, investing in low-carbon infrastructure and improving competitiveness by reducing energy costs.

Climate finance opportunities relating to the Kyoto mechanisms were an important driver in Russia, which has a large surplus of credits following its industrial collapse in the 1990s. Finance was also important, at least to some extent, in Indonesia, where forestry legislation has been facilitated by a generous grant from Norway.

Activity in the United States has been primarily about energy security. One of the biggest political issues in the United States is how to reduce reliance on foreign oil. Thus, many of the proposed legislative measures have included support for domestic sources of energy (offshore drilling for oil and gas,

support for nuclear energy, renewable energy, and energy efficiency).

Employment and the need to create jobs sometimes featured in climate change legislation. The desire to make

### **One of the biggest political issues in the United States is how to reduce reliance on foreign oil.**

climate change a story of employment and growth is real and credible,<sup>4,5</sup> but few laws contain many direct employment measures. Two examples are the U.S. American Recovery and Reinvestment Act and South Korea's Green Growth Law, which includes measures designed to gain a competitive advantage in low-carbon industries.

#### **International Leadership**

The passage of climate change legislation has often been linked to a major international event in the country, which put countries into a position of

international leadership. For example, Japan passed its first climate-related law with the help of momentum generated by hosting the United Nations (UN) climate negotiations in Kyoto, and Indonesia launched its National Action Plan—Addressing Climate Change when it hosted the 13th Conference of the Parties (COP13) in Bali in 2007. Mexico is currently working to pass comprehensive national and regional climate change legislation, initially driven by its hosting of COP16 in Cancún in late 2010, and South Africa is debating a Green Paper on climate change ahead of its presidency of the UN Framework Convention on Climate Change (UNFCCC).

In the United Kingdom, the 2005 Gleneagles G8 Summit, when the former UK Prime Minister Tony Blair put climate change on the agenda of G8 leaders for the first time, is often cited as a major influence on the UK's 2008 Climate Change Act.

The causality here is not clear. Perhaps a desire to advance the climate change agenda results simultaneously in domestic action and a willingness to provide international leadership. More





*Himalayan landscape by Paro-Thimphu district border, central Bhutan.*

likely, the prestige that comes with hosting the UN negotiations or major international event, and the desire to demonstrate credible leadership by “walking the walk,” have encouraged and helped facilitate domestic action.

The EU is an interesting variation on this theme. Here the clear desire to show leadership was primarily inward-looking with the motivation, at least in part, to use climate change as a way to advance “project Europe,” giving the EU a new, environmental purpose and “green growth” vision for the 21st century. However, the EU’s internal ambition also carried over into the international stage, with a clear desire to position the EU as a climate change leader.

### **Vulnerability**

Recognition of a country’s vulnerability to climate change has resulted in laws with a heavy emphasis on adaptation. This is particularly the case in developing countries. For example, South Africa’s Vision, Strategic Direction and Framework for Climate Policy mandates government departments to include adaptation strategies as key

performance indicators, and to include better early warning and disaster risk reduction systems. India’s National Action Plan on Climate Change includes a National Mission for Sustaining the Himalayan Ecosystem to protect India’s water supply alongside a National Mission for Sustainable Agriculture. Similar observations can be made about most other developing countries.

Among developed countries, the UK’s Climate Change Act includes detailed provisions on adaptation and measures to understand climate change risks. However, this was not the primary motivation for the legislation, and many adaptation provisions were added fairly late in the legislative process.

### **Pressure of the UN Process**

Although the UN negotiations are often criticised as slow and unwieldy, it is likely that the much-hyped UN negotiations in Copenhagen in December 2009 (UNFCCC COP15) were a major incentive for countries to pass domestic legislation. The conference was scheduled to be the conclusion of the post-2012 negotiations and there was im-

mense public and diplomatic pressure on countries to make ambitious commitments. It is probably no coincidence that the vast majority of “flagship” climate legislation was passed in advance of Copenhagen during 2008 and 2009.

## **Regulatory Approaches**

### **Objectives**

The international climate change architecture is target-oriented and science-based. The ultimate goal of UNFCCC is to “prevent dangerous anthropogenic interference with the climate system.” Working back from its interpretation of “dangerous”—a political decision, but based on scientific evidence (e.g. Smith et al.<sup>6,7</sup>)—negotiators devise emissions targets based on the scientific probabilities they offer for achieving the desired temperature or atmospheric concentration goal (e.g., Bowen and Ranger<sup>2</sup>).

This approach is, by and large, also reflected in national legislation. The flagship laws, in particular, tend to be centered on medium- or long-term





Official White House Photo by Pete Souza

Indian Prime Minister Manmohan Singh (blue) and Indian Minister of Environment and Forests Jairam Ramesh (behind) during a multilateral meeting with U. S. President Barack Obama, Chinese Premier Wen Jiabao, Brazilian President Lula da Silva and South African President Jacob Zuma during the United Nations Climate Change Conference in Copenhagen, Denmark, Dec. 18, 2009.

emissions reduction targets. In the case of industrialized countries they are often binding absolute emission reduction targets. For example, the United Kingdom has a binding absolute emissions reduction target of at least 34 percent below 1990 levels by 2020, 50 percent by 2027, and at least 80 percent below 1990 levels by 2050. These targets were derived explicitly through this scientific approach.<sup>8</sup>

In developing countries, the emissions objectives are generally more aspirational and often relate to intensity or efficiency (e.g., the carbon and energy intensity targets in China and India), reflecting the principle of “common but differentiated responsibility” enshrined in the UNFCCC. Others focus on emissions pathways relative to business as usual (BAU), for example Mexico’s commitment to reduce its emissions by 30 percent below BAU by 2020 and South Africa’s target to reduce emissions by 34 percent below BAU by 2020 and by 42 percent below BAU by 2025 (both conditional on receiving financial and technical support from industrialised countries).

However, some countries have taken a different approach. For example

the United States and, to some extent, Germany have focused on a technology-based approach, which includes incentives for the promotion of new renewable and low-carbon energy technologies. Germany’s feed-in tariff for renewable energy has resulted in a massive increase in renewable capacity in

the country, complemented by an overarching and (in the case of installations covered by the EU Emissions Trading Scheme) binding emission reduction target. In the United States, the USD 16.8 billion allocation toward renewable energy and energy efficiency has similar technology objectives, but there



Mitsubishi MiEV, the world’s first fully electric car, presented in Bavaria, Germany on May 2, 2011.



*United States President Barack Obama signs into law the American Recovery and Reinvestment Act of 2009 as Vice President Joe Biden looks on.*

are no accompanying targets for emissions reduction in the American Recovery and Reinvestment Act.

### Priorities

Sector priorities tended to differ between countries, and they often reflected the main emissions sources in the country (e.g., deforestation in Bra-

zil and Indonesia; energy generation elsewhere).

Renewable energy and, in particular, energy efficiency featured prominently and are covered in legislation, to varying degrees, in all 16 countries. This reflects the fact that, whatever the motivation for implementing climate-related laws and the angle of any political opposition to regulating carbon, saving energy enjoys broad support: It reduces costs, increases competitiveness, reduces the demand for energy, thus increasing energy security, and reduces greenhouse gas emissions at the same time.

Japan has a history of strong energy efficiency legislation, with its first energy efficiency law (the Law Concerning the Rational Use of Energy) passed in 1979. This law has been amended and updated and remains central to Japan's energy legislation today. India introduced Energy Conservation Awards in 1993 to encourage and recognize in-

dustrial energy efficiency. China passed its Energy Conservation Law in 1997, and in the 11th Five-Year Plan, it set a target to reduce the energy intensity of its gross domestic product (GDP) by 20 percent from 2005 levels by 2010. The 12th Five-Year Plan, published in March 2011, includes a further targ

**Japan has a history of strong energy efficiency legislation, with its first energy efficiency law passed in 1979.**

et to reduce the energy intensity of GDP by 16 percent by 2015.

In contrast, the relationship between land use and land use change was an area with relatively little legislation. Adaptation featured in most countries, but in most cases not as prominently as



*Solar powered street lamps, Yokohama, Japan.*



Table 2. Coverage of Legislation							
Country	Pricing carbon	Energy efficiency	Renewable energy	Forestry	Other land use	Transport	Adaptation
Brazil	X	X	X	M	X	X	O
Canada		M	O	X	X	X	
China		M	X	X	X	X	X
European Union	M	X	X	O	O	X	O
France	X	M	X		O	X	X
Germany	X	M	X			X	
India		M	X	X	X	X	X
Indonesia	X	X	X	M	X	X	X
Italy	X	M	X	O		X	
Japan	X	M	X	X	X	X	X
Mexico	X	X	M	X	X	O	O
Russia		M	O	O			X
South Africa	X	X	M			X	X
South Korea	M	X	X	X	X	X	X
United Kingdom	M	X	X			X	O
United States		X	M	O	O	X	
<b>Key</b> M = Main Focus    X = Detailed Coverage    O = Some Coverage							

mitigation. Table 2 summarizes the coverage of legislation in the study countries, including identifying the main focus.

### Policies and Measures

It has become customary to classify carbon management policies into three broad areas: (i) measures to put a price on carbon; (ii) measures to overcome energy efficiency barriers; and (iii) measures that promote technological change.<sup>9</sup> The three approaches are incorporated to varying degrees in legislation.

There is widespread endorsement of market instruments to put a price on carbon. “Cap-and-trade” is the core mechanism for achieving emissions reduction in the EU and it has featured

strongly in laws in Brazil and South Korea, as well as draft legislation in Japan, Mexico, and, temporarily, the United States. China is also planning to pilot emissions trading to help deliver its carbon intensity target under the 12th Five-Year Plan.

## “Cap-and-trade” is the core mechanism for achieving emissions reduction in the EU.

While most countries have provisions on renewable energy, their approaches range from feed-in tariffs (for example, in Germany) to renewable energy standards (for example, in the United Kingdom), subsidies, and tax credits.

Education features in legislation and policy in Brazil, China, France,

Indonesia, the United Kingdom, and elsewhere, recognizing the importance of a well-informed public to maximize buy-in.

It is not possible to gauge the effectiveness of the policies and measures in place without detailed analysis. There

is evidence from a handful of academic studies<sup>10,11</sup> and official monitoring reports<sup>12, 13</sup> that policy delivery often falls short of expectations. While this is no different from other areas of public policy, it speaks to the need for close monitoring, independent scrutiny, and a careful evaluation of climate change policies.





*Oil pumps in West Siberia.*

To enhance delivery, many countries have set up new institutions or cross-governmental committees to oversee climate policy. For example, Brazil has created an Inter-ministerial Committee on Climate Change; China has established the National Coordination Committee on Climate Change, chaired by the prime minister; India has a Council on Climate Change, also chaired by the prime minister; Indonesia has created a National Council for Climate Change involving 17 ministers and chaired by the president; Mexico, under a presidential decree, created an Inter-Secretariat Commission on Climate Change in 2005; and South Korea has formed a Presidential Committee on Green Growth. These initiatives demonstrate the seriousness with which climate change is taken and the necessity to coordinate climate change policy across ministerial portfolios.

## Partisanship

Climate change legislation tends to be bipartisan. In the United Kingdom,

EU, Brazil, and South Korea, flagship legislation was passed with support from the majority of the major political parties, including in many cases those not in government.

Even where legislation has stalled, as in the United States, opposition has come from across the political spectrum (for example from “rust belt” Democrats from and Republicans with links to the oil industry and other high-carbon industries).

The lead parliamentary committee through which legislation was processed often reflected the primary motivation for the legislation. In oil- and gas-rich Russia, for example, the responsibility for climate legislation was combined with that for natural resource management. In South Africa, where the adverse impacts of climate change are a key concern, parliamentary oversight rests with the Committee on Water and Environmental Affairs. The United Kingdom combined energy and environmental interests by creating a new government department, with its own select committee: the Department of Energy and Climate Change. In addi-

## Climate change legislation tends to be bipartisan.

tion, the cross-departmental Environmental Audit Committee keeps a close eye on climate change policy implementation in the larger setting of sustainable development.

Elsewhere, responsibility was spread across committees and, in some cases, interest groups to accommodate the broad scope of climate change legislation. In Brazil, the lead committee was a specially formed Mixed Committee on Climate Change, while in the United States the Committee on Energy and Commerce was the lead in the House of Representatives, with six committees sharing jurisdiction in the Senate (Energy and Natural Resources; Environment and Public Works; Foreign Affairs; Finance; Agriculture; and Commerce). The French “Comité National du Développement Durable et du Grenelle de l’Environnement” is composed of the Ministry of Environment, the interministerial delegate for sustain-

able development, and several groups comprising the private sector, nongovernmental organizations (NGOs), and union representatives.

In most countries, however, the lead was taken by committees with an environmental remit. This is the case, for example, in Canada (Environment Committee), China (National Peoples

change—are consistent. Given the projected increase in emissions, economic activity, and population, it is encouraging that much of the legislative activity is taking place in the larger developing countries.

Yet much remains to be done. The implementation of the climate laws now on the books must be closely monitored.

## Climate change is being addressed through legislation, to varying extents, in all of the major economies covered by this study.

Congress Committee on Environment Protection and Resources Conservation), the EU (Committee on Environment and Public Health), Italy (Senate Environment Committee), and South Korea (Standing Committee on the Environment).

These bodies also have a major role to play in providing transparency, oversight, and accountability to climate policies. The credibility and success of both existing and forthcoming legislation will depend crucially on the ability of parliaments to provide independent scrutiny and ensure delivery.

### Conclusion

Our survey of climate change legislation in 16 countries paints a relatively encouraging picture. Climate change is being addressed through legislation, to varying extents, in all of the major economies covered by this study. Although the approach differs, according to national priorities and circumstances, the overall aims—to reduce greenhouse gas (GHG) emissions and prepare the country for the impacts of climate

Governments must increase transparency and parliamentarians must improve the effectiveness of their scrutiny function. In addition, in almost all countries, policy delivery will need to be strengthened. This will require strong political leadership and a constructive engagement with all stakeholders.

Ultimately, domestic action must be translated into progress in the international negotiations. Stabilizing global warming at 2°C or less will not be possible otherwise.

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### NOTES

1. United Nations Environment Programme, The Emissions Gap Report. Are Copenhagen Accord Pledges Sufficient to Limit Global Warming to 2°C or 1.5°C? (Nairobi: United Nations Environment Programme, 2010).

2. A. Bowen and N. Ranger, Mitigating Climate Change Through Reductions in Greenhouse Gas Emissions: The Science and Economics of Future Paths for Global Annual Emissions, Policy Brief, Grantham Research Institute on Climate Change and the Environment (London: London School of Economics, 2009).

3. T. Townshend, S. Fankhauser, A. Matthews, C. Feger, J. Liu, and T. Narciso, GLOBE Climate Legislation Survey, Globe International and Grantham Research Institute (London: London School of Economics, 2011). Available at: [www.globeinternational.org](http://www.globeinternational.org) (accessed April 2011).

4. Organization for Economic Cooperation and Development, Interim Report of the Green Growth Strategy: Implementing Our Commitment for a Sustainable Future, Meeting of the OECD Council at Ministerial Level, May 27–28, 2010, Organization for Economic Cooperation and Development, Paris.

5. S. Fankhauser, S. F. Schelleier, and N. Stern, "Climate Change, Innovation and Jobs," *Climate Policy*, 8(2008): 421–29.

6. J. B. Smith et al., "Assessing Dangerous Climate Change Through an Update of the Intergovernmental Panel on Climate Change (IPCC) 'Reasons for Concern,'" *Proceedings of the National Academy of Science of the United States of America* 106(11) (2009): 4133–37.

7. J. Smith et al., "Lines of Evidence for Vulnerability of Climate Change: A Synthesis," in *Climate Change: Impacts, Adaptation and Vulnerability*, ed. IPCC, Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge: Cambridge University Press, 2001).

8. S. Fankhauser, D. Kennedy, and J. Skea, "Building a Low-carbon Economy. The Inaugural Report of the UK Committee on Climate Change," *Environmental Hazards* 8(2009): 1–8.

9. N. Stern, *The Economics of Climate Change: The Stern Review* (Cambridge: Cambridge University Press, 2007).

10. B. Anderson, J. Leib, R. Martin, M. McGuigan, M. Muuls, L. de Preux, and U. Wagner, *Climate Change Policy and Business in Europe. Evidence from Interviewing Managers*, Occasional Paper No. 27. (London: Centre for Economic Performance, London School of Economics, 2010).

11. R. Martin, U. Wagner, and L. de Preux, *The Impacts of the Climate Change Levy on Business: Evidence From Microdata*, Working Paper No. 6, Grantham Research Institute on Climate Change (London: London School of Economics, 2009).

12. Committee on Climate Change, *Meeting Carbon Budgets—The Need for a Step Change. Progress Report to Parliament*, London, October 2009.

13. Committee on Climate Change, *Meeting Carbon Budgets—Ensuring a Low-Carbon Recovery. Second Progress Report to Parliament*, London, June 2010.