

## CHAPTER 4

# All Countries Will Agree on Climate Fairness

We associate truth with convenience, with what most closely accords with self-interest and personal well-being or promises best to avoid awkward effort or unwelcome dislocation of life.

*John Kenneth Galbraith*

**O**N JANUARY 30, 1933, PRESIDENT PAUL VON HINDENBURG appointed Adolf Hitler Chancellor of Germany. Hitler's Nazi party had won only 33% of the vote, but he pledged to govern in a coalition with other right-wing parties. Instead, over the next two months he issued executive decrees that overruled existing laws and consolidated his power. Soon, political opposition in Germany was illegal, and newly constructed concentration camps held the leaders of all parties except those closest to the Nazis.

During Hitler's 12-year reign of terror and war, over 60 million people died. With hindsight, we can say that German citizens should have stopped him before he consolidated his fascist dictatorship. But is it fair to judge people who lived at that time? Is it fair to say they should have anticipated the horrific global outcome and acted in time to prevent it?

There were in fact people inside and outside Germany who tried early to convince others of the urgency of preventative action. Hitler had stated his intentions in his book, *Mein Kampf*, which he wrote while serving a short prison term after his failed *coup d'état* of 1923.<sup>1</sup> In this personal manifesto, Hitler claimed it was the destiny of the German people, as the superior Aryan race, to struggle for world domination, and his personal duty to lead them.

Once Hitler had eliminated the option of defeating him in democratic elections, some Germans organized themselves into clandestine resistance groups. These activists included communists, socialists, liberals, conservatives, Christians, and members of the military. Some tried in vain to convince their political and social contacts in neighboring countries of the need for military intervention from outside Germany. From within, some conspired to kill or capture Hitler in hopes that the police and army would transition the country back to democracy. But Hitler had merged his Nazi paramilitary forces with the police, and compelled army officers to swear personal allegiance to him.

Adam von Trott zu Solz was an early participant in the German resistance. Educated at Oxford as a Rhodes scholar, he was training as a lawyer in Germany when Hitler attained power. During the next 11 years, he conspired with other German resisters, but several efforts to overthrow or assassinate Hitler failed. After the failed attempt in July 1944, von Trott was arrested by the Gestapo. He was executed on August 26, 1944, at the age of 35.

In a post-war interview in the movie *Restless Conscience*, his wife recalled von Trott trying to rally others to resist right from the day Hitler was appointed Chancellor. She recounted his agitated response to friends suggesting he was overreacting, “How can you not see it? Hitler says *exactly* what he will do in his book. We must stop him now, before it’s too late.”<sup>2</sup>

In spite of far-seeing, courageous people like von Trott, the opposition within Germany failed to stop Hitler. Not enough people were willing to act. And while the threat from Germany grew with each year of Hitler’s reign, the rest of the world did little.

Winston Churchill is famous for his resolute leadership in World War II, especially during the perilous year when Britain stood alone against Germany, between the fall of France in June 1940 and Hitler’s surprise invasion of the Soviet Union in June 1941. He is less well known for his efforts in the 1930s to convince people in Britain, Europe, and America of the urgency of opposing Hitler sooner rather than later. Although not alone in this, Churchill was the most emphatic and eloquent political leader to recognize the global threat and urge pre-emptive action to avert a horrendous outcome. In hindsight, his efforts in the 1930s to prevent

a global war were even more impressive and prescient than his war leadership in the 1940s.

Churchill's response to Hitler's 1936 occupation of the Rhineland is noteworthy. The Treaty of Versailles, signed in 1919 at the end of World War I, prohibited Germany from maintaining a large army and stationing troops in the Rhineland along its border with France. But soon after attaining power, Hitler started to remilitarize and in 1936 brazenly marched German troops into the Rhineland. The other treaty signatories, including the US, should have immediately required Hitler to withdraw his forces or face military intervention. Success against Germany at this stage was certain since his army was still small and ill equipped. Also, as it turns out, a group of German army officers were ready to overthrow Hitler the moment foreign powers sent in troops to repel the German soldiers from the Rhineland.

An opposition politician at the time, Churchill pleaded in the British Parliament for immediate intervention against German remilitarization.

The turning-point has been reached and new steps must be taken ...  
 Germany is arming – she is rapidly arming – and no one will stop her ...  
 I marvel at the complacency of ministers in the face of the frightful  
 experiences through which we have all so newly passed ... A terrible  
 process is astir. Germany is arming.<sup>3</sup>

But England and other countries did nothing to oppose Hitler's abrogation of the treaty, and the movement within Germany to oust Hitler lost its chance. Hitler's successful defiance of foreign powers and re-acquisition of the Rhineland bolstered his popularity, reducing support among conservatives and the military for removing him by *coup d'état*. The opportunity was missed.

Churchill was increasingly bitter at the inability of others to recognize an obvious threat and act pre-emptively. In the following years, as Hitler occupied Austria, then part of Czechoslovakia, then the rest of Czechoslovakia, the major powers of the world did nothing, leading to Churchill's rueful comment in early 1939.

If you will not fight for right when you can easily win without blood-shed; if you will not fight when your victory is sure and not too costly; you may

come to the moment when you will have to fight with all the odds against you and only a precarious chance of survival.<sup>4</sup>

As an avid 20th-century history reader, I see parallels in how individuals and countries responded to the global threat posed by Hitler's Germany and the global threat posed by climate change. These are different threats. Still, I note similarities in how people justify ignoring the threat and dismissing the compelling arguments of compatriots on the urgent need for pre-emptive action.

Von Trott and other brave people tried to rally resisters, but not enough Germans recognized their personal responsibility to take risks to prevent a disaster. Citizens of other countries had their own excuses for complacency. Many Americans believed that US participation in World War I had been a mistake and now favored an 'isolationist' foreign policy, free from the frequent conflicts in Europe and Asia. They refused to acknowledge the clearly global nature of the threat.

As Hitler's Germany intensified its aggressiveness, humanity's inability to coordinate a global response became increasingly apparent. The League of Nations, which had been created after World War I to reduce the risk of another major conflict, lacked the military force necessary to discipline rogue states. The only hope was if major powers coordinated economic sanctions and, if necessary, military intervention. But their national interests differed. Britain and France were concerned, but wishful thinking bias led most of their political leaders to downplay the threat. Neither country wanted the inconvenience of re-militarizing to confront Germany so soon after World War I. The Soviet Union felt threatened, given Hitler's anti-communist rants and prophesies of Germany's eastward expansion, but mutual distrust prevented it and capitalist countries from cooperating.

These countries eventually fought together in World War II as 'the Allies,' but the powerful coalition of the US, the USSR, and the British Empire that defeated Germany was created by Hitler, not by the coalition members. Britain and France were committed by treaty to protect Poland. Hitler attacked Poland in 1939 anyway, which compelled Britain and France to declare war. After France was defeated by Germany in 1940, Hitler tried to convince Churchill to make peace, but

he refused. Hitler's invasion of the Soviet Union in June 1941 made it by default an instant ally of the British Empire. A grateful Churchill ruefully commented on his new allegiance with the hated communist Joseph Stalin, "If Hitler invaded hell, I would make at least a favorable reference to the devil in the House of Commons."<sup>5</sup>

After the Japanese attack on Pearl Harbor in December 1941, Hitler made the fateful decision that guaranteed his defeat. Four days after the attack, to the shock and dismay of his military commanders, he declared war on the US, enabling Roosevelt to finally bring the US into the conflict by reciprocating Hitler's declaration. While much was later made of the Allies' united front against a global threat, their coalition was created by Hitler. Only after his blunder in declaring war on the US could Churchill finally note in his diary, "On that night I experienced the sleep of a baby, confident that our cause must surely now prevail."<sup>6</sup>

While some impressive people frantically sought a concerted, preventative response to the global threat of Hitler, there were not enough of them. Not enough people recognized the enormous importance of acting sooner rather than waiting. Not enough were willing to incur a relatively small cost, personally or nationally, to avoid an enormous future cost. Not enough were willing to yield national interests to global collective interests. Even a threat as grave as the aggression of Hitler's Nazi Germany was insufficient to motivate the great powers to form a coalition. It was not by *voluntary* initiative that countries united to address a serious global threat.

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Reducing GHG emissions is a 'global collective action problem' – humanity must act together to solve it. This is because the atmosphere is a 'global common property resource,' something that no one owns and therefore everyone owns. Common property resources are challenging to manage sustainably because of the difficulty of controlling their exploitation, such as their use for dumping harmful emissions or effluents. If a common property resource is located entirely within national boundaries, like an urban airshed or some lakes and rivers, then an individual government can restrict the dumping of pollutants. But the

protection of global common property resources, like the atmosphere and oceans, requires global collective action.

Global collective action to reduce GHG emissions is difficult for obvious reasons. Since the problem results from the GHG emissions of all countries, the emissions of one country are just one part of the problem. Actions by one country cannot prevent the harm from occurring. China is the biggest GHG emitter, accounting for 25%. If China reduced its emissions a whopping 40%, that's only a 10% reduction of global emissions. And most countries' emissions are tiny compared to China's.

This small potential contribution of each country to the solution makes it difficult for a national government to convince its citizens to unilaterally reduce emissions. Indeed, if one or even several countries tried to show leadership by reducing emissions, they could not prevent other countries from 'free-riding' on their efforts. If burning low-cost fossil fuels helps enrich an economy, the countries that did nothing to reduce emissions would see an improvement in their industries' competitive position, leading to greater wealth. The incentive is strong to free-ride if there is no penalty for doing so. And the likelihood that some countries will free-ride discourages others from acting.

Note the similarities and differences with a risk like lung cancer from smoking. With both smoking and GHG emissions, scientists and concerned citizens must overcome the concerted efforts of powerful, wealthy interests to mislead the public about the threat. But with smoking, at least the threat can be addressed within a single jurisdiction. Once enough people accept the science and elect governments willing to act, domestic policies can reduce the harms of first- and second-hand smoke. It doesn't matter what other countries do. But with GHG emissions, even when enough people accept the science and elect a climate-sincere government, citizens are aware that their national effort won't avert the threat. In case they might forget, economically powerful private interests and their agents remind them daily in the media of the futility of unilateral action – "There's no point reducing our small share of global emissions as long as there are still coal plants in [name your country]."

If there were a global government, it could require all countries to reduce their GHG emissions and levy penalties to ensure universal

compliance. But we don't have a global government. All we have is the United Nations. This institution was established after World War II with a primary goal of reducing the risks of another world war. But like its predecessor, the League of Nations, the UN's authority is restricted. The major powers have been unwilling to yield much of their national sovereignty to a global authority. Thus, the UN is limited to functions agreed upon by all major powers: development assistance, peace-keeping forces, and international coordination.

The UN can also lead negotiations for global agreements, such as an international treaty to reduce GHG emissions. At the Rio de Janeiro Earth Summit in 1992, all countries agreed to establish the Framework Convention on Climate Change, which mandated the UN to negotiate a climate treaty. They also created the Intergovernmental Panel on Climate Change to provide unbiased assessments of the latest climate science research, the climate change impacts on humans and the environments on which we depend, the ways in which these impacts could be mitigated, and the technologies and policies for reducing GHG emissions to prevent the impacts.

Once a year the UN Framework Convention on Climate Change convenes a negotiating meeting with delegates from all countries, called the Conference of the Parties. Success depends on all countries voluntarily agreeing on the fair contribution of each to the global GHG reduction objective, including payments from wealthier countries to help poorer countries with the costs of following a low-emission energy development path. The meetings have occurred annually since 1995 without yet achieving a binding treaty that would cause global GHG emissions to fall.

The meetings in Kyoto in 1997 and Paris in 2015 appeared to make significant progress. But appearances can be deceiving. In the 1997 Kyoto Protocol, industrialized countries agreed to reduce their emissions, in aggregate, to 5% below their 1990 levels by 2010. They agreed on an allocation of that reduction among themselves. They also agreed on mechanisms to help fund emission reductions in "economies-in-transition" (the former East Bloc communist countries) and developing countries. World political leaders and many climate advocates trumpeted the agreement as demonstrating that the United Nations' voluntary consensus approach could work.

Their conclusion was premature. The protocol failed as a global agreement that would eventually reduce emissions. The reasons were predictable, and many people said so at the time, an example being David Victor's book *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming*.<sup>7</sup> First, this was not an agreement that restricted global GHG emissions, notwithstanding how political leaders presented it. Poorer countries did not have GHG limits, while richer countries did. Second, it was not a binding agreement, although there was a commitment to develop a mandatory compliance mechanism in future. Without this, wealthier countries knew that failure to achieve their targets had no repercussions. Compensation of some kind was threatened for countries that missed their commitments, but they could avoid this by withdrawing from the treaty.

The next decade witnessed a painful unraveling. Vice-president Al Gore had negotiated the treaty for the US, but he and President Bill Clinton were unable to convince the US Congress to ratify it. Prior to Kyoto, the US Senate had voted 95–0 not to approve any agreement that failed to also impose binding targets on developing countries. But at Kyoto, these countries were unwilling to talk about restricting their own emissions until wealthier countries acted first, and wealthier countries were unwilling to implement a mandatory global mechanism with penalties – presumably tariffs – for non-compliant countries. The absence of such a condition in the Kyoto Protocol made it easy for the next US president, George W. Bush, to refuse to pursue congressional ratification of the treaty that Al Gore had negotiated.

The ensuing years saw rapid emissions growth in China and other developing countries, which overwhelmed the slowing of emissions growth in wealthier countries. The European Union reached an agreement to implement its own cap program for industrial emissions, but the effect was not significant. The efforts of other wealthy countries oscillated depending on the vagaries of public will and electoral shifts. National debates about GHG targets and policy were increasingly disconnected from the Kyoto targets.

Public concern for GHG emissions in the US declined after the 2001 terrorist attack on the World Trade Center and the Pentagon. But by 2005, the combination of Hurricane Katrina and Al Gore's award-



winning book and movie, *An Inconvenient Truth*, caused a resurgence in climate interest in the US, with a ripple effect in other countries.<sup>8</sup>

In 2008, the election of President Barack Obama along with a Democratic majority in the US Congress led to renewed hopes for a revision of the Kyoto Protocol or the negotiation of an entirely new treaty. However, at the 2009 Copenhagen meeting of the Framework Convention on Climate Change, Obama's efforts to reach a new global agreement failed. Developing countries, including China, were still unwilling to commit to restraining their growing emissions, and wealthier countries were still unwilling to offer sufficient financial support for these countries to voluntarily forgo the benefits of burning fossil fuels, nor to implement a system of carbon tariffs to incentivize an effort by all countries.

While the Democratic majority in the US House of Representatives was able in 2009 to pass a bill (Waxman-Markey) to establish a GHG cap-and-trade policy, that bill never came to a vote in the US Senate. The Democratic setback in the mid-term elections of 2010 removed the last chance for US GHG legislation during Obama's presidency, making an effective global agreement all the more elusive.

The failure to reach an agreement at Copenhagen in 2009 convinced frustrated negotiators to set a distant future date for the next major effort at a global agreement, that being the 2015 annual meeting slated for Paris. This gave time for strategic discussions in advance of the meeting, with negotiators finally deciding that each country would be allowed to voluntarily set its target prior to the Paris summit – its “nationally determined contribution.” Countries announced these commitments in the year prior to the meeting.

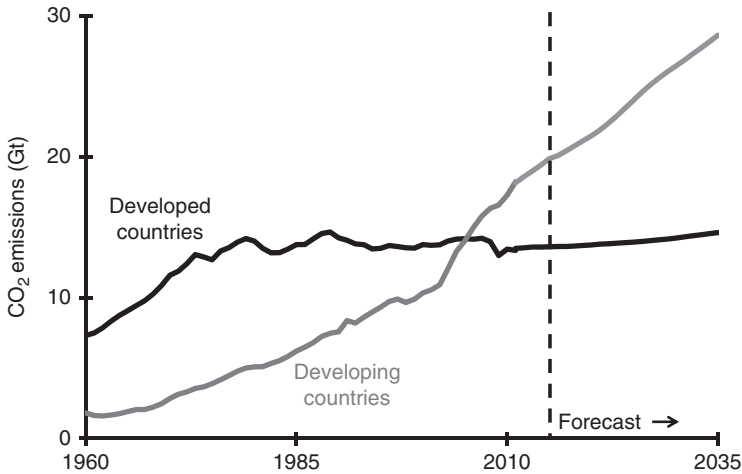
International consensus is easy if each country comes to the negotiating table simply to ratify its own target. Thus, the Paris Accord was signed by virtually all countries in June 2015. Soon after, though, scientists confirmed the obvious. Even if all the national commitments were achieved, total emissions would still increase enough to raise average temperatures about 3.5 degrees Celsius by the end of the century.<sup>9</sup> And like previous agreements, the Paris Accord lacks a mandatory compliance mechanism, so there is no incentive for individual countries to achieve their national commitments if they can instead free-ride on the efforts of others, and others can free-ride on their efforts.

Climate negotiators are dedicated people. But, as defined, their mission is impossible. We have tasked them with convincing countries to voluntarily agree on the allocation of the costs of rapidly transforming the global energy system. We forget that even when facing the immediate, existential threat from German militarism in the 1930s, the world's major powers were unable to voluntarily combine forces in time to avert a global catastrophe.

When it comes to the climate-energy threat, countries have widely different interests that frustrate efforts at preventative action. Fossil fuel-rich countries have the most to lose from decarbonization and not surprisingly some of these have resisted efforts to reach a global agreement, especially in the first two decades of negotiations. These included Saudi Arabia, Iran, Iraq, other members of the Organization of Petroleum Exporting Countries (OPEC), and also non-OPEC oil-rich countries like Russia and Mexico. Endowments of coal and natural gas are also important, with, for example, China, eastern Europe, and India relying on exploitation of these indigenous resources. Even wealthy countries, like the US, Canada, and Australia, are challenged by high concentrations of fossil fuel resources in specific regions, which in a federal system of government can cause intra-national political and even constitutional tensions if the national government is seen as too eager in setting and achieving GHG commitments issuing from international processes.

Poorer countries understand the need to reduce emissions, but they note that today's wealthier countries got that way by exploiting the high quality of fossil fuels to industrialize their economies and improve living conditions. To forgo that path, poorer countries expect to get help with the substantial costs of developing carbon-free energy systems. Richer countries agree they need to help the poorer countries. But the support poorer countries request at the annual negotiations far exceeds the amount wealthier countries feel they can provide. These countries have provided some support for adoption of low-emission technologies. But the amount is far below what is needed to divert developing countries from constructing coal and natural gas plants for generating electricity and expanding transportation infrastructure and vehicles dependent on gasoline and diesel, not to mention relying on emissions-intensive steel,

cement, and aluminum production processes. Without this effort, as Figure 4.1 shows, the global growth in GHG emissions will be increasingly driven by growing fossil fuel consumption in developing countries, a point I return to in the final chapter.



**Figure 4.1** Global CO<sub>2</sub> emissions: developed and developing countries

Thus, just as national self-interest biased the views of countries on how to bear the burden of pre-emptively stopping Hitler and Nazi Germany, national self-interest looms large in global GHG negotiations. There is no universally agreed criterion for allocating the cost of global GHG reduction among countries. Poorer countries often argue that the cost should be allocated according to “ability to pay” and “historical responsibility.” This means that wealthier countries, which have been emitting GHGs since the start of the industrial revolution in the 18th century, should bear much of the cost. Countries with low per capita emissions, which are usually but not always poorer, argue that each human should have the same allocation of atmospheric rights for GHGs. This would mean that countries with higher per capita emissions should quickly reduce their emissions and make polluter pay transfers to other countries during that transformation.

At one time, this implied that wealthier countries should pay more as the greater polluters. However, China is now in an interesting situation. While three decades ago it squarely fit the description of a poorer, low-

emission country, its dramatic economic expansion between 1985 and 2015 led to an equally dramatic increase in its GHG emissions. The expansion depended in part on the rapid construction of coal-fired electricity plants and emission-intensive steel and cement plants such that today China's CO<sub>2</sub> emissions exceed those of the US and EU combined.

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In 1992, I was appointed to the *China Council for International Cooperation on Environment and Development* as one of six foreign experts on its energy sub-group. The council's mission is to foster long-term collaboration between foreign experts and senior Chinese officials and academics in advising the Chinese government on improving environmental performance and living standards. Over the years I served on the council, I participated in various energy-related assignments. My last assignment was as co-chair in 2009 of a task-force on sustainable use of coal. We delivered our final recommendations to Premier Wen Jiabao in November 2009, just before he left to participate in the failed Copenhagen climate conference.<sup>10</sup>

My two decades of engagement with Chinese researchers, bureaucrats, politicians, and, increasingly, non-government organizations have been fascinating. I experienced the changing views of Chinese people as their country rapidly evolved from a poor, technologically backward and internationally insecure nation to an increasingly modern, wealthy, and self-assured world player. This has also been reflected in their changing views of energy, trade, global responsibility, and climate. While the Chinese may still refer to themselves as a poor nation that must prioritize economic growth to better people's lives, that message is combined with recognition of the country's status as a major power with global responsibilities.

My first assignment in 1992 for the council was focused on coal. Back then, our team of six Chinese and six foreign experts recommended to the Chinese government that it eliminate its large coal subsidies, which would raise the price of coal for electricity plants, industry, and even households (much coal was burned in homes for heating and cooking). This would reduce coal consumption, favoring cleaner but more expensive fuels. The government graciously thanked us, and did nothing. We

also designed environmental taxes that the government should apply to fuels, including coal, to reflect their environmental damages. The government graciously thanked us, and did nothing. And we designed a renewable electricity mandate, a policy that would require state-run electricity firms throughout the country to attain a minimum level of renewable electricity generation, an amount that would rise over time to slow and even reduce coal use. Again, the government graciously thanked us, and did nothing.

The years went by and we earnestly forged on. Then, in 1997, the Kyoto Protocol happened, and the Chinese government flipped. In rapid succession, it implemented all three of our recommended policies: it cut coal subsidies; introduced modest, but rising, environmental charges on some energy-related pollutants; and implemented a renewable electricity mandate. (For this work, I still have my thank-you letter from the Chinese president.) The government even gave us new marching orders, asking for advice on developing carbon capture and storage so that coal could be used with minimal carbon pollution.

I was dumbfounded by the swift reaction to Kyoto. I didn't see why the government would respond this way when the protocol required nothing of China. Five years of collaboration had brought us quite close to our Chinese counterparts, so we asked them to candidly explain their government's actions.

"It's obvious. We don't trust the rich countries."

"What do you mean? They've required nothing of you. Kyoto is a free-ride for developing countries."

"But rich countries cannot be trusted. They seem to be getting serious about climate change. They will come after us with tariffs and trade sanctions. We need to be one step ahead."

This created a sense of optimism. Even if Kyoto was deeply flawed, it might nonetheless set the stage for something better. It clearly had symbolic value for the Chinese. They were already anticipating the kind of trade pressures that would follow as countries like the US imposed costs on its own industry and moved to protect that industry from its competitors in countries with less stringent GHG policies.

But for reasons I have already explained, Kyoto fizzled out after the election of President George W. Bush and the 2001 terrorist attacks. The

prospect for global collective action diminished. The Chinese grasped this new reality and we returned to the old pattern on the China Council. Our next policy proposals were again graciously accepted and ignored. With the Chinese economy steaming along, coal power plant construction reached record levels, as did the growth of carbon pollution. A golden opportunity for preventative action was missed.

The effect elsewhere in the world was predictable. In developed countries like mine, one increasingly heard that tiresome refrain: “Why should we do anything when the Chinese are completing at least one coal-fired power plant per week?” It was tiresome, but it had a ring of truth. To be effective, preventative action on GHG emissions has to be global. But countries of the world could not voluntarily agree on climate fairness.

I have not been involved directly in China for the last decade. But from a distance, the change during this period has been remarkable. The expansion of coal-fired power has finally abated. The government now aggressively develops wind, solar, hydropower, biofuels, other renewables, and nuclear power. It is using more natural gas, which at least has less emissions than coal. China is a major exporter of wind turbines and photovoltaic cells, and the world’s largest producer and consumer of electric cars.

Without a global GHG treaty, China became in just 20 years the single biggest cause of rapidly rising global emissions. Now, still without a treaty, China is becoming the most important developer and adopter of the technologies that are essential for reversing the path of those emissions. Looking back, I can’t help wondering about China’s development path had we been able to preventatively address this global collective action problem two decades ago.

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I believe today, as I did two decades ago, that a *voluntary* international agreement to deeply de-carbonize the global energy system in a few decades is extremely unlikely. While I appreciate the efforts of the negotiators, I believe that the threat of trade barriers and carbon tariffs is essential for achieving a significant global effort within the next decade. Otherwise, like people, countries have a strong self-interest bias

which prevents them from voluntarily accepting what other countries argue is their fair allocation of the burden of transforming the global energy system.

If we cannot hope for this, what can we realistically hope for? First, we can no longer talk about pre-emptive action. Unfortunately, just as the global community failed in the 1930s to pre-emptively avoid major harm from Hitler, we failed in the 1990s and 2000s to act in time to avoid all the harms from our GHG emissions. Today's higher atmospheric CO<sub>2</sub> concentration, plus the effect of emissions in the coming years from recently built fossil fuel infrastructure, is causing damages that will intensify over the next few decades, even if all GHG emissions stopped today.

If we continue for another decade on our current GHG trajectory, the parallels with Hitler are even stronger. At some point, the negative impacts will be so great that citizens in many countries will compel their governments to unilaterally close coal plants and ban sales of gasoline cars, even without a global treaty. Perhaps we are on the cusp of this stage of the struggle, given the increasingly aggressive unilateral decarbonization efforts of some countries.

If we abandon the myth that humans can reduce GHGs in a way that seems fair to everyone, those countries making a significant effort to reduce emissions would now levy tariffs on imports from countries that are not, regardless of whether these latter are rich or poor. In his book, *Global Warming Gridlock*, David Victor explains how climate-leading jurisdictions could join forces in applying carbon tariffs to imports from climate-laggard countries whose economies have high emissions.<sup>11</sup> As the trading power of these 'climate clubs' increases, the incentives for laggard countries to join their GHG-reducing efforts also increases, as Bill Nordhaus explains in a recent article titled, "Climate Clubs: Overcoming Free-riding in International Climate Policy."<sup>12</sup>

Had China faced carbon tariffs from importing countries 20 years ago, its energy development path would have differed significantly. Today, it is rapidly developing zero-emissions electricity sources. But had there been carbon tariffs imposed by Europe and the US, which almost happened in the mid-2000s, China would have started much

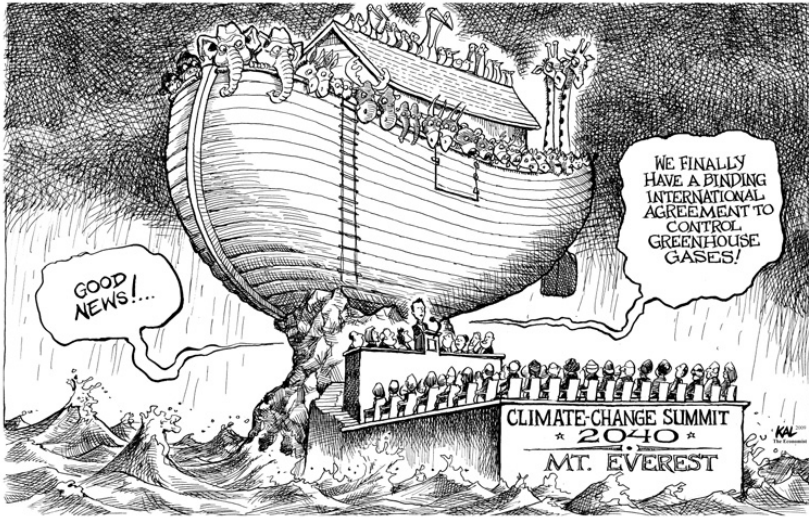
earlier, and built far fewer coal plants. Its economy may have grown more slowly, and the Chinese government would have complained bitterly and justifiably about unfair treatment by wealthy countries. But the Chinese would also have accelerated low-carbon technological development and adoption just as they are doing now, with much fewer of the GHG emissions that today impose costs on everyone, including themselves.

Who will take the lead in creating climate clubs? Perhaps the US will start its own climate club. In that regard, I note that every US climate bill proposal, including the Waxman-Markey bill, contained tariff-like mechanisms imposed on imports from countries that insufficiently regulated or priced their own emissions. Some say the wording in these bills was directed at China, with its rapidly growing emissions at the time. During the presidency of Barack Obama, it looked like the US and China might start their own club. While they did not advance to discussions of carbon tariffs, they signed an agreement in 2014 to limit their GHG emissions, which helped form the basis for the wider Paris agreement in 2015. Needless to say, President Trump stopped further progress.

Perhaps the first climate club with carbon tariffs will be Europe. Perhaps it will be an eclectic mix of middle-sized countries like France, the UK, Scandinavia, and Canada. Perhaps it will be China in concert with these other countries. While the game-changing development of a climate club does not seem likely in the near term, its chances for generating an effective collective effort by some countries seems substantially better than the global voluntary consensus approach of the annual UN-led negotiations.

Will climate clubs with carbon tariffs be fair to developing countries? This is unlikely, given that the citizens of wealthier countries are only willing to transfer a small percentage of their GDP to help people in developing countries. There will be modest support. But not nearly the amount that developing countries would find fair. Thus, global progress on decarbonization, when it finally happens, will likely involve a combination of carrots and sticks, namely a combination of modest financial support with substantial carbon tariffs.





**Figure 4.2** Cartoon by Kallaughner, K. 2009. Climate Change Summit 2040. *The Economist* (November 19)

Will developing countries be better off with this approach relative to a continuation of ineffective international negotiations? Yes, definitely. First, the costs of forgoing the use of coal and oil are falling thanks to the efforts of wealthier countries and now China to cut their emissions. This means that zero-emission energy will be less costly for a developing country than it would have been for China to have pursued two decades ago. Second, the impacts of climate change are becoming increasingly severe, so the prevention of GHG emissions has greater value. Developing countries are less well equipped to handle the impacts of droughts, heat waves, wildfires, hurricanes, floods, and disease. If we prevent the worst effects of climate change, even though not achieved in a perfectly equitable way, developing countries will be far better off.

From a global equity perspective, the scenario I propose is not ideal. But since that ideal scenario is extremely unlikely, we cannot hold the urgent need to act hostage to our wishes for global fairness. People in poorer countries will be better off if key powers take the lead on the GHG threat and don't allow anyone to free-ride. For it is the poorest people in the poorest countries who will experience most brutally the impacts from

our reckless emissions of GHGs and our multi-decade inability to take globally effective preventative action, just as it was often the poorest and most helpless people who suffered the consequences of our global failure to prevent the rise of Nazi Germany and the disaster of World War II.

Demanding that the global climate agreement only happen if it is seen as equitable by every country on the planet is to ensure that it won't happen. Those who demand this need to look in the mirror when it comes to allocating blame for a continued global failure that is now especially harming the poorest people on the planet. And this failure to make unpopular decisions two decades ago has had another unfortunate repercussion. It has bought time for those who profit from rising GHG emissions to convince political leaders and the public in fossil fuel-rich jurisdictions and fossil fuel-dependent regions to accept actions that keep us on this disastrous path, as we'll see in the next chapter.