

## GREEN GROWTH AND THE CRISIS

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It did not take long after the first hints were given by governments that they were contemplating trillion-dollar economic stimulus packages, in addition to the bail-out packages they had already provided to their financial sectors, that exhortations for a complete re-orientation of spending patterns in support of “green” priorities took on the characteristics of a mantra. Borrowing from a term last heard during the economic crisis of the 1930s, environmental groups and even a number of prominent economists called for a “Green New Deal”, involving massive increases in spending on the environment, particularly investments in lower-carbon sources of energy, which would be matched in short time by international agreement on an ambitious post-2012 climate regime, and corresponding policy changes at the national level.

Judging from the pattern of stimulus spending so far, governments are heeding these calls. According to analysts for the HSBC Bank plc (Robins et al., 2009), of the nearly USD 2 800 billion in tax cuts, credits and extra spending announced by the world’s economies through the end of January 2009, more than USD 430 billion was targeted at increasing the supply of low-carbon power, improving energy efficiency (particularly of buildings and transport) industries, or upgrading water or wastewater infrastructure. The average “green” share of the stimulus spending is estimated to have been around 16%, but approached 40% in China (the world leader in “green” spending) and over 80% in South Korea.

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<sup>1</sup> The views expressed in this paper are the author’s alone, and do not necessarily reflect the views of the OECD or of its Member countries.

That this unfolding shift in policies has been watched with some unease by trade economists is understandable. There are the cautionary tales of the Great Depression, naturally. But there are also lessons to be learned from more recent crises. In the wake of the oil crises of the 1970s and early 1980s, and their ensuing recessions, governments poured enormous amounts of money into developing all manner of alternative energy supplies — alternative in that era meaning “not petroleum”. That much of this expenditure was poorly targeted and wasteful was as good as pre-ordained. But there were also long-lasting consequences for trade, and for the environment, consequences that are still being worked out today.

This paper argues that the global economic downturn risks not so much increasing the propensity for green protectionism as providing a broader stage for it. As background, the paper first describes the three faces of green protectionism: blatant, murky and unintentional. It then discusses the trends in environmental priorities and approaches that pre-date the current economic crisis, and that will continue to influence the shape of environmental and related energy policies long after the crisis is over. The paper then briefly reviews the types of policies and programmes that have been enacted as part of national economic recovery plans, noting that, so far, their protectionism quotient has been remarkably low. Nonetheless, there is plenty of reason for continuing vigilance. The combination of continued anxiety over global energy supplies, plus the strength of the “renewable energy = domestic jobs” narrative, will continue to be exploited by special interests and policy makers who are less antithetical to protectionist measures than are trade economists. One obvious conclusion is that policy makers need to become more attuned to the early signs of green protectionism and understand how to resist it. In order to be able to do that, however, there needs to be much more transparency on existing as well as proposed policies, and more independent analyses of their effects.

### **What is green protectionism?**

The origin of the term “green protectionism” is obscure, but it was already being employed by the World Wildlife Fund in a brief it prepared for the 5th WTO Ministerial Conference in Cancún (WWF, 2003). In

that briefing, the WWF described green protectionism as “the use of measures for narrow protectionist ends under the guise of addressing legitimate environmental goals.” More recently, Simon Evenett and John Whalley (2009), while not defining “green protectionism”, speak of its “murkiness”, and seem to have in mind a definition similar to that of WWF. The definition provides a good starting point, but it is too narrow, as it misses out on policies that are unabashedly protectionist as well as those that are simply ham-handed. Ordered from blatant to unintentional, they can be classified into three categories:

- I. The intentional use of tariffs, subsidies (including investment incentives), government procurement preferences, or trade remedies to protect or support a nascent “green” industry.
- II. The strategic use of environmental policies (including “green procurement”) to protect or support a domestic industry, green or non-green.
- III. The application of environmental measures in a way that inadvertently creates a trade barrier.

Pure protectionism based on tariffs has become less important in recent years, thanks to the progressive reduction and binding of industrial tariffs under successive GATT-sponsored multilateral trade rounds (augmented by tariff reductions under regional free-trade agreements). The main exception is fuel ethanol, the production of which is still protected in a number of countries owing to its initial classification as an agricultural commodity. Tariffs are also still high on some environmental goods in developing countries (e.g., solar water heaters), but more often as a result of general industrial protection than of a specific policy to protect these industries especially. And, finally, a few environmental goods have attracted anti-dumping duties from a number of countries, most notably compact fluorescent lamps.

More commonly used nowadays to explicitly support environmental industries (services as well as goods) are the other traditional instruments in the protectionist toolkit, notably subsidies and government-procurement preferences. Subsidies to environmental industries are provided mainly by OECD countries and newly industrializing countries. Some of those, such as subsidies for solar power in many countries,

are indirect, and non-discriminatory against foreign suppliers of goods and services. Nonetheless, large differences in support levels across countries in some cases (e.g., for solar photovoltaic panels) have created market distortions, diverting supplies to the countries that provide the heaviest subsidies and raising prices for consumers elsewhere.

Some support programmes have been discriminatory, however, and new policies of this sort continue to be created. Again, biofuels (fuel ethanol and its corresponding diesel substitute, biodiesel) offer perhaps the most extreme case, but the policies used to support them — which include in recent years new, volumetric production subsidies and even in some countries sub-national policies that grant subsidies to producers that use local agricultural feedstocks — show that some policy makers are still willing to use whatever it takes to support a domestic industry.

The second category of green protectionism covers the broad panoply of policies that Evenett and Whalley (2009) refer to as “murky green” — those that may have an ostensibly environmental motive, but which also favour domestic producers. They are “murky” because proving that there is protectionist intent behind them is usually difficult if not impossible. Perhaps the most straight-forward policies in this category are those that compensate producers for the costs of conforming with environmental regulations.<sup>2</sup> One of the aspects of subsidies for the adaptation of existing facilities to new environmental requirements that makes them problematic from a trade perspective is that, as engineers internalize pollution prevention into their designs, it becomes increasingly difficult to separately identify technologies designed to meet

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<sup>2</sup> Such subsidies, within limits, received the blessing of the WTO for five years (1995-99) while Article 8 (“Non-Actionable Subsidies”) of the Agreement on Subsidies and Countervailing Measures remained in force. Under the provisions of this Article, several categories of subsidies were deemed “non-actionable”, including ones for “assistance to promote adaptation of existing facilities to new environmental requirements imposed by law and/or regulations which result in greater constraints and financial burden on firms, provided that the assistance: (i) is a one-time non-recurring measure; (ii) is limited to 20% of the cost of adaptation; (iii) does not cover the cost of replacing and operating the assisted investment, which must be fully borne by firms; (iv) is directly linked to and proportionate to a firm’s planned reduction of nuisances and pollution, and does not cover any manufacturing cost savings which may be achieved; and (v) is available to all firms which can adopt the new equipment and/or production processes.” (WTO, 2007) In the event, no countries provided the prior notification required for them to avail themselves of this safe haven, and the Article was allowed to lapse.

environmental requirements from those that improve the efficiency with which a facility makes use of material inputs.

Among the early recipients of these types of subsidies were heavy industries, such as steel-making, and traditional occupations such as fishing and farming. Following the sharp rises in the cost of energy during the 1970s and early 1980s, for example, and the adoption of tougher regulations on the release of sulphur oxides and nitrogen oxides from the combustion of fuels, many countries provided assistance to their heavy industries to switch to more energy-efficient modes of production. That the investments stimulated by these investments also sometimes helped producers to reduce their operating costs, was at first regarded as a happy coincidence. However, State Aid authorities, at least those in the EU, have since toughened their stance on such subsidies — even those provided in the name of environmental improvement or energy conservation — and have often ruled against support for investments that should have been in the interest of the firms to undertake on their own.<sup>3</sup>

Another form of “murky green” government intervention, especially common in the area of chemicals, are regulations banning or severely limiting the use of certain substances. The rationale for such regulations is that the substances have been shown to be potentially carcinogenic, mutagenic or otherwise harmful to humans or the environment. Very often, producers in the country initiating the regulation offer a (slightly) safer or greener substitute.<sup>4</sup>

Perhaps just as common as these sorts of government regulations are those for which an adverse impact on exports from another country is truly an unintended consequence — the result of changes in domestic regulations that have no benefit for domestic producers, but which inadvertently reduce the market access of exporters. This is not uncommon in the case of the deregistration of pesticides that are no

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<sup>3</sup> See, for example, the Commission Decision of 28 March 2001 on the State aid which Germany was planning to implement for the steel firm BRE.M.A Warmwalzwerk GmbH & Co. KG <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002D0081:EN:NOT>.

<sup>4</sup> See, for example, “Limits on aromatic amines in textiles coloured with azo dyes”, Chapter 2 in OECD (2005).

longer being used in the importing country but are still used in other countries.<sup>5</sup> Because such changes in regulations are not motivated by the desire to protect domestic industries, they are no more likely to be resorted to during economic crises than during any other periods. However, in at least once case since the current economic crisis started (described below), an unintended windfall resulting from an environmental subsidy has led to a copy-cat subsidy in another country.

### **Pre-crisis green trends**

To assess the risk of green protectionism posed by the current economic crisis, it is helpful to understand trends in environmental concerns and policy responses that were already manifest by the end of the 1990s and were well advanced by the late 2000s.

At the time the economic crisis hit, there was already a growing sense of urgency surrounding big environmental issues. Although the world has previously experienced heightened anxiety over environmental and resource constraints, most notably in the 1970s (see, e.g., Erlich, 1968; Meadows et al., 1972), the view that the world is gravely threatened by climate change, biodiversity loss, peak oil, peak water and even peak soil has in recent years become much more widespread. Back in the 1970s, talk of imminent environmental catastrophe and rapid resource depletion was more easily dismissed as alarmist and uninformed by economics and science. By the dawning of the 3rd millennium — with 2.3 billion more mouths to feed, clothe and house than in 1970 — many more scientists had joined the chorus, notably organized through such authoritative bodies as the Inter-governmental Panel on Climate Change. By the time of the December 2007 meeting of the Conference of Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC), international climate diplomacy had shifted into high gear,

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<sup>5</sup> The problem in these kinds of cases lies not so much with any protectionist intent, but with regulations that quasi-automatically revert to a default value unrelated to actual public risks; see, for example, “Limits on pesticide residues in tea”, Chapter 7 in OECD (2005). The WTO’s Agreement on Sanitary and Phytosanitary Standards (SPS Agreement) has since encouraged governments to adopt residue limits that they can defend based on science, and that are not simply set through some automatic default mechanism. But it may well be that other “sleeper laws” exist on the books of some countries that could in the future trigger the erection of new trade barriers.

and all eyes became focussed on the December 2009 COP, at which a new, post-2012 climate regime is due to be hammered out.

By August 2008, several OECD countries had already adopted, or were considering adopting, major economy-wide policies to address their own carbon emissions. However, because of concerns related to the cost of compliance for certain domestic industries, and the possibility that investment and production would shift to countries not undertaking such measures, policy makers in some economies — notably the EU and the United States — started to speculate openly about adopting so-called “border carbon adjustment” measures (BCAs) once their schemes were in place. These BCAs would involve either levying a charge on imports (and a rebate on exports) or requiring that importers purchase carbon offsets, such as those sold on the European Carbon Exchange.

Meanwhile, anxiety over the world’s increasing dependence on hydrocarbons from the Middle East, and from other nations considered to be unstable in one form or another, increased pressure on policy makers to develop national capacities to produce and use alternatives to petroleum fuels. And, since the most important use of petroleum nowadays is for transport, that led a large number of countries to support technically proven substitutes for gasoline and mineral diesel — namely, ethanol and biodiesel. Such biofuels, in the majority of cases made from crops, were also looked upon favourably by politicians eager to help their rural constituencies. By the end of 2007, more than a dozen major economies, both developed and developing, had established regulations establishing minimum shares or volumes of biofuels in their transport fuel mix, usually combined with some form of state aid for domestic producers of those fuels and, in the case of ethanol, high protective tariffs (Steenblik, 2007). These actions, in turn, spurred double-digit growth in the sector, contributing to rising food prices and a subsequent crisis of over-capacity — not as large, but just as deep, as that experienced by the automobile sector.

Another major trend over the last decade has been the enormous growth in the number of voluntary eco-labelling schemes, both governmental and privately sponsored, and especially of what can loosely be

called “sustainability standards”. These are standards based on criteria relating to the production and processing of goods and services, rather than to the safety or environmental attributes of the product itself — what trade lawyers refer to as measures based on PPMs. In recent years, a new sort of standard has emerged, based on estimates of the emissions over the life cycle of a product, especially emissions of carbon dioxide or greenhouse gases more generally (see, e.g., Brenton et al., 2008). Although most such “carbon footprinting” has been applied by the private sector in the form of information labels, new regulations expected to go into effect in Europe and the United States within the next few years link obligations relating to biofuels or low-carbon fuels to the life-cycle GHG emissions of those fuels.

### **Has the crisis increased green protectionism?**

So, has the crisis increased the green protectionism? It is hard to say: in general, developed countries have so far refrained from raising tariffs to protect or support any industry, including “green” industries. Some developing countries have raised their tariffs, from lower applied rates to higher bound rates, but there is little evidence that these tariff increases have been connected in any way with environmental policies, nor have environmental industries been targeted for special treatment (WTO, 2009a, 2009b and 2009c).

On the other hand, the economic crisis probably has not helped the cause of those — namely, OECD countries — that have been calling for progress at the WTO in negotiating a multilateral agreement to reduce or eliminate tariff and non-tariff barriers to international trade in environmental goods and services.<sup>6</sup> Already, by 2005, it had become clear that several key developing countries had rejected the idea of liberalizing tariffs on a negotiated list of environmental goods, and were proposing instead alternatives such as liberalizing trade in such goods on a project-specific basis — something many of them do already. There has been no evidence so far to suggest that the economic crisis has caused these countries to undergo a change of heart. By contrast, on 25 June 2009, all 30 Member countries of the OECD, plus Chile, Estonia, Israel and Slovenia, adopted a “Declaration on Green Growth” which affirmed “the importance of

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<sup>6</sup> Paragraph 31(iii) of the Doha Development Agenda, the negotiating mandate for the WTO’s Doha Round of multilateral trade negotiations.



the liberalisation of trade in environmental goods and services in fostering green growth”, adding “We are resolved to ensure that measures taken to combat climate change are consistent with our international trade negotiations.” (OECD, 2009)

The crisis may have also made the strategic use of environmental policies to protect domestic industries more acceptable, but again it is too early to tell. Nonetheless, there is plenty of reason for monitoring developments closely. Since March 2009, for example, several countries have provided investment aids help their car manufacturers develop “greener” vehicles. Some of these investment aids are being used to fund private R&D into truly new propulsion systems, notably advanced batteries for electric cars. But some may be merely furnishing the means by which car companies that previously chose to concentrate on manufacturing large, gas-guzzling vehicles can retool and start producing vehicles more like those that were already being produced by companies that, prior to the crisis, had astutely pursued the market for energy-efficient cars. Examples include USD 5.9 billion in government-guaranteed loans to Ford Motor Co. to help the company upgrade factories in five Midwestern U.S. states to produce a range of fuel-efficient vehicles (Thomas, 2009), a £27 million grant from the U.K. Government to Jaguar to enable it to develop “the smallest, lightest and greenest Range Rover ever made” (Arnott, 2009), and a temporary scheme (until 31 December 2009 with a maximum term of two years) benefiting Spain’s car and car component industry that provides interest rate subsidies for the production of environmentally-friendly (“green”) cars (WTO, 2009c).

In at least one case, a pre-crisis “green measure” with unintended consequences has led to another country responding in kind. In April 2009, press reports revealed that several American pulp mills were claiming a U.S. tax credit on the “black liquor”, a by-product of the pulp-making process that pulp mills have been using as a cheap source of energy for decades (Mufson, 2009).<sup>7</sup> The tax credit had been created in 2005 and was intended to encourage business to use biofuels such as ethanol or biodiesel in their

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<sup>7</sup> According to Mufson (2009), burning the fuel dates to the 1930s, and U.S. paper companies have consumed nearly all of the by-product since the 1990s.

company fleets. But in 2008, several U.S. paper companies sought and successfully obtained a ruling from the tax authorities that the tax credit was also available for black liquor, thus allowing them to collectively reap a several-billion-dollar tax benefit in 2009. Their Canadian counterparts quickly responded, complaining that they were “drowning financially because of the tax windfall for their American rivals” (Egan, 2009). In response, on 17 June 2009, the Canadian Government announced a C\$1 billion (USD 880 million) package to its pulp and paper producers, under which it will pay the companies C\$ 0.16 per litre for “black liquor” produced between January and December 2009. Canadian officials have said their subsidy differs from the U.S. tax credit because it places a cap on total government expenditure, and companies must spend it on environmental and energy improvements; they may not use it to reduce debt or to increase short-term profits (Egan, 2009).

What is certain is that the crisis has encouraged government investment in environmental infrastructure, particularly that supporting renewable energy, cleaner transport, and water. The HSBC Climate Partnership — a partnership between the international banking group, HSBC, and the Climate Group, the Earthwatch Institute, the Smithsonian Tropical Research Institute and WWF — has been closely monitoring government expenditure on “green” measures since the beginning of the crisis. Its latest analysis, published in February (Robins et al., 2009), identified numerous measures relating to transport and renewable energy in particular, including:

- increased R&D assistance for electric vehicles, hydrogen fuel cells, liquid biofuels;
- consumer incentives, such as bonuses for the purchase of more fuel-efficient or less-polluting vehicles;
- incentives aimed at buyers of new cars to scrap their old vehicles;
- public investments in road networks, rail (USD 122 billion worldwide), and urban transport;
- increases in budgets to subsidize the upgrading of electricity grids, and the construction of new renewable-energy electricity generating capacity.

Whether, and to what extent, these measures will prove to be trade distorting depends on the details of how they have been designed and implemented. Naturally, R&D assistance has been targeted at helping

those industries for which policy makers see a viable future in the domestic market. It should not be automatically assumed, however, that R&D assistance is viewed as totally innocuous by trading partners: the Airbus-Boeing dispute at the WTO, the largest subsidy dispute the organization has taken on so far, centres around the R&D money that the airlines have allegedly received and benefitted from. But the fact that several countries have put their money into funding R&D, when they might have been tempted to provide production subsidies, can be seen in a positive light. Moreover, spending on R&D, such as into improvements in electric vehicles, could generate spill-over benefits for rest of the world.

Neither the consumer incentives for greener vehicles nor scrapping incentives provided so far overtly discriminate against imported vehicles. However, their “green” criteria vary widely, and are arguably tailored to match the strengths of each country’s domestic car industry. For example, as Höhne et al. (2009) point out, the criteria used by different countries range from no linkage to improved environmental performance (Germany) to maximum emissions rates (gCO<sub>2</sub>/km) of varying levels (France, Italy and Japan). Enthusiasm for government intervention as a spur to get struggling carmakers to shift to greener designs even led the Finance Minister of Norway, Kristin Halvorsen, to suggest, as from 2015, banning sales in her country of new cars that can run only on fossil fuels; this has not become official government policy, however (Doyle, 2009).

As Metcalf (2009) points out, the way that such policies are designed can lead to wide variations in cost-effectiveness. In the case of the Hybrid Vehicle Tax Credit, created by the U.S. Energy Policy Act of 2005 to encourage sales of cars powered by hybrid gasoline-electric engines, the cost (for 2009 model years) ranges from zero to over USD 3 per per litre of gasoline saved (Table 1).<sup>8</sup> Moreover, by favouring a particular technology, vehicles that economize on energy through other means are disadvantaged.

**Table 1. Tax credit per litre of gasoline saved through the United States’ Hybrid Vehicle Tax Credit, based on models sold in 2009**

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<sup>8</sup> The tax credit, which ranges from zero to USD 3,000 per vehicle, depends on whether the vehicle meets the specific hybrid criteria and on how many vehicles have been sold. The credit phases out over time as certain sales targets for the vehicle are met.

Make and model	Version	Miles per U.S. gallon	Litres per 100 km	Hybrid Vehicle Tax Credit	Annualised value of credit	Annual gasoline savings per vehicle (litres)	Tax credit per litre of gasoline saved
Chrysler Aspen	Hybrid	21	11.1	\$2,200	\$347	114	\$3.06
Ford Escape(2WD)	Hybrid	32	7.3	\$3,000	\$474	886	\$0.54
Mazda Tribute(2WD)	Hybrid	32	7.3	\$3,000	\$474	886	\$0.54
Nissan Altima	Hybrid	34	6.9	\$2,350	\$371	973	\$0.38
Toyota Prius	Hybrid	46	5.1	\$0	\$0	1,336	\$0.00
Toyota Corolla	Non-hybrid	31	7.5	\$0	\$0	840	\$0.00

Source: Original calculations by Metcalf (2009) based on savings relative to a vehicle that can be driven 20 miles on a gallon of gasoline (consumes 11 litres per 100 kilometres) and is driven 12,495 miles (20,109 kilometres) in a year. Vehicles are assumed to be driven for 10 years and the savings are annulaized with a ten percent discount rate. Rates converted to equivalent metric units by the author of this paper.

Publicly-supported investments in infrastructure, including public transport, “smart” electricity grids, and improved water and sanitation, will — so we have been assured — abide by WTO government-procurement rules. Nonetheless, as research by Evenett (2009) has shown, the devil is in the implementation details, and there are already some troubling indications that implementation of the U.S. American Recovery and Reinvestment Act (ARPA) by spending agencies will be guided by instructions that do not always contain the full original caveats requiring compatibility with the WTO Agreement on Government Procurement. Ironically, in the case of water supply and sewage-treatment plants, bottlenecks have already appeared because of the need for foreign-sourced key equipment (Drajem, 2009).

Concerns about local preferences in government procurement were also raised when, in June 2009, China issued an edict affirming that “Government investment projects should buy domestically-made products unless products or services cannot be obtained in reasonable commercial conditions in China.” (McDonald, 2009) According to Bradsher (2009), when the Chinese government took bids this spring for 25 large contracts to supply wind turbines, every contract was won by one of seven domestic companies, including several companies that had no prior experience in building a turbine. All six multinationals that submitted bids were disqualified on various technical grounds (like not providing sufficiently detailed data), within three days of bidding for the wind farm contracts. Some of the European turbine

manufacturers had already built factories in China in order to comply with the country's requirement that turbines contain 70% local content. In addition, the Chinese government banned virtually any installation of wind turbines with a capacity of less than 1,000 kilowatts — excluding 850-kilowatt designs, a popular size for European manufacturers. Similarly, when China authorized its first solar power plant this spring, it required that at least 80% of the equipment be made in China.

Not surprisingly, some stimulus package money is being used to rescue troubled industries, including some already heavily dependent on government support. Once again, biofuels stand out. Various OECD countries were already offering incentives to their biofuel industries before the crisis. But what became clear in late 2008 and this year was that several of them have shown that they are committed to keeping their domestic producers in business, often through the provision of new subsidies. Thus, since 4Q 2008, at least three countries (Canada, New Zealand, and the United States) have provided new policies aimed at either rescuing existing producers or stimulating projects that had been put on hold as a result of the crisis.

### **The need for continuing vigilance**

Economic crises always increase domestic pressure for protection generally. An economic crisis, by itself, neither increases nor decreases the number of green threads in the fabric of protectionism. Indeed, if the Kuznets curve has any validity, then hard times are likely to lead if anything to *reduced* demand for environmental protection. That would suggest a slowing down in the rate of new environmental regulations of the kind that could be used to greenwash protectionism.

However, there are several trends and popular sentiments that could be exploited for protectionist purposes. These include: fears over reduced energy security, inflated expectations over job creation from “green” investments, the advent of product-level carbon footprinting, and the more general concerns related to leakage and competitive effects of climate policies.

The goal of achieving national-level energy security, usually translated into the more simplistic notion of energy self-sufficiency, feeds on fears. Its appeal rises and falls in line with international energy prices, but is also heightened by market disruptions such as the 1973-74 Arab Oil Embargo, the Gulf Wars, and Russia's disputes with its neighbours over natural-gas pricing. Domestic energy industries — including industries supplying renewable energy — have become adept at exploiting such periods to lock in subsidies, tax breaks and regulatory favours, and there is no reason to believe that this situation has changed.

Another problem that could lead to more protection of renewable-energy industries is that, in many countries, advocates of renewable energy and greater government encouragement of green industries have long stressed the numbers of domestic jobs that would be created if only governments would mandate or subsidize the greater use of renewable energy (see, e.g., Institute for America's Future et al., 2004). In the middle of this decade, a number of detailed studies were undertaken in the United States to identify how many jobs would be created, and in what states, from major increases in solar and wind capacity.<sup>9</sup> Few of those studies undertaken in the United States considered what components would more likely be imported than produced domestically.<sup>10</sup> How policy makers will react as they begin to realize that many components of renewable energy are traded just like other goods — as suggested by a recent study prepared by the New America Foundation (Sherraden and Peuquet, 2009) — is difficult to predict.

Policies and labelling initiatives that are based on estimates of the life-cycle CO<sub>2</sub> or greenhouse-gas (GHG) emissions of specific products are also being adopted at a rapid rate. These range from various government-sponsored voluntary and mandatory schemes for labelling the “carbon footprint” of common products (especially food, clothing, appliances) sold at the retail level to regulations relating to the minimum GHG savings of biofuels compared with petroleum fuels, or their close relative, low-carbon fuel standards for transport fuels. Given the uncertainty and impreciseness of the models and data used in life-

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<sup>9</sup> For a comprehensive review, see Kammen et al. (2004).

<sup>10</sup> A notable recent exception is the study by Pollin et al. (2009).

cycle analysis (LCA), and the degree of expert judgement involved in LCA, the risk of political pressure influencing the settings of policies in this area is real.

The use of border adjustments as a means to address concerns over carbon leakage and competitiveness now looks to be a strong possibility, with inclusion of provisions in the version of the energy and climate (Waxman-Markey) bill passed by the House of Representatives in June 2009. The bill as it passed the House would require importers of heavily-traded energy-intensive products to purchase emissions allowances. Exemptions from this requirement would apply to exports from least-developed countries and from states with both low absolute levels of emissions and small import market shares. But for the rest, exemption from the requirement would depend on an assessment of whether the GHG emissions or the energy intensity of the sector in the exporting country was equal to or lower than that of its U.S. competitors, or if at least 85% of U.S. imports of the product are coming from countries with binding emissions reduction targets or lower energy intensity (ICTSD, 2009). Although the bill still has many hurdles to cross before (or if) it becomes law, its provisions on border carbon adjustment are already attracting attention from trading partners.

### **Policy implications**

Protectionism is not only a potential problem for the world's trading system, but also to environmental goals. As Evenett and Whalley (2009) observe, dressing up protectionist measures in environmental garb can have a chilling effect on environmental negotiations: "Trading partners in the rest of the world will hardly believe that the discretion abused in existing national environmental regulation will not be abused again ... ." Succumbing to pressures for green protectionism would not only reduce the gains from trade and blunt the spur to technological innovation provided by international competition, it would also undercut the credibility and trust that nations need to maintain as they enter into multilateral negotiations over new and wide-ranging environmental agreements, most notably a post-2012 climate regime (Evenett, Simon and Whalley, 2009). Among economies that are only now beginning to develop their own markets for environmental goods and services, there is a suspicion that calls by highly developed economies for

ever more stringent environmental regulations are influenced by their commercial interest in supplying the goods and services needed to comply with those regulations. However unfounded those suspicions may be, any embrace of green protectionism would sustain them.

Whether the economic crisis end up providing scope for increased protectionism or supporting the positive elements of the “green growth” rhetoric (e.g., spurring countries to reduce tariffs and non-tariff barriers to trade in environmental goods and services) will depend in part on how well policy makers are attuned to the trade effects of environmental policies and can recognize the early signs of green protectionism so as to avert it. As in so many areas of policy, a key requirement is transparency on existing as well as proposed policies, and more independent analyses of their effects.



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