## Climate cp

The member nations of the World Trade Organization should implement the climate change prevention measures proposed in the Azevêdo 15 card

Azevêdo 15 [(Roberto Azevêdo was the sixth Director-General of the WTO. His appointment took effect on 1 September 2013 for a four-year term. In February 2017, WTO members reappointed him for a second term, which began on 1 September 2017. He stepped down as Director-General a year before the expiry of his mandate.)Guardian, 11-23-2015, "World trade has an important role in combating climate change," <https://www.theguardian.com/business/economics-blog/2015/nov/23/world-trade-important-role-low-carbon-economy-wto>] ED

Like most economic activity, trade is often linked to carbon emissions, but the world cannot stop trading – not least as trade is essential in achieving many other shared goals. Trade can help to improve the efficiency of production, it can improve food security and, above­ all, it has proven to be one of the best anti-­poverty tools in history. Trade played a key role in helping us reach the [millennium development goal to cut extreme poverty by half](https://www.theguardian.com/global-development/2015/jul/06/united-nations-extreme-poverty-millennium-development-goals)– and it is a cross-­cutting element in many of the new [sustainable development goals](https://www.theguardian.com/global-development/sustainable-development-goals) agreed at the UN in September, so this work will continue.

**The challenge is not to stop trading but to ensure that trade is an ally in the fight against climate change.** We need to create a virtuous circle of trade and environmental policies which promote sustainable production and consumption while being pro­-growth and development.

It is just over 20 years since the signing of the United Nations Framework Convention on Climate Change in 1992 – and it is exactly 20 years since the WTO was created. The world has witnessed a profound transformation in the debate on trade and the environment since then – and a degree of convergence between the two. While international trade flows have increased dramatically over this period, the green economy has been built into business models and investment in renewable energy has been mainstreamed. Standards and technical regulations, which are so vital for the functioning of markets and trade, have followed suit with strengthened environmental requirements.

So how can we ensure that trade policy plays its full part in future? First, **we must improve the dissemination of and access to climate­-friendly technologie**s, **goods and services which support the transition towards a low­ carbon economy.** In some countries, import tariffs on products such as solar water heaters are over 20%, and wind turbines over 15% –­ much higher than the average tariff of 9%. **Making environmental goods and services cheaper and more accessible would help countries to leapfrog outmoded technologies and move quickly to apply climate-­friendly alternatives.**

A **group of WTO members**, who account for the majority of global trade in environmental goods, are negotiating an environmental goods agreement to lower their trade barriers on a number of important environmental products. **Success here would help to disseminate cutting-­edge technologies,** such as those identified by the Intergovernmental Panel on Climate Change (IPCC), at much lower costs while **also stimulating innovation and strengthening the green economy around the world. Although these tariff reductions are being taken forward by a group of WTO members, the benefits would apply to the whole WTO membership.**

Second, we can make trade more efficient overall. Trade is often linked to carbon emissions – particularly through international transportation. Although 80% of trade volume utilises sea transport which has the lowest level of emissions of any form of transport, there is scope to do more. The International Maritime Organisation and the International Civil Aviation Organisation are working to find a global solution to emissions in the maritime and aviation sectors – and we should support these efforts. By streamlining customs processes, we also can reduce some transport emissions and cut the energy required to keep perishable goods fresh while they wait to cross the border.

The WTO’s trade facilitation agreement will deliver this while also helping businesses to grow – green businesses included – and reducing trading costs by over 14% on average, and more for the poorest countries. Associated with every environmental good is a dense value chain of other goods and services suppliers. **A wind turbine, for instance, consists of more than 8,000 component parts. Cutting the time that it takes to move these parts across borders would lower costs and help make climate ­friendly technologies more available. I hope that green businesses will use this opportunity.**

The international community is facing a historic test. We must ensure that the trade, development and environmental agendas complement each other. I am optimistic that we will rise to the challenge.

## Innovation DA

#### The pharma industry is strong now but patents are key for continued economic growth. Batell and PhRMA 14:

Batell and PhRMA {Battelle is the world’s largest nonprofit independent research and development organization, providing innovative solutions to the world’s most pressing needs through its four global businesses: Laboratory Management, National Security, Energy, Environment and Material Sciences, and Health and Life Sciences. The Pharmaceutical Research and Manufacturers of America (PhRMA) represents the country’s leading pharmaceutical research and biotechnology companies, which are devoted to inventing medicines that allow patients to live longer, healthier, and more productive lives.}, 14 – “The U.S. Biopharmaceutical Industry: Perspectives on Future Growth and The Factors That Will Drive It,” http://phrma-docs.phrma.org/sites/default/files/pdf/2014-economic-futures-report.pdf//marlborough-wr//

Compared to other capital-intensive, advanced manufacturing industries in the U.S., the biopharmaceutical industry is a leader in R&D investment, IP generation, venture capital investment, and R&D employment. Policies and infrastructure that helped foster these innovative activities have allowed the U.S. to seize global leadership in biopharmaceutical R&D over the past 30 years. However, as this report details, other countries are seeking to compete with the U.S. by borrowing and building upon some of these pro-innovation policies to improve their own operating environment and become more favorable to biopharmaceutical companies making decisions about where to locate their R&D and manufacturing activities. A unique contribution of this report was the inclusion of the perspective of senior-level strategic planning executives of biopharmaceutical companies regarding what policy areas they see as most likely to impact the favorability of the U.S. business operating environment. The executives cited the following factors as having the most impact on the favorability of the operating environment and hence, potential growth of the innovative biopharmaceutical industry in the U.S.: • Coverage and payment policies that support and encourage medical innovation • A well-functioning, science-based regulatory system • Strong IP protection and enforcement in the U.S. and abroad The top sub-attribute identified as driving future biopharmaceutical industry growth in the U.S. cited by executives was a domestic IP system that provides adequate patent rights and data protection. Collectively, these factors underscore the need to reduce uncertainties and ensure adequate incentives for the lengthy, costly, and risky R&D investments necessary to develop new treatments needed by patients and society to address our most costly and challenging diseases. With more than 300,000 jobs at stake between the two scenarios, the continued growth and leadership of the U.S. innovative biopharmaceutical industry cannot be taken for granted. Continued innovation is fundamental to U.S. economic well-being and the nation’s ability to compete effectively in a globalized economy and to take advantage of the expected growth in demand for new medicines around the world. Just as other countries have drawn lessons from the growth of the U.S. biopharmaceutical sector, the U.S. needs to assess how it can improve the environment for innovation and continue to boost job creation by increasing R&D investment, fostering a robust talent pool, enhancing economic growth and sustainability, and continuing to bring new medicines to patients.

#### COVID has kept patents and innovation strong, but continued protection is key to innovation by incentivizing biomedical research – it’s also crucial to preventing counterfeit medicines, economic collapse, and fatal diseases, which independently turns case. Macdole and Ezell 4-29:

Jaci Mcdole and Stephen Ezell {Jaci McDole is a senior policy analyst covering intellectual property (IP) and innovation policy at the Information Technology and Innovation Foundation (ITIF). She focuses on IP and its correlations to global innovation and trade. McDole holds a double BA in Music Business and Radio-Television with a minor in Marketing, an MS in Education, and a JD with a specialization in intellectual property (Southern Illinois University Carbondale). McDole comes to ITIF from the Institute for Intellectual Property Research, an organization she co-founded to study and further robust global IP policies. Stephen Ezell is vice president, global innovation policy, at the Information Technology and Innovation Foundation (ITIF). He comes to ITIF from Peer Insight, an innovation research and consulting firm he cofounded in 2003 to study the practice of innovation in service industries. At Peer Insight, Ezell led the Global Service Innovation Consortium, published multiple research papers on service innovation, and researched national service innovation policies being implemented by governments worldwide. Prior to forming Peer Insight, Ezell worked in the New Service Development group at the NASDAQ Stock Market, where he spearheaded the creation of the NASDAQ Market Intelligence Desk and the NASDAQ Corporate Services Network, services for NASDAQ-listed corporations. Previously, Ezell cofounded two successful innovation ventures, the high-tech services firm Brivo Systems and Lynx Capital, a boutique investment bank. Ezell holds a B.S. from the School of Foreign Service at Georgetown University, with an honors certificate from Georgetown’s Landegger International Business Diplomacy program.}, 21 - ("Ten Ways Ip Has Enabled Innovations That Have Helped Sustain The World Through The Pandemic," Information Technology & Innovation Foundation, 4-29-2021, https://itif.org/publications/2021/04/29/ten-ways-ip-has-enabled-innovations-have-helped-sustain-world-through)//marlborough-wr/

To better understand the role of IP in enabling solutions related to COVID-19 challenges, this report relies on 10 case studies drawn from a variety of nations, technical fields, and firm sizes. This is but a handful of the thousands of IP-enabled innovations that have sprung forth over the past year in an effort to meet the tremendous challenges brought on by COVID-19 globally. From a paramedic in Mexico to a veteran vaccine manufacturing company in India and a tech start-up in Estonia to a U.S.-based company offering workplace Internet of Things (IoT) services, small and large organizations alike are working to combat the pandemic. Some have adapted existing innovations, while others have developed novel solutions. All are working to take the world out of the pandemic and into the future. The case studies are: Bharat Biotech: Covaxin Gilead: Remdesivir LumiraDX: SARS-COV-2 Antigen POC Test Teal Bio: Teal Bio Respirator XE Ingeniería Médica: CápsulaXE Surgical Theater: Precision VR Tombot: Jennie Starship Technologies: Autonomous Delivery Robots Triax Technologies: Proximity Trace Zoom: Video Conferencing As the case studies show, IP is critical to enabling innovation. Policymakers around the world need to ensure robust IP protections are—and remain—in place if they wish their citizens to have safe and innovative solutions to health care, workplace, and societal challenges in the future. THE ROLE OF INTELLECTUAL PROPERTY IN R&D-INTENSIVE INDUSTRIES Intangible assets, such as IP rights, comprised approximately 84 percent of the corporate value of S&P 500 companies in 2018.4 For start-ups, this means much of the capital needed to operate is directly related to IP (see Teal Bio case study for more on this). IP also plays an especially important role for R&D-intensive industries.5 To take the example of the biopharmaceutical industry, it is characterized by high-risk, time-consuming, and expensive processes including basic research, drug discovery, pre-clinical trials, three stages of human clinical trials, regulatory review, and post-approval research and safety monitoring. The drug development process spans an average of 11.5 to 15 years.6 For every 5,000 to 10,000 compounds screened on average during the basic research and drug discovery phases, approximately 250 molecular compounds, or 2.5 to 5 percent, make it to preclinical testing. Out of those 250 molecular compounds, approximately 5 make it to clinical testing. That is, 0.05 to 0.1 percent of drugs make it from basic research into clinical trials. Of those rare few which make it to clinical testing, less than 12 percent are ultimately approved for use by the U.S. Food and Drug Administration (FDA).7 In addition to high risks, drug development is costly, and the expenses associated with it are increasing. A 2019 report by the Deloitte Center for Health Solutions concluded that since 2010 the average cost of bringing a new drug to market increased by 67 percent.8 Numerous studies have examined the substantial cost of biopharmaceutical R&D, and most confirm investing in new drug development requires $1.7 billion to $3.2 billion up front on average.9 A 2018 study by the Coalition for Epidemic Preparedness found similar risks and figures for vaccines, stating, “In general, vaccine development from discovery to licensure can cost billions of dollars, can take over 10 years to complete, and has an average 94 percent chance of failure.”10 Yet, a 2010 study found that 80 percent of new drugs—that is, the less than 12 percent ultimately approved by the FDA—made less than their capitalized R&D costs.11 Another study found that only 1 percent (maybe three new drugs each year) of the most successful 10 percent of FDA approved drugs generate half of the profits of the entire drug industry.12 To say the least, biopharmaceutical R&D represents a high-stakes, long-term endeavor with precarious returns. Without IP protection, biopharmaceutical manufacturers have little incentive to take the risks necessary to engage in the R&D process because they would be unable to recoup even a fraction of the costs incurred. Diminished revenues also result in reduced investments in R&D which means less research into cancer drugs, Alzheimer cures, vaccines, and more. IP rights give life-sciences enterprises the confidence needed to undertake the difficult, risky, and expensive process of life-sciences innovation secure in the knowledge they can capture a share of the gains from their innovations, which is indispensable not only to recouping the up-front R&D costs of a given drug, but which can generate sufficient profits to enable investment in future generations of biomedical innovation and thus perpetuate the enterprises into the future.13 THE IMPORTANCE OF INTELLECTUAL PROPERTY TO INNOVATION Although anti-IP proponents have attacked biopharmaceutical manufacturers particularly hard, the reality is all IP-protected innovations are at risk if these rights are ignored, or vitiated. Certain arguments have shown a desire for the term “COVID-19 innovations” to include everything from vaccines, therapeutics, diagnostics, and PPE to biotechnology, AI-related data, and educational materials.14 This could potentially open the floodgates to invalidate IP protection on many of the innovations highlighted in this report. However, much of the current discussion concerning IP focuses almost entirely on litigation fears or R&D incentives. Although R&D is an important aspect of IP, as previously mentioned, these discussions ignore the fact that IP protection can be—and often is—used for other purposes, including generating initial capital to create a company and begin manufacturing and, more importantly, using licensing agreements and IP to track the supply chain and ensure quality control of products. This report highlights but a handful of the thousands of IP-enabled innovations that have sprung forth over the past year in an effort to meet the tremendous challenges brought on by COVID-19 globally. In 2018, Forbes identified counterfeiting as the largest criminal enterprise in the world.15 The global struggle against counterfeit and non-regulated products, which has hit Latin America particularly hard during the pandemic, proves the need for safety and quality assurance in supply chains.16 Some communities already ravaged by COVID-19 are seeing higher mortality rates related to counterfeit vaccines, therapeutics, PPE, and cleaning and sanitizing products.17 Polish authorities discovered vials of antiwrinkle treatment labeled as COVID-19 vaccines. 18 In Mexico, fake vaccines sold for approximately $1,000 per dose.19 Chinese and South African police seized thousands of counterfeit vaccine doses from warehouses and manufacturing plants.20 Meanwhile, dozens of websites worldwide claiming to sell vaccines or be affiliated with vaccine manufacturers have been taken down.21 But the problem is not limited to biopharmaceuticals. The National Intellectual Property Rights Coordination Center has recovered $48 million worth of counterfeit PPE and other products.22 Collaborative efforts between law enforcement and manufacturers have kept numerous counterfeits from reaching the population. In countries with strong IP protection, the chances of counterfeit products reaching the market are significantly lower. This is largely because counterfeiting tends to be an IP-related issue, and these countries generally provide superior means of tracking the supply chain through trademarks, trade secrets, and licensing agreements. This enables greater quality control and helps manufacturers maintain a level of public confidence in their products. By controlling the flow of knowledge associated with IP, voluntary licensing agreements provide innovators with opportunities to collaborate, while ensuring their partners are properly equipped and capable of producing quality products. Throughout this difficult time, the world has seen unexpected collaborations, especially between biopharmaceutical companies worldwide such as Gilead and Eva Pharma or Bharat Biotech and Ocugen, Inc. Throughout history, and most significantly in the nineteenth century through the widespread development of patent systems and the ensuing Industrial Revolution, IP has contributed toward greater economic growth.23 This is promising news as the world struggles for economic recovery. A 2021 joint study by the EU Intellectual Property Office (EUIPO) and European Patent Office (EPO) shows a strong, positive correlation between IP rights and economic performance.24 It states that “IP-owning firms represent a significantly larger proportion of economic activity and employment across Europe,” with IP-intensive industries contributing to 45 percent of gross domestic product (GDP) (€6.6 trillion; US$7.9 trillion).25 The study also shows 38.9 percent of employment is directly or indirectly attributed to IP-intensive industries, and IP generates higher wages and greater revenue per employee, especially for small-to-medium-sized enterprises.26 That concords with the United States, where the Department of Commerce estimated that IP-intensive industries support at least 45 million jobs and contribute more than $6 trillion dollars to, or 38.2 percent of, GDP.27 In 2020, global patent filings through the World Intellectual Property Organization’s (WIPO) Patent Cooperation Treaty (PCT) system reached a record 275,900 filings amidst the pandemic, growing 4 percent from 2019.28 The top-four nations, which accounted for 180,530 of the patent applications, were China, the United States, Japan, and Korea, respectively.29 While several countries saw an increase in patent filings, Saudi Arabia and Malaysia both saw significant increases in the number of annual applications, with the top two filing growths of 73 percent and 26 percent, respectively.30 The COVID-19 pandemic slowed a lot of things, but it certainly couldn’t stop innovation. There are at least five principal benefits strong IP rights can generate, for both developing and developed countries alike.31 First, stronger IP protection spurs the virtuous cycle of innovation by increasing the appropriability of returns, enabling economic gain and catalyzing economic growth. Second, through patents—which require innovators to disclose certain knowledge as a condition of protection—knowledge spillovers build a platform of knowledge that enables other innovators. For instance, studies have found that the rate of return to society from corporate R&D and innovation activities is at least twice the estimated returns that each company itself receives.32 Third, countries with robust IP can operate more efficiently and productively by using IP to determine product quality and reduce transaction costs. Fourth, trade and foreign direct investment enabled and encouraged by strong IP protection offered to enterprises from foreign countries facilitates an accumulation of knowledge capital within the destination economy. That matters when foreign sources of technology account for over 90 percent of productivity growth in most countries.33 There’s also evidence suggesting that developing nations with stronger IP protections enjoy the earlier introduction of innovative new medicines.34 And fifth, strong IP boosts exports, including in developing countries.35 Research shows a positive correlation between stronger IP protection and exports from developing countries as well as faster growth rates of certain industries.36 The following case studies illustrate these benefits of IP and how they’ve enabled innovative solutions to help global society navigate the COVID-19 pandemic.

#### This sets a precedent that spills over to all future diseases – Hopkins 21:

Jared S. Hopkins {Jared S. Hopkins is a New York-based reporter for The Wall Street Journal covering the pharmaceutical industry, including companies such as Pfizer Inc. and Merck & Co. He previously was a health-care reporter at Bloomberg News and an investigative reporter at the Chicago Tribune. Jared started his career at The Times-News in Twin Falls, Idaho covering politics. In 2014, he was a finalist for the Livingston Award For Young Journalists for an investigation into charities founded by professional athletes. In 2011, he was a finalist for the Pulitzer Prize in Investigative Reporting for a series about neglect at a residential facility for disabled kids. Jared graduated from the Merrill College of Journalism at the University of Maryland-College Park with a bachelor's degree in journalism}, 21 - ("U.S. Support for Patent Waiver Unlikely to Cost Covid-19 Vaccine Makers in Short Term ," WSJ, 5-7-2021, https://www.wsj.com/articles/u-s-support-for-patent-waiver-unlikely-to-cost-covid-19-vaccine-makers-in-short-term-11620414260)//marlborough-wr/

The Biden administration’s unexpected support for [temporarily waiving Covid-19 vaccine patents](https://www.wsj.com/articles/u-s-backs-waiver-of-intellectual-property-protection-for-covid-19-vaccines-11620243518?mod=article_inline) won’t have an immediate financial impact on the companies making the shots, industry officials and analysts said. Yet the decision could mark a shift in Washington’s longstanding support of the industry’s valuable intellectual property, patent-law experts said. A waiver, if it does go into effect, may pose long-term risks to the vaccine makers, analysts said. [Moderna](https://www.wsj.com/market-data/quotes/MRNA) Inc., [MRNA -4.12%](https://www.wsj.com/market-data/quotes/MRNA?mod=chiclets) [Pfizer](https://www.wsj.com/market-data/quotes/PFE) Inc. [PFE -3.10%](https://www.wsj.com/market-data/quotes/PFE?mod=chiclets) and other vaccine makers weren’t counting on sales from the developing countries that would gain access to the vaccine technology, analysts said. If patents and other crucial product information behind the technology is made available, it would take at least several months before shots were produced, industry officials said. Yet long-term Covid-19 sales could take a hit if other companies and countries gained access to the technologies and figured out how to use it. Western drugmakers could also confront competition sooner for other medicines they are hoping to make using the technologies. A World Trade Organization waiver could also set a precedent for waiving patents for other medicines, a long-sought goal of some developing countries, patient groups and others to try to reduce the costs of prescription drugs. “It sets a tremendous precedent of waiving IP rights that’s likely going to come up in future pandemics or in other serious diseases,” said David Silverstein, a patent lawyer at Axinn, Veltrop & Harkrider LLP who advises drugmakers. “Other than that, this is largely symbolic.”

#### Pharmaceutical innovation is key to protecting against future pandemics, bioterrorism, and antibiotic resistance.

Marjanovic and Fejiao ‘20 Marjanovic, Sonja, and Carolina Feijao. Sonja Marjanovic, Ph.D., Judge Business School, University of Cambridge. Carolina Feijao, Ph.D. in biochemistry, University of Cambridge; M.Sc. in quantitive biology, Imperial College London; B.Sc. in biology, University of Lisbon. "Pharmaceutical Innovation for Infectious Disease Management: From Troubleshooting to Sustainable Models of Engagement." (2020). [Quality Control]

As key actors in the healthcare innovation landscape, pharmaceutical and life sci-ences companies have been called on to develop medicines, vaccines and diagnostics for pressing public health challenges. The COVID-19 crisis is one such challenge, but there are many others. For example, MERS, SARS, Ebola, Zika and avian and swine flu are also infectious diseases that represent public health threats. Infectious agents such as anthrax, smallpox and tularemia could present threats in a **bioterrorism con-text**.1 The general threat to public health that is posed by **antimicrobial resistance** is also **well-recognised** as an area **in need of pharmaceutical innovation**. Innovating in response to these challenges does not always align well with pharmaceutical industry commercial models, shareholder expectations and compe-tition within the industry. However, the expertise, networks and infrastructure that industry has within its reach, as well as public expectations and the moral imperative, make pharmaceutical companies and the wider life sciences sector an **indispensable** partner in the search for solutions that save lives. This perspective argues for the need to establish more sustainable and scalable ways of incentivising pharmaceu-tical innovation in response to infectious disease threats to public health. It considers both past and current examples of efforts to mobilise pharmaceutical innovation in high commercial risk areas, including in the context of current efforts to respond to the COVID-19 pandemic. In global pandemic crises like COVID-19, the urgency and scale of the crisis – as well as the spotlight placed on pharmaceutical companies – mean that contributing to the search for effective medicines, vaccines or diagnostics is **essential** for socially responsible companies in the sec-tor.2 It is therefore unsurprising that we are seeing indus-try-wide efforts unfold at unprecedented scale and pace. Whereas there is always scope for more activity, industry is currently contributing in a variety of ways. Examples include pharmaceutical companies donating existing com-pounds to assess their utility in the fight against COVID-19; screening existing compound libraries in-house or with partners to see if they can be repurposed; accelerating tri-als for potentially effective medicine or vaccine candidates; and in some cases rapidly accelerating in-house research and development to discover new treatments or vaccine agents and develop diagnostics tests.3,4 Pharmaceutical companies are collaborating with each other in some of these efforts and participating in global R&D partnerships (such as the Innovative Medicines Initiative effort to accel-erate the development of potential therapies for COVID-19) and supporting national efforts to expand diagnosis and testing capacity and ensure affordable and ready access to potential solutions.3,5,6 The primary purpose of such innovation is to **benefit patients** and wider **population health**. Although there are also reputational benefits from involvement that can be realised across the industry, there are likely to be rela-tively few companies that are ‘commercial’ winners. Those who might gain substantial revenues will be under pres-sure not to be seen as profiting from the pandemic. In the United Kingdom for example, GSK has stated that it does not expect to profit from its COVID-19 related activities and that any gains will be invested in supporting research and long-term pandemic preparedness, as well as in developing products that would be affordable in the world’s poorest countries.7 Similarly, in the United States AbbVie has waived intellectual property rights for an existing com-bination product that is being tested for therapeutic poten-tial against COVID-19, which would support affordability and allow for a supply of generics.8,9 Johnson & Johnson has stated that its potential vaccine – which is expected to begin trials – will be available on a not-for-profit basis during the pandemic.10 Pharma is mobilising substantial efforts to rise to the COVID-19 challenge at hand. However, we need to consider how pharmaceutical innovation for responding to emerging infectious diseases can best be enabled beyond the current crisis. Many public health threats (including those associated with other **infectious diseases**, **bioterror-ism** agents **and antimicrobial resistance**) are **urgently in need of pharmaceutical innovation**, **even if their impacts are not as visible** to society **as COVID**-19 is in the imme-diate term. The pharmaceutical industry has responded to previous public health emergencies associated with infec-tious disease in recent times – for example those associated with Ebola and Zika outbreaks.11 However, it has done so to a lesser scale than for COVID-19 and with contribu-tions from fewer companies. Similarly, levels of activity in response to the threat of antimicrobial resistance are still **low**.12 There are important policy questions as to whether – and how – industry could engage with such public health threats to an even greater extent under improved innova-tion conditions.

#### Bioterror causes extinction---quick innovation key

Farmer 17 (“Bioterrorism could kill more people than nuclear war, Bill Gates to warn world leaders” http://www.telegraph.co.uk/news/2017/02/17/biological-terrorism-could-kill-people-nuclear-attacks-bill/)

Bioterrorists could one day kill hundreds of millions of people in an attack more deadly than nuclear war, Bill Gates will warn world leaders. Rapid advances in genetic engineering have opened the door for small terrorism groups to tailor and easily turn biological viruses into weapons. A resulting disease pandemic is currently one of the most deadly threats faced by the world, he believes, yet governments are complacent about the scale of the risk. Speaking ahead of an address to the Munich Security Conference, the richest man in the world said that while governments are concerned with the proliferation of nuclear and chemical weapons, they are overlooking the threat of biological warfare. Mr Gates, whose charitable foundationis funding research into quickly spotting outbreaks and speeding up vaccine production, said the defence and security establishment “have not been following biology and I’m here to bring them a little bit of bad news”. Mr Gates will today (Saturday) tell an audience of international leaders and senior officers that the world’s next deadly pandemic “could originate on the computer screen of a terrorist”. He told the Telegraph: “Natural epidemics can be extremely large. Intentionally caused epidemics, bioterrorism, would be the largest of all. “With nuclear weapons, you’d think you would probably stop after killing 100million. Smallpox won’t stop. Because the population is naïve, and there are no real preparations. That, if it got out and spread, would be a larger number.” He said developments in genetic engineering were proceeding at a “mind-blowing rate”. Biological warfare ambitions once limited to a handful of nation states are now open to small groups with limited resources and skills. He said: “They make it much easier for a non-state person. It doesn’t take much biology expertise nowadays to assemble a smallpox virus. Biology is making it way easier to create these things.” The increasingly common use of gene editing technology would make it difficult to spot any potential terrorist conspiracy. Technologies which have made it easy to read DNA sequences and tinker with them to rewrite or tweak genes have many legitimate uses. He said: “It’s not like when someone says, ‘Hey I’d like some Plutonium’ and you start saying ‘Hmmm.. I wonder why he wants Plutonium?’” Mr Gates said the potential death toll from a disease outbreak could be higher than other threats such as climate change or nuclear war. He said: “This is like earthquakes, you should think in order of magnitudes. If you can kill 10 people that’s a one, 100 people that’s a two... Bioterrorism is the thing that can give you not just sixes, but sevens, eights and nines. “With nuclear war, once you have got a six, or a seven, or eight, you’d think it would probably stop. [With bioterrorism] it’s just unbounded if you are not there to stop the spread of it.” By tailoring the genes of a virus, it would be possible to manipulate its ability to spread and its ability to harm people. Mr Gates said one of the most potentially deadly outbreaks could involve the humble flu virus. It would be relatively easy to engineer a new flu strain combining qualities from varieties that spread like wildfire with varieties that were deadly. The last time that happened naturally was the 1918 Spanish Influenza pandemic, which went on to kill more than 50 million people – or nearly three times the death toll from the First World War. By comparison, the recent Ebola outbreak in West Africa which killed just over 11,000 was “a Richter Scale three, it’s a nothing,” he said. But despite the potential, the founder of Microsoft said that world leaders and their militaries could not see beyond the more recognised risks. He said: “Should the world be serious about this? It is somewhat serious about normal classic warfare and nuclear warfare, but today it is not very serious about bio-defence or natural epidemics.” He went on: “They do tend to say ‘How easy is it to get fissile material and how accurate are the plans out on the internet for dirty bombs, plutonium bombs and hydrogen bombs?’ “They have some people that do that. What I am suggesting is that the number of people that look at bio-defence is worth increasing.” Whether naturally occurring, or deliberately started, it is almost certain that a highly lethal global pandemic will occur within our lifetimes, he believes. But the good news for those contemplating the potential damage is that the same biotechnology can prevent epidemics spreading out of control. Mr Gates will say in his speech that most of the things needed to protect against a naturally occurring pandemic are the same things needed to prepare for an intentional biological attack. Nations must amass an arsenal of new weapons to fight such a disease outbreak, including vaccines, drugs and diagnostic techniques. Being able to develop a vaccine as soon as possible against a new outbreak is particularly important and could save huge numbers of lives, scientists working at his foundation believe.

## Politics DA

**Biden not pushingthe waiver**

**Ramachandran, 8-21**, 21, Reshma Ramachandran is a family medicine physician and fellow at the National Clinician Scholars Program at Yale University. She sits on the board of the non-profit organization Universities Allied for Essential Medicines North America, and is a member of the People's Vaccine Alliance and co-host of the Free The Vaccine campaign. Asia Russell is the Executive Director of the non-profit Health GAP, a member of the People's Vaccine Alliance and partner organization of the Free The Vaccine campaign, CNN, Biden's failing global Covid-19 response, https://www.cnn.com/2021/08/21/opinions/biden-global-covid-response-ramachandran-russell/index.html

Reallocating excess doses and relying on pharmaceutical companies looking to profit off the prolongation of the pandemic that has driven demand for additional booster doses will not be enough to end this crisis. **Despite his promise to support an IP waiver for Covid-19 vaccines, Biden has done seemingly little to encourage his counterparts in other wealthy nations including the European Union and United Kingdom to do the same**; instead, these nations have continued to obstruct the waiver at the World Trade Organization (WTO). Going beyond a single statement of support, President Biden should champion this proposal and leverage his strong personal connections with allies to ensure its prompt passage and enactment at the WTO.

**Biden going weak on IPR burns capital and trades-off with other agenda items. Arun 21:**

TK Arun, April 15, 2021, Economic times, View: With the US sitting on a pile of vaccines, Biden needs to change tack on policy that harms the world, https://economictimes.indiatimes.com/news/economy/foreign-trade/view-with-the-us-sitting-on-a-pile-of-vaccines-biden-needs-to-changes-tack-on-policy-that-harms-the-world/articleshow/82058647.cms?from=mdr

So, what **can Biden** do, to scale up vaccine production? Remove export restrictions. Buy out the intellectual property rights (IPRs) of successful vaccine candidates, strip vaccine know-how of patents and royalties**,** and make it available as a global public good. This is tactically superior to waiving IPR at the World Trade Organisation (WTO) for Biden, as the **Republicans have already started a campaign against such threats to capitalism and Biden needs all the political capital he has to push his American Jobs Plan through the Senate.**

#### The infrastructure and budget bills are on the knife’s edge to pass.

Grandoni & Dennis 8/11 - Dino Grandoni and Brady Dennis [Environment reporters], “Biden aims for sweeping climate action as infrastructure, budget bills advance,” *Washington Post* (Web). 8/11/21. Accessed 9/15/21. <https://www.washingtonpost.com/climate-environment/2021/08/10/biden-climate-congress/> AT

The Senate approved on Tuesday a sweeping bipartisan $1.2 trillion infrastructure bill with funding for many public works meant to cut climate-warning emissions. A day later, Democrats in the chamber took a major step to adopt an even bigger, $3.5 trillion budget bill supporting yet more programs for cleaning up power plants and cars.¶ Each, if passed, would invest billions of dollars in the sort of clean energy transition the United States must make to have any chance of hitting the goal set by President Biden to cut the nation’s emissions by at least 50 percent by the end of this decade.¶ “This was one of the most significant legislative days we’ve had in a long time here,” Senate Majority Leader Charles E. Schumer (D-N.Y.) told reporters Wednesday.¶ But both bills face a potentially bumpy road ahead. Democrats still need to draft in committees the details of their massive budget reconciliation package over the coming weeks, with not a single vote to spare in the 50-50 split Senate. The bipartisan public-works bill, meanwhile, still needs approval from the House, where progressive Democrats hold significant sway.¶ The moves on Capitol Hill come as hundreds of scientists detailed this week the intensifying fires, floods and other catastrophes that will continue to worsen until humans dramatically scale back greenhouse gas emissions.¶ Scientists assembled by the United Nations made clear in a landmark report Monday that time is running out for the world to make immediate and dramatic cuts to emissions produced by the burning of fossil fuels and other human activities. U.N. Secretary General António Guterres called the sobering, sprawling report from the Intergovernmental Panel on Climate Change a “code red for humanity.”

#### Infrastructure solves the grid – it’s vulnerable now and requires investment

Gozdziewski 3/22 - Charles J. Gozdziewski is the American Council of Engineering Companies' (ACEC) Board Chair. He is also the Chairman Emeritus of Hardesty & Hanover in New York where he oversees transportation planning, construction inspection and support services for highways; all types of movable, fixed and railroad bridges; as well as special structures. 2021 (“Our nation's critical infrastructure is dangerously vulnerable”, available online at <https://thehill.com/changing-america/opinion/544330-our-nations-critical-infrastructure-is-dangerously-vulnerable?amp>, Changing America is a subsidiary of the Hill)

The recent historic snowfall in Texas and the ensuing failure of the state's power grid have laid bare what we in the engineering industry have known for a long time - our nation's critical infrastructure is dangerously vulnerable to a wide range of threats. We must act quickly and comprehensively to make our infrastructure more resilient because those threats will only become more severe in the future.

While the focus right now is justifiably on the energy sector and the power grid, all of our nation's infrastructure systems - transportation, water, and power - are at risk from extreme weather. Climate change lies at the heart of this challenge, and to mitigate its effects, we must have robust investment to fund the design and construction of the resilient infrastructure our country needs.

As engineers, infrastructure is who we are. It is critically entwined in everything we do - from embracing smart cities, to establishing safe protocols in buildings for a post-COVID world, to preparing for the much needed Fourth Industrial Revolution. The need for resilience, sustainability, reliability, and flexibility will become even more vital as we move into the future.

As leaders in the engineering and design industry, we have both a stake in and a valuable perspective on the policy discussion on infrastructure. Moreover, we are a critical partner in the implementation of that policy and the repair and upgrading of all aspects of our physical infrastructure - including roads, bridges, freight rail, ports, electrical grids, and Internet provision. Each of these components is critical to the health of our physical and built environment.

Yet our expertise is worth nothing if the public sector clients we serve lack certainty from the federal government that there will be consistent, predictive funding in place to finance the infrastructure improvements we need. No designs will be drawn up and no dirt will be moved. It is imperative that our federal lawmakers act on a transformative infrastructure plan before the current law expires in September.

Investing now in a long-term infrastructure bill will pay dividends, not only to mitigate the effects of a changing climate, but to help our nation recover from the COVID-19 pandemic. Engineers play a substantial role in the health of the national economy. According to the ACEC Research Institute's Industry Impact Series of reports, the Engineering and Design Services sector currently employs 1.5 million Americans directly. Those employees and their companies collectively support another 3 million jobs in the various contracting and other firms with which they work. The Institute's latest study found that each new job created in the Engineering and Design Services industry indirectly creates two additional jobs in related sectors across the economy.

The data shows that investments in infrastructure that support engineering jobs pave the way for economic opportunity. What's more, the designs our industry creates help improve the built environment, making it more resilient to climate change. This is a win-win for society, creating a more equitable, environmentally sound, and prosperous built environment resulting in job creation and economic mobility. We look forward to working with policyholders, members of Congress, and the Biden-Harris Administration to develop sustainable solutions that benefit the country as a whole in the weeks ahead.

#### Loss of critical infrastructure causes extinction

Friedemann 16 (Alice Friedemann, transportation expert, founder of EnergySkeptic.com and author of “When Trucks Stop Running, Energy and the Future of Transportation,” worked at American Presidential Lines for 22 years, where she developed computer systems to coordinate the transit of cargo between ships, rail, trucks, and consumers, citing Dr. Peter Vincent Pry. Pry is executive director of the Task Force on National and Homeland Security, a Congressional advisory board dedicated to achieving protection of the United States from electromagnetic pulse and other threats. Dr. Pry is also the director of the United States Nuclear Strategy Forum, an advisory body to Congress on policies to counter weapons of mass destruction. Dr. Pry has served on the staffs of the Congressional Commission on the Strategic Posture of the United States, the Commission to Assess the Threat to the U.S. from an EMP Attack, the House Armed Services Committee, as an intelligence officer with the CIA, and as a verification analyst at the U.S. Arms Control and Disarmament Agency. 1-24-16, accessed 1/1/19 “Electromagnetic pulse threat to infrastructure (U.S. House hearings)” <http://energyskeptic.com/2016/the-scariest-u-s-house-session-ever-electromagnetic-pulse-and-the-fall-of-civilization/>)

Modern civilization cannot exist for a protracted period without electricity. Within days of a blackout across the U.S., a blackout that could encompass the entire planet, emergency generators would run out of fuel, telecommunications would cease as would transportation due to gridlock, and eventually no fuel. Cities would have no running water and soon, within a few days, exhaust their food supplies. Police, Fire, Emergency Services and hospitals cannot long operate in a blackout. Government and Industry also need electricity in order to operate. The EMP Commission warns that a natural or nuclear EMP event, given current unpreparedness, would likely result in societal collapse. Terrorists, criminals, and even lone individuals can build a non-nuclear EMP weapon without great trouble or expense, working from Unclassified designs publicly available on the internet, and using parts available at any electronics store. In 2000, the Terrorism Panel of the House Armed Services Committee sponsored an experiment, recruiting a small team of amateur electronics enthusiasts to attempt constructing a radiofrequency weapon, relying only on unclassified design information and parts purchased from Radio Shack. The team, in 1 year, built two radiofrequency weapons of radically different designs. One was designed to fit inside the shipping crate for a Xerox machine, so it could be delivered to the Pentagon mail room where (in those more unguarded days before 9/11) it could slowly fry the Pentagon’s computers. The other radiofrequency weapon was designed to fit inside a small Volkswagon bus, so it could be driven down Wall Street and disrupt computers— and perhaps the National economy. Both designs were demonstrated and tested successfully during a special Congressional hearing for this purpose at the U.S. Army’s Aberdeen Proving Ground. Radiofrequency weapons are not merely a hypothetical threat. Terrorists, criminals, and disgruntled individuals have used home-made radiofrequency weapons. The U.S. military and foreign militaries have a wide variety of such weaponry. Moreover, non-nuclear EMP devices that could be used as radiofrequency weapons are publicly marketed for sale to anyone, usually advertised as ‘‘EMP simulators.’’ For example, one such simulator is advertised for public sale as an ‘‘EMP Suitcase.’’ This EMP simulator is designed to look like a suitcase, can be carried and operated by one person, and is purpose-built with a high energy radiofrequency output to destroy electronics. However, it has only a short radius of effect. Nonetheless, a terrorist or deranged individual who knows what he is doing, who has studied the electric grid for a major metropolitan area, could—armed with the ‘‘EMP Suitcase’’— black out a major city. A CLEAR AND PRESENT DANGER. An EMP weapon can be used by state actors who wish to level the battlefield by neutralizing the great technological advantage enjoyed by U.S. military forces. EMP is also the ideal means, the only means, whereby rogue states or terrorists could use a single nuclear weapon to destroy the United States and prevail in the War on Terrorism or some other conflict with a single blow. The EMP Commission also warned that states or terrorists could exploit U.S. vulnerability to EMP attack for coercion or blackmail: ‘‘Therefore, terrorists or state actors that possess relatively unsophisticated missiles armed with nuclear weapons may well calculate that, instead of destroying a city or military base, they may obtain the greatest political-military utility from one or a few such weapons by using them—or threatening their use—in an EMP attack.’’ The EMP Commission found that states such as Russia, China, North Korea, and Iran have incorporated EMP attack into their military doctrines, and openly describe making EMP attacks against the United States. Indeed, the EMP Commission was established by Congress partly in response to a Russian nuclear EMP threat made to an official Congressional Delegation on May 2, 1999, in the midst of the Balkans crisis. Vladimir Lukin, head of the Russian delegation and a former Ambassador to the United States, warned: ‘‘Hypothetically, if Russia really wanted to hurt the United States in retaliation for NATO’s bombing of Yugoslavia, Russia could fire an SLBM and detonate a single nuclear warhead at high altitude over the United States. The resulting EMP would massively disrupt U.S. communications and computer systems, shutting down everything.’’ China’s military doctrine also openly describes EMP attack as the ultimate asymmetric weapon, as it strikes at the very technology that is the basis of U.S. power. Where EMP is concerned, ‘‘The United States is more vulnerable to attacks than any other country in the world’’: ‘‘Some people might think that things similar to the ‘Pearl Harbor Incident’ are unlikely to take place during the information age. Yet it could be regarded as the ‘Pearl Harbor Incident’ of the 21st Century if a surprise attack is conducted against the enemy’s crucial information systems of command, control, and communications by such means as… electromagnetic pulse weapons… Even a superpower like the United States, which possesses nuclear missiles and powerful armed forces, cannot guarantee its immunity…In their own words, a highly computerized open society like the United States is extremely vulnerable to electronic attacks from all sides. This is because the U.S. economy, from banks to telephone systems and from power plants to iron and steel works, relies entirely on computer networks… When a country grows increasingly powerful economically and technologically…it will become increasingly dependent on modern information systems… The United States is more vulnerable to attacks than any other country in the world.’’ Iran—the world’s leading sponsor of international terrorism—in military writings openly describes EMP as a terrorist weapon, and as the ultimate weapon for prevailing over the West: ‘‘If the world’s industrial countries fail to devise effective ways to defend themselves against dangerous electronic assaults, then they will disintegrate within a few years… American soldiers would not be able to find food to eat nor would they be able to fire a single shot.’’ The threats are not merely words. The EMP Commission assesses that Russia has, as it openly declares in military writings, probably developed what Russia describes as a ‘‘Super-EMP’’ nuclear weapon—specifically designed to generate extraordinarily high EMP fields in order to paralyze even the best protected U.S. strategic and military forces. China probably also has Super-EMP weapons. North Korea too may possess or be developing a Super-EMP nuclear weapon, as alleged by credible Russian sources to the EMP Commission, and by open-source reporting from South Korean military intelligence. But any nuclear weapon, even a low-yield first generation device, could suffice to make a catastrophic EMP attack on the United States. Iran, although it is assessed as not yet having the bomb, is actively testing missile delivery systems and has practiced launches of its best missile, the Shahab–III, fuzing for high- altitude detonations, in exercises that look suspiciously like training for making EMP attacks. As noted earlier, Iran has also practiced launching from a ship a Scud, the world’s most common missile—possessed by over 60 nations, terrorist groups, and private collectors. A Scud might be the ideal choice for a ship-launched EMP attack against the United States intended to be executed anonymously, to escape any last-gasp U.S. retaliation. Unlike a nuclear weapon detonated in a city, a high-altitude EMP attack leaves no bomb debris for forensic analysis, no perpetrator ‘‘fingerprints.’’ Under present levels of preparedness, communications would be severely limited, restricted mainly to those few military communications networks that are hardened against EMP. Today’s microelectronics are the foundation of our modern civilization, but are over 1 million times more vulnerable to EMP than the far more primitive and robust electronics of the 1960s, that proved vulnerable during nuclear EMP tests of that era. Tests conducted by the EMP Commission confirmed empirically the theory that, as modern microelectronics become ever smaller and more efficient, and operate ever faster on lower voltages, they also become ever more vulnerable, and can be destroyed or disrupted by much lower EMP field strengths. Microelectronics and electronic systems are everywhere, and run virtually everything in the modern world. All of the civilian critical infrastructures that sustain the economy of the United States, and the lives of 310 million Americans, depend, directly or indirectly, upon electricity and electronic systems. Of special concern is the vulnerability to EMP of the Extra-High-Voltage (EHV) transformers, that are indispensable to the operation of the electric grid. EHV transformers drive electric current over long distances, from the point of generation to consumers (from the Niagara Falls hydroelectric facility to New York City, for example). The electric grid cannot operate without EHV transformers—which could be destroyed by an EMP event. The United States no longer manufactures EHV transformers. They must be manufactured and imported from overseas, from Germany or South Korea, the only two nations in the world that manufacture such transformers for export. Each EHV transformer must be custom-made for its unique role in the grid. A single EHV transformer typically requires 18 months to manufacture. The loss of large numbers of EHV transformers to an EMP event would plunge the United States into a protracted blackout lasting years, with perhaps no hope of eventual recovery, as the society and population probably could not survive for even 1 year without electricity. Another key vulnerability to EMP are Supervisory Control And Data Acquisition systems (SCADAs). SCADAs essentially are small computers, numbering in the millions and ubiquitous everywhere in the critical infrastructures, that perform jobs previously performed by hundreds of thousands of human technicians during the 1960s and before, in the era prior to the microelectronics revolution. SCADAs do things like regulating the flow of electricity into a transformer, controlling the flow of gas through a pipeline, or running traffic control lights. SCADAs enable a few dozen people to run the critical infrastructures for an entire city, whereas previously hundreds or even thousands of technicians were necessary. Unfortunately, SCADAs are especially vulnerable to EMP. EHV transformers and SCADAs are the most important vulnerabilities to EMP, but are by no means the only vulnerabilities. Each of the critical infrastructures has their own unique vulnerabilities to EMP: The National electric grid, with its transformers and generators and electronic controls and thousands of miles of power lines, is a vast electronic machine—more vulnerable to EMP than any other critical infrastructure. Yet the electric grid is the most important of all critical infrastructures, and is in fact the keystone supporting modern civilization, as it powers all the other critical infrastructures. As of now it is our technological Achilles Heel. The EMP Commission found that, if the electric grid collapses, so too will collapse all the other critical infrastructures. But, if the electric grid can be protected and recovered, so too all the other critical infrastructures can also be restored. Transportation is a critical infrastructure because modern civilization cannot exist without the goods and services moved by road, rail, ship, and air. Cars, trucks, locomotives, ships, and aircraft all have electronic components, motors, and controls that are potentially vulnerable to EMP. Gas stations, fuel pipelines, and refineries that make petroleum products depend upon electronic components and cannot operate without electricity. Given our current state of unpreparedness, in the aftermath of a natural or nuclear EMP event, transportation systems would be paralyzed. Traffic control systems that avert traffic jams and collisions for road, rail, and air depend upon electronic systems, that the EMP Commission discovered are especially vulnerable to EMP. Communications is a critical infrastructure because modern economies and the cohesion and operation of modern societies depend to a degree unprecedented in history on the rapid movement of information—accomplished today mostly by electronic means. Telephones, cell phones, personal computers, television, and radio are all directly vulnerable to EMP, and cannot operate without electricity. Satellites that operate at Low-Earth-Orbit (LEO) for communications, weather, scientific, and military purposes are vulnerable to EMP and to collateral effects from an EMP attack. Within weeks of an EMP event, the LEO satellites, which comprise most satellites, would probably be inoperable. Banking and finance are the critical infrastructure that sustain modern economies. Whether it is the stock market, the financial records of a multinational corporation, or the ATM card of an individual—financial transactions and record keeping all depend now at the macro- and micro-level upon computers and electronic automated systems. Many of these are directly vulnerable to EMP, and none can operate without electricity. The EMP Commission found that an EMP event could transform the modern electronic economy into a feudal economy based on barter. Food has always been vital to every person and every civilization. The critical infrastructure for producing, delivering, and storing food depends upon a complex web of technology, including machines for planting and harvesting and packaging, refrigerated vehicles for long-haul transportation, and temperature-controlled warehouses. Modern technology enables over 98 percent of the U.S. National population to be fed by less than 2 percent of the population. Huge regional warehouses that resupply supermarkets constitute the National food reserves, enough food to feed the Nation for 30–60 days at normal consumption rates, the warehoused food preserved by refrigeration and temperature control systems that typically have enough emergency electrical power (diesel or gas generators) to last only about an average of 3 days. Experience with storm-induced blackouts proves that when these big regional food warehouses lose electrical power, most of the food supply will rapidly spoil. Farmers, less than 2 percent of the population as noted above, cannot feed 310 million Americans if deprived of the means that currently makes possible this technological miracle. Water too has always been a basic necessity to every person and civilization, even more crucial than food. The critical infrastructure for purifying and delivering potable water, and for disposing of and treating waste water, is a vast networked machine powered by electricity that uses electrical pumps, screens, filters, paddles, and sprayers to purify and deliver drinkable water, and to remove and treat waste water. Much of the machinery in the water infrastructure is directly vulnerable to EMP. The system cannot operate without vast amounts of electricity supplied by the power grid. A natural or nuclear EMP event would immediately deprive most of the U.S. National population of running water. Many natural sources of water—lakes, streams, and rivers—would be dangerously polluted by toxic wastes from sewage, industry, and hospitals that would backflow from or bypass wastewater treatment plants, that could no longer intake and treat pollutants without electric power. Many natural water sources that would normally be safe to drink, after an EMP event, would be polluted with human wastes including feces, industrial wastes including arsenic and heavy metals, and hospital wastes including pathogens. Emergency services such as police, fire, and hospitals are the critical infrastructure that upholds the most basic functions of government and society—preserving law and order, protecting property and life. Experience from protracted storm-induced blackouts has shown, for example in the aftermath of Hurricanes Andrew and Katrina, that when the lights go out and communications systems fail and there is no gas for squad cars, fire trucks, and ambulances, the worst elements of society and the worst human instincts rapidly takeover. The EMP Commission found that, given our current state of unpreparedness, a natural or nuclear EMP event could create anarchic conditions that would profoundly challenge the existence of social order.

## Case

#### AT WTO collapse

#### Their own card gives massive thumpers to the aff--Their card’s only ev for why the waiver is k2 to the WTO is because the people who are pushing for the waiver say so. Marlborough reads yellow

**Meyer 21** David Meyer [Senior writer at Fortune Magazine], June 18, 2021, "The WTO's survival hinges on the COVID-19 vaccine patent debate, waiver advocates warn," <https://fortune.com/2021/06/18/wto-covid-vaccines-patents-waiver-south-africa-trips/> // ash

The World Trade Organization knows all about crises. Former U.S. President Donald Trump threw a wrench into its core function of resolving trade disputes—a blocker that President Joe Biden has not yet removed—and there is widespread dissatisfaction over the fairness of the global trade rulebook. The 164-country organization, under the fresh leadership of Nigeria's [Ngozi Okonjo-Iweala](https://fortune.com/2021/04/01/wto-chief-covid-vaccine-manufacturers-poor-countries/), has a lot to fix.

**<Where Canyon Crest starts reading>**

However, one crisis is more pressing than the others: the battle over COVID-19 vaccines, and whether the protection of their patents and other intellectual property should be temporarily lifted to boost production and end the pandemic sooner rather than later.

According to some of those pushing for the waiver—which was originally proposed last year by India and South Africa—the WTO's future rests on what happens next.

"The credibility of the WTO will depend on its ability to find a meaningful outcome on this issue that truly ramps-up and diversifies production," says Xolelwa Mlumbi-Peter, South Africa's ambassador to the WTO.

"Final nail in the coffin"

The Geneva-based WTO isn't an organization with power, as such—it's a framework within which countries make big decisions about trade, generally by consensus. It's supposed to be the forum where disputes get settled, because all its members have signed up to the same rules. And one of its most important rulebooks is the Agreement on Trade-Related Aspects of Intellectual Property Rights, or TRIPS, which sprang to life alongside the WTO in 1995.

The WTO's founding agreement allows for rules to be waived in exceptional circumstances, and indeed this has happened before: its members agreed in 2003 to waive TRIPS obligations that were blocking the importation of cheap, generic drugs into developing countries that lack manufacturing capacity. (That waiver was effectively made permanent in 2017.)

Consensus is the key here.

Although the failure to reach consensus on a waiver could be overcome with a 75% supermajority vote by the WTO's membership, this would be an unprecedented and seismic event. In the case of the COVID-19 vaccine IP waiver, it would mean standing up to the European Union, and Germany in particular, as well as countries such as Canada and the U.K.—the U.S. recently flipped from opposing the idea of a waiver to supporting it, as did France.

It's a dispute between countries, but the result will be on the WTO as a whole, say waiver advocates.

"If, in the face of one of humanity's greatest challenges in a century, the WTO functionally becomes an obstacle as in contrast to part of the solution, I think it could be the final nail in the coffin" for the organization, says Lori Wallach, the founder of Public Citizen's Global Trade Watch, a U.S. campaigning group that focuses on the WTO and trade agreements.

"If the TRIPS waiver is successful, and people see the WTO as being part of the solution—saving lives and livelihoods—it could create goodwill and momentum to address what are still daunting structural problems."

#### countries benefit from free trade which is more beneficial than not having access to vaccines

#### counterplan solves---countries will no longer be mad about vaccines because there is not access

#### nonunique---countries have been mad at the WTO for decades despite antifree trade controversies---deindustrialization, the anti WTO protest in 1999

### Climate

#### no solvency—their card named numerous other problems that the WTO has to solve in addition to the climate which will come first

#### current UN climate panel proves that there are other international forms of climate coop

#### Warming’s inevitable –

#### A) Structural threshold.

Sherman 17 – citing the Mauna Loa Observatory (Carter; journalist for VICE, citing data from the Mauna Loa Observatory; 4/21/17; “The atmosphere now contains more carbon dioxide than in all of human history”; <https://news.vice.com/story/the-atmosphere-now-contains-more-carbon-dioxide-than-in-all-of-human-history>; VICE; accessed 5/6/17)

One of the most significant contributors to climate change shows no signs of slowing down. On Tuesday, Hawaii’s Mauna Loa Observatory found that there is now more planet-warming carbon dioxide in the atmosphere than ever previously recorded in human history — more than 410 parts per million. And as the atmosphere continues to trap more heat, Earth’s climate is quickly approaching numbers unseen in the past 50 million years. This number is likely to increase, since carbon dioxide emissions — a major contributor to climate change, as they block heat from leaving the atmosphere — can take anywhere between 20 and several hundred thousands years to disappear from the planet. So even though global carbon emissions have remained flat for the past three years, those emissions remain extremely difficult to eradicate. Before the industrial age, carbon dioxide levelled off at about 280 parts per million. But in 2013, the Mauna Loa Observatory found that carbon dioxide levels had permanently surpassed the 400 parts per million mark. Even at the time, that measurement was extraordinary, because the atmosphere hadn’t contained that much carbon dioxide in the past 10 to 15 million years. More than 195 countries pledged to cut down on their greenhouse gas emissions as part of the Paris climate accords, which aimed to help keep the global temperature from increasing two degrees Celsius — the temperature rise that scientists have long cited as an irreversible tipping point that could potentially leave the planet too hot for human habitation. This new carbon dioxide measurement is not good news for people hoping that effort is working. But it will likely have little impact on U.S. policy, as President Donald Trump already looks prepared to gut the United States’s participation in the Paris accords.

#### B) Best studies.

Johnston 17 (Ian; environmental correspondent for the Independent, citing William Nordhaus, Sterling Professor of Economics at Yale University and author of several books on climate change; 1/11/17; “Devastating global warming is inevitable due to inaction of international community, says leading economist”; <http://www.independent.co.uk/environment/deadly-global-warming-is-inevitable-due-to-inaction-feasible-rhetoric-climate-change-fight-paris-a7521111.html>; The Independent; accessed 1/12/16)

The world can no longer avoid dangerous global warming because countries have done little to tackle the problem apart from spout “rhetoric”, a leading economist has warned. Professor William Nordhaus, of Yale University in the US, said it was no longer practicably feasible to keep the level of warming to within two degrees Celsius above pre-industrial levels, the point at which climatologists believe the world will start to experience particularly dangerous climate change. This would see devastating storms, droughts, deadly heat waves and floods all become significantly more common, making some areas of the planet increasingly difficult for humans to inhabit. The US military, among others, has expressed concern about the security implications of the mass movements of people that such scenarios would likely bring about. Professor Nordhaus, a noted expert on the economics of climate change, wrote in a paper called Projections and Uncertainties About Climate Change in an Era of Minimal Climate Policies: “The international target for climate change with a limit of 2C appears to be infeasible with reasonably accessible technologies. “And this is the case even with very stringent and unrealistically ambitious abatement strategies. “This is so because of the inertia of the climate system, of rapid projected economic growth in the near term, and of revisions in several elements of the model. “A target of 2.5C is technically feasible but would require extreme virtually universal global policy measures.” He said in all the world only the European Union had introduced major policies designed to reduce global warming – but was scathing about what those would actually achieve. “Notwithstanding what may be called ‘The Rhetoric of Nations’, there has been little progress in taking strong policy measures,” Professor Nordhaus wrote. “For example, of the six largest countries or regions, only the EU has implemented national climate policies, and the policies of the EU today are very modest. “Moreover, from the perspective of political economy in different countries as of December 2016, the prospects of strong policy measures appear to be dimming rather than brightening.”

### trade

#### WTO isn't key to future trade AND its current mechanisms are resilient

Drezner 13

Daniel W. Drezner is professor of international politics at Tufts University's Fletcher School and a contributing editor to Foreign Policy, Foreign Policy, December 3, 2013, "The End of Multilateral Trade?", http://www.foreignpolicy.com/posts/2013/12/03/the\_end\_of\_multilateral\_trade

This kind of story is both overly optimistic and overly pessimistic about the state of the WTO. It's overly optimistic in assuming that, even if something is negotiated in Bali (and the odds aren't great of that happening), it's unlikely that the WTO will ever be the focal point for comprehensive trade talks ever again. Even getting agreement on the "easy" parts of Doha has been super-hard. There's very little upside to making the WTO the focal point of new talks, especially given that most of the regional and bilateral trade talks have been of the "open regionalism" variety.

On the other hand, the "slippery slope" argument of the WTO losing relevance is also way overplayed. Such a statement omits two very important facts. First, even if there's no further WTO-guided liberalization, the rounds negotiated to date constitute far more liberalization than what can be achieved in the future. In other words, the WTO rules still govern a lot of trade, and further liberalization won't erode the WTO's bailiwick that much.

Second, the WTO's Dispute Settlement Understanding remains the ne plus ultra of enforcement arrangements in global governance. Contrary to the WSJ story, there is zero evidence that WTO enforcement has weakened as Doha bogged down or as protectionism increased after 2008. That part of the trade system is still working pretty well.

For decades, trade commentary has implicitly embraced the "bicycle theory" - the belief that unless multilateral trade liberalization moves ahead, the entire global trade regime will collapse because of a lack of forward momentum. The last decade -- and particularly the post-2008 period -- suggests that there are limits to that rule of thumb. It is possible for the WTO to matter less on jump-starting multilateral trade negotiations while still mattering a great deal in enforcing the rules of the game.

#### The WTO doesn’t solve trade or conflict.

Hutchinson 13 — Martin Hutchinson, Business and Economics Editor at United Press International, Former Investment Banker at Citigroup, MBA from Harvard University, B.A. in Mathematics from Cambridge University, 2013 (“WTO Becoming Useless,” *Asia Times,* September 24th, Accessible Online at http://www.atimes.com/atimes/Global\_Economy/GECON-01-240913.html, Accessed On 09-28-2016)

It hasn't really worked as planned. In the prosperous 1990s, the WTO's trade adjudication mechanisms functioned well, but since 2001 it has become increasingly ineffectual. However, even at the top of the global boom in 1999, when a new round of trade talks was supposed to be launched, the meeting was disrupted by unexpected protests by the West's economic illiterates and the world's leaders wimped out of setting the new round in progress. After the shock of the 9/11 attacks, a new Doha Round was launched, but it has made little progress and is now moribund. There appear to be a few sticking-point issues, including (i) agriculture, where the pampered farmers of the US, the EU and Japan will not open their markets to cheaper Third World produce; (ii) services, where India, Brazil and many emerging markets will not open their markets to more-efficient Western producers; and (iii) intellectual property, where the emerging markets with some justification regard the patent and intellectual property systems of the West as vulgar systems of rent extraction. Since the 2008 recession, trade barriers have risen rather than fallen, with the WTO providing only feeble opposition. What's more, when the WTO needed a new leader in May 2013, instead of selecting a Mexican with a good track record, instrumental in negotiating the North American Free Trade Agreement, the world's emerging markets selected a protectionist Brazilian. (Each country in the WTO has one vote, a spurious excess of democracy. Voting should be trade-weighted, thereby encouraging countries to open their markets and contribute more to world trade.) Roberto Azevedo may surprise us, but it's more likely that he will bring to the WTO the protectionist, statist economic principles that have made Brazil ever the growth economy of the future, never except fleetingly of the present.

#### Interdependence doesn’t solve war — ideology outweighs and history disproves.

Kat 15 — Mazhid Kat, Ph.D. Candidate in International Relations at King's College London, (“A Conceptual Analysis of Realism in International Political Economy,” *E-IR*, April 16th, Accessible Online at [http://www.e-ir.info...itical-economy/](http://www.e-ir.info/2015/04/16/a-conceptual-analysis-of-realism-in-international-political-economy/), Accessed On 02-08-2016)

The main critics of realism are liberals. They argue that growing integration of the world economy and interdependence among states will create a more peaceful and stable global order because aggressive actions will lead to huge economic losses. However, this concept misses several points. Firstly, even greatly economically interdependent states may start wars with one another, as was seen with the British Empire and Germany in the beginning of the 20th century.[xxix] Moreover, interdependence is usually not perfectly symmetrical. In many cases, weak states become more dependent on major powers.[xxx] Leading powers, in turn, use their economic power to promote global regimes more favourable to themselves. Also, interdependence can le[a]d to economic crises becoming more wide spread, which in turn leads to negative consequences in different parts of the world.[xxxi] For instance, the Great Depression in the United States during the 1930s was one of the reasons for huge economic problems in Germany, which were used by Hitler in his rise to power. Finally, some states have ideologies which prevail over economic interests. For example, North Korea conducts a Juche policy of self-sufficiency and Russia continues to experience significant economic losses because of its imperialistic turn.

### Future pandemics

#### **No solvency—a waiver is not sufficient**

Lindsey 6/3 Brink Lindsey [Brink Lindsey is Vice President and Director of the Open Society Project at the Niskanen Center. Previously he was the Cato Institute's vice president for research], 6/3/2021, “Why intellectual property and pandemics don’t mix”, <https://www.brookings.edu/blog/up-front/2021/06/03/why-intellectual-property-and-pandemics-dont-mix/> //kangu

Waiving patent protections is certainly no panacea. What is needed most urgently is a massive drive of technology transfer, capacity expansion, and supply line coordination to bring vaccine supply in line with global demand. Dispensing with patents in no way obviates the need for governments to fund and oversee this effort.

Although focusing on these immediate constraints is vital, we cannot confine our attention to the short term. First of all, the COVID-19 pandemic is far from over. Although Americans can now see the light at the end of the tunnel thanks to the rapid rollout of vaccines, most of the world isn’t so lucky. The virus is [currently raging in India and throughout South America](https://www.nytimes.com/interactive/2021/world/covid-cases.html), overwhelming health care systems and inflicting suffering and loss on a horrific scale. And consider the fact that Australia, which has been successful in suppressing the virus, recently announced it was sticking to plans to keep its borders closed until mid-2022. Criticisms of the TRIPS waiver that focus only on the next few months are therefore short-sighted: this pandemic could well drag on long enough for elimination of patent restrictions to enable new vaccine producers to make a positive difference.

Furthermore, and probably even more important, this is almost certainly not the last pandemic we will face. Urbanization, the spread of factory-farming methods, and globalization all combine to increase the odds that a new virus will make the jump from animals to humans and then spread rapidly around the world. Prior to the current pandemic, the 21st century already saw outbreaks of SARS, H1N1, MERS, and Ebola. Everything we do and learn in the current crisis should be viewed from the perspective of getting ready for next time.

#### No solvency – There is no IP barrier in most countries. The fact that they are not manufacturing vaccine shows that they *can’t* without compulsory licensing.

**Mercurio 21**

Mercurio 2/12 - Bryan Mercurio; Chinese University of Hong Kong - Faculty of Law, ; 2-12-2021; "Wto Waiver From Intellectual Property Protection For Covid-19 Vaccines And Treatments: A Critical Review (February 12, 2021)”; Virginia Journal Of International Law Online (Forthcoming 2021), Available At Ssrn: Https://Ssrn.Com/Abstract=3789820 Or Http://Dx.Doi.Org/10.2139/Ssrn.3789820"; https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=3789820, accessed 7-21-2021; JPark

Second, the proposed waiver will do nothing to address the problem of lack of capacity or the transfer of technology and goodwill. Pharmaceutical companies have not applied for patents in the majority of developing countries – in such countries, any manufacturer is free to produce and market the vaccine inside the territory of that country or to export the vaccine to other countries where patents have not been filed.33 Patents cannot be the problem in the countries where no patent applications have been filed, but the lack of production in such countries points to the real problem – these countries lack manufacturing capacity and capability. While advanced pharmaceutical companies will have the technology, know-how and readiness to manufacture, store and transport complex vaccine formulations, such factories and logistics exist in only a handful of countries.34 Regardless of whether an IP waiver is granted, the remaining countries will be left without enhanced vaccine access and still reliant on imported supplies. With prices for the vaccine already very low, it is doubtful that generic suppliers will be able to provide the vaccine at significantly lower prices. Under such a scenario, the benefit of the waiver would go not to the countries in need but to the generic supplier who would not need to pay the licence fee or royalty to the innovator. Thus, the waiver would simply serve to benefit advanced generic manufacturers, most of which are located in a handful of countries, including China and Brazil as well as (unsurprisingly) India and South Africa. Countries would perhaps be better off obtaining the vaccine from suppliers that have negotiated a voluntary licence from the patent holder, as such licences include provisions for the transfer of technology, know-how and ongoing quality assurance support

#### No solvency – the problem is supply. IP has already been voluntarily licensed.

Tabarrok 21 **-** Alex Tabarrok (Bartley J. Madden Chair in Economics at the Mercatus Center and am a professor of economics at George Mason University). “Patents are Not the Problem!” Marginal Revolution. 6 May 2021. JDN. https://marginalrevolution.com/marginalrevolution/2021/05/ip-is-not-the-constraint.html

For the last year and a half I have been shouting from the rooftops, “invest in capacity, build more factories, shore up the supply lines, spend billions to save trillions.” Fortunately, some boffins in the Biden administration have found a better way, “the US supports the waiver of IP protections on COVID-19 vaccines to help end the pandemic.”¶ Waive IP protections. So simple. Why didn’t I think of that???¶ Patents are not the problem. All of the vaccine manufacturers are trying to increase supply as quickly as possible. Billions of doses are being produced–more than ever before in the history of the world. Licenses are widely available. AstraZeneca have licensed their vaccine for production with manufactures around the world, including in India, Brazil, Mexico, Argentina, China and South Africa. J&J’s vaccine has been licensed for production by multiple firms in the United States as well as with firms in Spain, South Africa and France. Sputnik has been licensed for production by firms in India, China, South Korea, Brazil and pending EMA approval with firms in Germany and France. Sinopharm has been licensed in the UAE, Egypt and Bangladesh. Novavax has licensed its vaccine for production in South Korea, India, and Japan and it is desperate to find other licensees but technology transfer isn’t easy and there are limited supplies of raw materials:¶ Virtually overnight, [Novavax] set up a network of outside manufacturers more ambitious than one outside executive said he’s ever seen, but they struggled at times to transfer their technology there amid pandemic travel restrictions. They were kicked out of one factory by the same government that’s bankrolled their effort. Competing with larger competitors, they’ve found themselves short on raw materials as diverse as Chilean tree bark and bioreactor bags. They signed a deal with India’s Serum Institute to produce many of their COVAX doses but now face the realistic chance that even when Serum gets to full capacity — and they are behind — India’s government, dealing with the world’s worst active outbreak, won’t let the shots leave the country.¶ Plastic bags are a bigger bottleneck than patents. The US embargo on vaccine supplies to India was precisely that the Biden administration used the DPA to prioritize things like bioreactor bags and filters to US suppliers and that meant that India’s Serum Institute was having trouble getting its production lines ready for Novavax. CureVac, another potential mRNA vaccine, is also finding it difficult to find supplies due to US restrictions (which means supplies are short everywhere). As Derek Lowe said:¶ Abolishing patents will not provide more shaker bags or more Chilean tree bark, nor provide more of the key filtration materials needed for production. These processes have a lot of potential choke points and rate-limiting steps in them, and there is no wand that will wave that complexity away.¶ Technology transfer has been difficult for AstraZeneca–which is one reason they have had production difficulties–and their vaccine uses relatively well understood technology. The mRNA technology is new and has never before been used to produce at scale. Pfizer and Moderna had to build factories and distribution systems from scratch. There are no mRNA factories idling on the sidelines. If there were, Moderna or Pfizer would be happy to license since they are producing in their own factories 24 hours a day, seven days a week (monopolies restrict supply, remember?). Why do you think China hasn’t yet produced an mRNA vaccine? Hint: it isn’t fear about violating IP. Moreover, even Moderna and Pfizer don’t yet fully understand their production technology, they are learning by doing every single day. Moderna has said that they won’t enforce their patents during the pandemic but no one has stepped up to produce because no one else can.¶ The US trade representative’s announcement is virtue signaling to the anti-market left and will do little to nothing to increase supply.

#### Turn: Reductions in IPR could result in unsafe or ineffective medicines. Turns solvency because too many people will be afraid of the vaccine to achieve herd immunity.

Crosby et al. 21Daniel Crosby, Evan Diamond, Isabel Fernandez De La Cuesta, Jamieson Greer, Jeffrey Telep, Brian White; Crosby specializes in international trade, investment and matters related to public international law. Diamond is a partner on our Intellectual Property, Patent, Trademark and Copyright Litigation team.; 3-5-2021; "Group of Nearly 60 WTO Members Seek Unprecedented Waiver from WTO Intellectual Property Protection for COVID-related Medical Products"; https://www.jdsupra.com/legalnews/group-of-nearly-60-wto-members-seek-2523821/, JD Supra, accessed 7-21-2021; JPark

Waiver risks uncontrolled use of patented technologies, without improving vaccine access. Pharmaceutical companies can provide, and have provided, licenses to distribute or scale-up production of COVID-19 vaccines and therapies at reduced cost. Such license agreements allow for expanded access in low- and middle-income countries, while also setting reasonable parameters so that patents and other IP rights are used to address the specific medical needs of the COVID-19 pandemic at hand, and not for other purposes. License agreements also allow for orderly technology transfer, including of unpatented “trade secret” information and other critical “know-how,” that may be essential to efficiently producing and scaling-up safe and effective versions of technologically complex vaccines and biologic drug products. Under the present TRIPS waiver proposal, however, member countries could try to exploit an extraordinarily broad scope of IP and copy patented technologies so long as they are “in relation to prevention, containment or treatment of COVID-19.” For example, under an expansive reading of the proposed waiver language, a member country could try to produce patented pharmaceutical compounds that have other indicated uses predating COVID-19, if such compounds had later been studied or experimentally used for potential symptomatic relief or antiviral activity in COVID-19 patients. The same risks may be faced by manufacturers of patented materials or devices that have multiple uses predating COVID-19, but also may be used as “personal protective equipment” or components thereof, or in other measures arguably relating to COVID-19 “prevention” or “containment.” At the same time, it is unclear how the proposed TRIPS waiver could provide the technology transfer and know-how critical for making the complex molecules and formulations constituting the various COVID-19 vaccines. Vaccine manufacture undertaken by an unauthorized party without the proper processes and controls could result in a different product that is potentially ineffective or results in unwanted health consequences. And even if an unauthorized manufacturer could overcome those substantial hurdles to reverse-engineer and scale up a safe and effective vaccine copy, it would likely take substantial time and a series of failures to do so. Notably, several of the original COVID-19 vaccine developers have recently faced low product yield and other manufacturing challenges during pre-commercial scale-up efforts and the initial months of commercial production.

#### No solvency - too many jurisdictional barriers, but the squo solves through cooperation and competition. Mercurio 6/24

Bryan Mercurio [Simon F.S. Li Professor of Law, The Chinese University of Hong Kong, Shatin, Hong Kong], 6-24-2021, "The IP Waiver for COVID-19: Bad Policy, Bad Precedent," IIC - International Review of Intellectual Property and Competition Law, [https://link.springer.com/article/10.1007/s40319-021-01083-5 accessed 8/12/2021](https://link.springer.com/article/10.1007/s40319-021-01083-5%20accessed%208/12/2021) //JH

The role of intellectual property rights (IPRs) and access to medicines is contentious. On the one hand, IPRs encourage investment, innovation and the advancement of health science. On the other hand, the limited-term monopoly rights can result in artificially high prices and become a barrier to access to medicines. While the wisdom of the IPRs system has at times been tested, it has proven its value in the current COVID-19 pandemic as IPRs played a large role in the rapid (and unprecedented) development and availability of multiple vaccines. Despite the success, India and South Africa proposed that the World Trade Organization (WTO) waive IPRs under the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) in order to increase access to vaccines and other COVID-19-related technologies.[Footnote1](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn1) ¶The proposal, tabled at a meeting of the TRIPS Council in October 2020, calls on Members to waive IPRs relating to and having an impact on the “prevention, containment or treatment of COVID-19”.[Footnote2](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn2) The proposal attracted support from the majority of developing country Members,[Footnote3](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn3) but was opposed by a handful of Members including the United States (US).[Footnote4](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn4) Given that consensus could not be reached within the deadline of 90 days as set out in Art. IX:3 of the Agreement Establishing the WTO, Members agreed to keep the waiver proposal on the agenda of the TRIPS Council in 2021.[Footnote5](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn5) ¶On 5 May 2021, the US reversed its position and announced that it would support a waiver for COVID-19 vaccines.[Footnote6](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn6) To be clear, this does not mean that the US supported the waiver as proposed by India and South Africa. Instead, the US has simply agreed to negotiate the perimeters of a waiver. Others, including the European Union (EU), Canada, Australia, Norway, Switzerland, the United Kingdom (UK) and even leading developing countries such as Brazil, Chile and Mexico remain opposed or lukewarm on the waiver.[Footnote7](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn7) The US dropping opposition does not mean the concerns of other Members will simply disappear – one would hope that these nations opposed the waiver for valid reasons and did not simply blindly follow the US. Indeed, many of the above-listed Members remain unconvinced that even such a draconian step as a waiver of IPRs would accomplish the goal of increased vaccine production.[Footnote8](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn8) For its part, the EU continues to favour an approach which makes better use of existing flexibilities available in the TRIPS Agreement.[Footnote9](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn9) ¶Thus, those expecting quick agreement on the waiver will be disappointed. Negotiations at the WTO are always difficult and lengthy, and US Trade Representative Katherine Tai acknowledged that the “negotiations will take time given the consensus-based nature of the institution and the complexity of the issues involved”.[Footnote10](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn10) Issues of negotiation will include the scope of the waiver. Whereas the original proposal and its amended form extend the waiver beyond patents and vaccines to include nearly all forms of IP (i.e. copyright,[Footnote11](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn11) industrial designs and trade secrets) as well as to all “health products and technologies including diagnostics, therapeutics, vaccines, medical devices, personal protective equipment, their materials or components, and their methods and means of manufacture for the prevention, treatment or containment of COVID-19”[Footnote12](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn12) (with no requirement on how or the extent to which they are related to or useful in combatting COVID-19), the US and others seem to support a waiver limited to patents and vaccines.[Footnote13](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn13) The length of the waiver will also be a contentious negotiating issue, with proponents seeking a virtual indefinite waiver lasting until the Membership agrees by consensus that it is no longer required – meaning even a single Member’s objection to ending the waiver would mean the waiver continues to remain in force[Footnote14](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn14) – as will the request that any action claimed to be taken under the waiver is outside the scope of the WTO’s dispute settlement mechanism.[Footnote15](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn15) These provisions will almost certainly be opposed by other Members, who would perhaps agree to a time-limited waiver which could be extended rather than an unchallengeable indefinite waiver which will be difficult to reverse. The proposal also fails to mention anything in relation to transparency and notification requirements and lacks safeguards against abuse or diversion. These points will likely also prove contentious in the negotiations. ¶With so many initial divergences and as yet undiscussed issues, the negotiations at best could be completed by the time of the next WTO Ministerial Conference, scheduled to begin on 20 November 2021. There is precedent in this regard, as previous TRIPS negotiations involving IP and pharmaceuticals were not fully resolved until the days before the Ministerial Conferences (in 2003 and 2005).[Footnote16](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn16) There is also a chance that the negotiations will continue past the calendar year 2021. ¶The chance for a swift negotiation diminished with the release of a revised proposal by India and South Africa on 22 May 2021. As mentioned above, the proposal contains no limit as to product coverage, scope, notification requirements or safeguards and proposes that the waiver will remain in effect for what could be an indefinite period. This was not a proposal designed to engender quick negotiations and a solution. Instead, the proposal perhaps reveals India’s and South Africa’s true intent to use the COVID-19 pandemic as an excuse to roll-back IPRs rather than a good-faith effort to rapidly increase access to lifesaving vaccines and treatments around the world. ¶It is not only the length of time which is an issue but also the ultimate impact of the waiver. A waiver simply means that a WTO Member would not be in violation of its WTO obligations if it does not protect and enforce the COVID-19-related IPRs for the duration of the waiver. The waiver would thus allow Members to deviate from their international obligations but not obligate Members to suspend protection and enforcement of the IPRs. Members like the US who support the waiver may not implement the necessary domestic legislation to waive IPRs within the jurisdiction. It is questionable whether the US could even legally implement the waiver given that IPRs are a matter of constitutional law.[Footnote17](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn17) ¶The US announcement remains meaningful, however, for two reasons. First, it signals a departure from the longstanding and bipartisan support for the pharmaceutical industry, which for decades has been instrumental in setting the IP and trade agenda.[Footnote18](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn18) Second, it sends a strong signal that the US does not oppose others from waiving patent protection for vaccines. This shift may also be part of a broader and alternative strategy to increase vaccine production and distribution, whereby the US is not viewing or supporting waiver negotiations as a legal tool but more so as a threat to encourage vaccine innovators to increase production. In essence, the desired reaction would be that the IP holders increase efforts to license, transfer technology and expand manufacturing – exactly what the world needs at this time. ¶Alan Beattie, writing in the Financial Times, believes that even the proponents of the waiver desire this outcome: “having talked to the proponents, [the original proposal] was always a tactical position designed to start a debate, identify possible support and flush out opponents rather than a likely outcome. To that end, it seems to have worked rather well.”[Footnote19](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn19) India’s negotiator to the TRIPS Agreement and longtime WTO staffer, Jayashree Watal, agrees, stating the proposal is an “indirect attempt to put pressure on the original manufacturers to cooperate [and license production to companies in their countries]”.[Footnote20](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn20) This view makes sense, as the proponents (and their supporters) have not even pointed to one credible instance where IPRs have blocked the production of a COVID-19 vaccine. Moreover, it is well known that the leading vaccines using mRNA are difficult to reproduce and having the “blueprints” does not guarantee safe and effective production. Simply stated, if a pastry chef provides instructions on how to bake a cake, the cake they bake is still going to be better than cakes baked by novices using the exact same recipe. The know-how and trade secrets are the key ingredient to the manufacture of quality, safe and effective pharmaceuticals or vaccines, and not only is it not transferred through compulsory licenses but it is hard to imagine how any government would force the transfer of such information even under a waiver. For this reason, instead of encouraging production everywhere – including in locations where safety and efficacy standards are virtually nonexistent – and accepting that there will be a flood of substandard vaccines coming onto the world market (with devastating effects) it is much more sensible to find out where potential manufacturing capabilities exist and find ways to exploit them and scale them up. ¶When asked if a waiver would improve vaccine availability and equity, Watal responded: “No. It won’t. That’s clear.”[Footnote21](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn21) I share Watal’s view and do not support a TRIPS waiver for IPRs or even a limited waiver for patents. With evidence mounting that “what the proposal … will definitely not achieve is speeding up the Covid-19 vaccination rate in India or other parts of the Global South”[Footnote22](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn22) I refuse to sacrifice academic integrity by supporting a proposal simply because it is gaining traction in some circles.[Footnote23](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn23) IPRs played a key role in delivering vaccines within a year of the discovery of a new pathogen; it seems inexplicable that the world would abandon the system without any evidence that IPRs are limiting during the current crisis.[Footnote24](https://link.springer.com/article/10.1007/s40319-021-01083-5#Fn24) Moreover, innovators have been generous in licensing technology transfer and production and one would be hard-pressed to find credible reports of qualified generic producers being refused a license. This is not surprising, since multiple competing vaccines are on the market it simply does not make economic sense for innovators to refuse a license – the generic manufacturer would simply obtain a license (and market share) and pay royalties to a competitor. ¶Instead, I support efforts to enable prompt and effective use of existing flexibilities in the TRIPS Agreement and concerted and coordinated efforts involving governments and the private sector to ensure all qualified generic producers willing and capable of manufacturing vaccines are doing so and to create supply by working to bring more facilities up to standard. Cooperation will not only lead us out of this pandemic but also put us in a better position to deal with the next one. Killing the goose that laid the golden egg may seem appealing to some in the short term but will only ensure that no eggs are delivered in the next pandemic.

#### A TRIPS waiver for Covid takes too long---only vaccine donations solve. Fabricius 6/25

Peter Fabricius [institute for security services consultant], 6/20 - ("South Africa: Is Ramaphosa Tripping Over a TRIPS Waiver?," allAfrica, 6/25/2021, accessed 6-30-2021, https://allafrica.com/stories/202106260001.html)//ML

His fervour is prompting some suspicion that the waiver campaign is an ideological issue for South Africa and others on the left - who have always been suspicious of big pharma - rather than an objective solution to a crisis. That's because a TRIPS waiver cannot possibly rescue Africa from the immediate grips of the pandemic.¶ Even the mRNA project in South Africa would take at least around 12 months before manufacture can begin, WHO Chief Scientist Soumya Swaminathan said. And this would be with voluntary licensing and full technological cooperation and training from the patents' owners. Manufacturing vaccines from scratch and without that cooperation through a TRIPS waiver would take much longer.¶ The only immediate remedy is a vigorous campaign to pressure rich countries to donate vaccines¶ Yogesh Pai, Assistant Professor at the National Law University in Delhi, said the TRIPS waiver proposal was 'simplistic' in assuming that allowing the formulae of companies making vaccines to be copied would automatically enable other manufacturers to produce COVID-19 vaccines quickly.¶ Pai said most complex technologies, such as vaccines, comprised not only the knowledge, which is patented to prevent copying. It also involved undisclosed information and know-how about quality control measures for production and clinical data required for regulatory clearances.¶ An intellectual property waiver wouldn't give another company access to this deeper level of know-how. Only a cooperative agreement in which the technology owner helped the new manufacturer produce the vaccines could do this, Pai suggested.¶ Prashant Yadav, an expert on medical supply chains at Harvard Medical School, told ISS Today that it would probably take two to three years to produce a vaccine via a TRIPS waiver. First, the waiver would need to be secured, and then the necessary processes worked out without the help of the original developer.¶ Can Africa wait that long? At the launch of the mRNA project this week, Michael Ryan, Head of the WHO's Health Emergencies Programme, stressed that manufacturing COVID-19 vaccines in Africa, while commendable, wouldn't address the immediate crisis. The only solution was for rich countries to stop hoarding vaccines immediately. 'It will be a catastrophic moral failure at global level if we do not do that,' Ryan warned.¶ Yadav says the urgent strategy should be reallocating doses purchased by countries that don't need them and expanding vaccine production through voluntary licensing and tech transfer from the originator companies.¶ Of course, Ramaphosa could be right in suspecting that rich countries aren't altruistic enough to donate their 'surplus' vaccines, and so Africa and the rest of the global south must become more self-reliant.

#### No inherency - The Covid vaccine waiver will pass in the status quo—many countries are switching their positions now . Meyer 6/10

David Meyer [senior writer for fortune], 6/10 - ("COVID-19 vaccine-patent pressure grows in Europe as lawmakers back temporary waiver," Fortune, 6-10-2021, accessed 7-5-2021, https://fortune.com/2021/06/10/covid-vaccine-patent-waiver-european-parliament-commission-wto/)//ML

The [temporary suspension of COVID vaccine patents](https://www.keionline.org/wp-content/uploads/W669Rev1.pdf)—a move that's intended to help expand manufacturing and speed up the global vaccination drive, thus [shortening the pandemic](https://fortune.com/2021/05/07/the-vaccine-patent-debate-heats-up/)—was originally proposed by South Africa and India last year. Over recent months, it has gained new supporters like the World Health Organization (WHO), [the Pope](https://www.theguardian.com/world/2021/may/09/pope-adds-voice-to-call-for-pharma-giants-to-waive-vaccine-patents), and, crucially, [the Biden administration](https://fortune.com/2021/05/06/covid-vaccine-patent-waiver-protections-rights-waiver-biden-next/).¶ However, Europe—home to major players such as BioNTech and AstraZeneca—has resisted the waiver. Just last week, the European Commission submitted an [alternative plan](https://www.reuters.com/world/europe/eu-executive-submits-vaccine-access-proposal-wto-2021-06-04/) to the World Trade Organization (WTO), proposing other measures such as limits on export restrictions, and the compulsory licensing of the patents in some circumstances.¶ That doesn't go far enough, said members of the European Parliament on Thursday, as it passed [an amendment](https://www.europarl.europa.eu/doceo/document/RC-9-2021-0306-AM-008-016_EN.pdf) calling for a temporary waiver of the WTO's TRIPS Agreement, the global intellectual-property rulebook, in relation to COVID-19 vaccines, treatments, and equipment.¶ The amendment passed by 355 votes to 263, with 71 abstentions. The European Parliament cannot tell the Commission to change its influential tune on the issue, but the vote sent a strong political message nonetheless: Europe, with its many national votes at the WTO, is gradually shifting to the pro-waiver camp.¶ Within the Parliament—the only EU lawmaking institution whose members are directly elected by citizens—[the split](https://www.europarl.europa.eu/news/en/press-room/20210517IPR04116/meps-split-over-waiver-for-covid-19-vaccine-patents) over the issue has largely followed left-right lines, with leftists such as the Socialists and Democrats (S&D, Parliament's second-biggest voting bloc) backing the waiver and those on the right, such as the European People's Party (EPP, the biggest bloc), opposing it.¶ "With today’s vote, the European Parliament calls on the Commission to finally do the right thing and save lives by supporting the lifting of patents for COVID-19 vaccines and medical equipment," said Kathleen Van Brempt, the S&D's lead negotiator on the subject, in a statement after the vote. "The TRIPS waiver may not prove to be a miracle solution, but it is one of the essential building blocks of a strong global vaccination campaign. Exceptional situations call for exceptional measures.¶ "The alternative proposal submitted by the European Commission to the WTO falls short in the face of the epochal challenge we are facing," she added.¶ But it is not just the European Commission that is becoming more isolated on the issue. Germany, too, is increasingly lonely in its opposition to the waiver.¶ French President Emmanuel Macron, who has [previously sided](https://www.theguardian.com/world/2021/may/07/macron-voices-concerns-over-covid-vaccines-patent-waiver) with Germany, [traveled to South Africa](https://www.voanews.com/covid-19-pandemic/macron-south-africa-talks-covid-vaccine) a couple of weeks ago to discuss the waiver with President Cyril Ramaphosa. On Wednesday, just ahead of the G7 summit, he flipped and joined the patent-suspension camp. That means at least two G7 leaders (also including U.S. President Joe Biden) now favor the waiver.¶ Add to that the fact that the WTO agreed on Wednesday to [fully debate the waiver](https://www.moneycontrol.com/news/business/economy/wto-decides-to-hold-text-based-negotiations-on-indias-global-vaccine-waiver-proposal-7010561.html)—a step that the EU and some other countries had previously resisted—and it seems the tide may be turning.¶ There is still a way to go, though. World Bank President David Malpass [slammed the waiver idea](https://www.reuters.com/business/healthcare-pharmaceuticals/world-bank-chief-says-does-not-support-vaccine-intellectual-property-waiver-wto-2021-06-08/) on Wednesday, saying “it would run the risk of reducing the innovation and the R&D” in the pharmaceutical sector. (Malpass, a Trump appointee, is therefore now in opposition to the current White House.)¶