## \*\*\*Green Industry Good—Env. Leadership

### UQ—Green Tech Leadership Low

#### The US is falling behind in green tech innovation

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[World Economic Forum, “Green Investing 2010: Policy Mechanisms to Bridge the Financing Gap,” January 2010, <http://www3.weforum.org/docs/WEF_IV_GreenInvesting_Report_2010.pdf> SJE]

While new financial investment – i.e. excluding corporate and government research, development and deployment and small distributed projects – fell 15% in the EMEA region in 2009, and 26% in the Americas, it increased in Asia-Oceania by nearly 25%, mainly driven by the wind sector. As a result, in 2009, for the first time, total new financial investment in clean energy in Asia-Oceania (US $37.3bn) outstripped that in the Americas (US$ 29 billion). Europe, Middle East and Africa continued to lead the world with investment of US$ 45.3 billion. The period 2004 to 2008 had seen a surge in investment in clean energy across almost all technology sectors, geographies and asset classes, from a total of US$ 33 billion to a total of US$ 155 billion, as described in last year’s Green Investing report. By the second half of 2008, however, with the financial crisis biting, the increase had stalled. The low-point came in Q1 2009, when financial investment in clean energy (i.e. excluding government and corporate R&D) fell by over 50% from its peak just over a year before. Investment activity was, however, quick to bounce back, driven by rapid growth in China, some long-awaited large offshore wind farm financings, and a steady recovery in the financial markets. Prompt action by a number of development banks and a trickle of money starting to flow from stimulus programmes spurred private sector activity, albeit at a slower rate than in previous years. By year end total financial investment in clean energy (i.e. excluding corporate and government RD&D) was US$ 112 billion, with Q3 and Q4 each seeing an average of US$ 30 billion of deals (see Figure 6). The recovery in the second half of 2009 was mainly due to financing of specific types of projects in individual countries, such as the wind mega-bases in China, offshore wind farms in the United Kingdom, and solar thermal electricity generation plants in Spain. Asset Financing accounted for US$ 92 billion of the total investment of US$ 145 billion in 2009, while equipment manufacturers and technology companies raised US$ 13 billion from the public markets, and US$ 6.6 billion from venture capital and private equity investors. Government and corporate research and development spending, plus small-scale projects accounted for the remaining investment.

#### China is overtaking the US in clean tech

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[Teryn Norris & Neil Shenai, Project MUSE, “Dynamic Balances: American Power in the Age of Innovation,” Fall 2010, <http://leadenergy.org/wp-content/uploads/2010/12/SAISReview-AmericanPower-NorrisShenai-Nov2010.pdf>, SJE]

Clean energy technology provides a useful case study for benchmarking the national innovation capacity of the United States and China. According to the World Economic Forum, the global clean energy market will reach $450 billion annually by 2012 and $600 billion by 2020. Full market potential for clean energy products is substantially larger, with one analyst estimating Chinese market potential alone at $500 billion to $1 trillion. The industry has significant national strategic importance, with President Obama declaring in his State of the Union address, “the nation that leads the clean-energy economy will be the nation that leads the global economy.” In research, development, and venture capital investment, the United States is dominant, securing significantly larger levels of public and private The United States claimed 67 percent of global venture capital investment in the first quarter of 2010, compared to 8 percent in China, although China’s share is growing quickly.Dynamic Balances 159 investment and maintaining most of the world’s best public and private clean energy R&D facilities. In 2009, according to the Cleantech Group, North American companies, which are primarily based in the United States, raised $3.5 billion in clean technology venture capital, compared to $331 million by Chinese companies. California-based companies alone raised $2.1 billion in 116 deals, followed by Massachusetts ($356 million in twenty-seven deals) and Texas ($170 million in nineteen deals). However, several trends suggest this dominance could be eroding, as Chinese companies attract larger amounts of other private investment. According to the same Cleantech Group report, the North American share of total global clean-tech venture capital fell from 72 percent in 2008 to 62 percent in 2009, a four-year low for the region and 42 percent less than 2008. Clean-tech M&A activity in China reached a historic high of $5.5 billion in 2009, and Chinese firms dominated clean-tech IPOs, representing half of all companies that went public and 72 percent of global clean-tech IPO proceeds. Overall, in 2009 China’s clean energy sector attracted $34.6 billion in private investment, almost twice the United States, which attracted $18.6 billion. The Chinese government is targeting clean energy technology as one of its top national R&D priorities, and the country is attracting a growing number of firms to relocate their R&D facilities. In January 2010, China’s National Energy Bureau announced the licensing of sixteen national clean energy R&D facilities to develop wind, nuclear, and other technologies. Applied Materials, the international leader in the supply of solar cell manufacturing equipment, recently announced it would construct the world’s largest and most advanced solar R&D facility in Xian, China. Likewise, IBM recently decided to invest $40 million in its first “energy-and-utilitiessolution lab” in China. These trends suggest that while China lacks the historical innovation capacity of the United States, the rapid scaling of its clean energy industry through large-scale technology manufacturing and deployment will attract a growing share of R&D and innovation. Indeed, China manufactures and deploys substantially more clean energy technology than the United States. For example, in 2007, China’s annual solar photovoltaic (PV) and wind manufacturing capacity was 1,800 MW and 8 GW, respectively, compared to 375 MW and 4.2 GW in the United States. In 2008, China produced 41 percent of the world’s lithium ion batteries.

### Green Tech K/T Environmental Leadership

#### Tech innovation is key to US enviro leadership

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[Richard A. Matthew, “In Search of Environmental Leadership,” Georgetown Journal of International Affairs, Spring 2000, <http://journal.georgetown.edu/wp-content/uploads/1.1-Matthew.pdf> SJE]

As the world's only superpower, the United States may be irrevocably out of touch with the rest of humankind. It may well be that middle powers and NGOs will have to take the initiative here and perhaps on every new environmental issue that is placed on the global agenda. Nevertheless, should the United States decide to provide leadership, the following three steps would make a good start. First, reframe environmental issues in terms of equity, culture, and livelihood. Everyone seeks outcomes that are fair, culturally sensitive, and that put food on the table. We should limit the concept of environmental security to issues pertaining to conflict and the role of the military. Second, lead by example. The founding fathers envisioned the United States as a beacon of light that would demonstrate to a skeptical world that democracy is not just a viable form of government, but the best form of government. America should now demonstrate to the world that environmental design, environmental planning, environmental education, environmental accounting, and so on, are not just viable practices, but best practices. To do this we must set a few challenging goals for ourselves-practical goals that bring out our best qualities, our ability to be persevering. creative, pragmatic, entrepreneurial, and daring. Third, identify a concrete and visible way to improve the global environment and pursue it. The United States will continue to inch forward on the environmental agreements that are under negotiation or already in place. But to justify American exceptionalism, the United States should do something exceptional. Eliminate polio, tuberculosis, or malaria. Develop renewable and inexpensive forms of generating and applying energy. Stamp out food insecurity. Build water catchment and purification systems for the poor. And don't wait for someone else to act first or assume the costs. These are all challenging objectives, fraught with hardship, but they are not beyond America's means. Indeed, such activity is the stuff of leadership.

#### Reducing emissions and creating green tech are key to US leadership

Eizenstat, 8 – has held numerous senior positions in government as Deputy Secretary of the Treasury, Under Secretary of State for Economic Affairs, U.S. Ambassador to the EU

[Stuart Eizenstat, “The U.S. Role In Solving Climate Change: Green Growth Policies Can Enable Leadership Despite The Economic Downturn,” Energy Law Journal, <http://www.felj.org/docs/elj301/1_-_eizenstat.pdf> SJE]

The third point is that the United States must show leadership if we are to deal with one of the greatest challenges of the twenty-first century, despite the economic crisis. The Obama-Biden Administration will be well-positioned to provide this leadership, given the strong stance taken by Senator Obama during the campaign. We can do so by the following: Building on our history of innovation to promote job creating green growth; Passing U.S. legislation with significant targets for emissions reductions, but in ways that keep costs down; Recognizing that the international negotiations will be among the world’s most complex, and will require a grand bargain, with contributions from developing countries, including major emitters, and even lesser developed countries, as well as from the developed countries. But, the U.S., and other developed countries, must show the way and help provide developing countries with the tools to achieve an accelerated transition to a lower carbon economy during their own growth phase. The rest of the world is waiting to see what stance the United States will take at the upcoming high-level UN climate negotiations in December, in Poznan, Poland. Yvo de Boer, the UN’s top climate change official, has said publicly that leadership from President-elect Obama, given his forward-leaning policy statements, “can have a huge impact on the dynamics of these negotiations.” At the same time, de Boer sought to provide the new administration breathing room by reminding that no country had domestic legislation in place at the time they signed on to the Kyoto Protocol. “I don’t see why we should have a much more difficult standard for the United States,” he told the press.

#### Plan is a prerequisite to environmental leadership

VanDeveer, 2003

Stacy D. VanDeveer, PhD, senior fellow at Transatlantic Academy, Autumn 2003, “Green Fatigue”, International Law, accessed July 5, 2012 from http://spider.allegheny.edu/employee/M/mmaniate/431/greenfatigue.pdf

In no country is this clearer than in the United States. If Americans want more effective environmental law, they should demand that their own government actually abide by the promises it so often makes and so rarely keeps. Because U.S. citizens use a disproportionate share of the Earth’s resources, they have a disproportionately large opportunity to improve its environment by enacting strong and sensible policy at home and supporting—rather than undermining—international environmental laws and organizations. If U.S. policymakers don’t like the Kyoto Protocol, they could do more than complain that it’s unfair to the world’s wealthiest and most powerful country. They could adopt reasonable policies of their own designed to efficiently reduce emissions of carbon dioxide and other greenhouse gases in the United States.

### Environmental Leadership K/T Environment

#### US environmental leadership is key to creating global action, reversing negative image of US, and creating good environmental policy

Ivanova and Esty, 2008

Maria Ivanova, PhD, Assistant Professor at McCormack Graduate School, Director of the Global Environmental Governance Project and Daniel C. Esty, Professor of Environmental Law and Policy at Yale Law School “Reclaiming U.S. Leadership in Global Environmental Governance”, Summer-Fall 2008, SAIS Review vol. XXVII no. 2, accessed July 5, 2012 from <http://www.umb.edu/editor_uploads/images/centers_institutes/center_governance_sustain/Ivanova-Esty-SAISReview-2008.pdf>

We contend, moreover, that not only is U.S. participation critical, but U.S. leadership is crucial and necessary to achieve successful environmental outcomes. The U.S. environmental footprint is larger than any other country’s. The United States consumes a disproportionate share of the world’s energy and natural resources. With less than 5 percent of the world population, the United States uses 25 percent of the world’s fossil fuel resources—accounting for nearly 25 percent of the world’s annual coal burning, 26 percent of the world’s oil, and 27 percent of the world’s natural gas.3 It also accounts for 18.5 percent of the consumption of global forestry products and 13.7 percent of the world’s water usage. The United States is in a unique position. Given its economic and strategic power as well as its financial and technological prowess, U.S. leadership could influence international environmental policy and promote effective environmental governance. Conversely, the record of the past fifteen years has demonstrated that “when the United States declines to exercise leadership, the impact is significant.”4 Little progress is made without the United States. Reasserting global environmental leadership, however, will not be easy for the next U.S. president. There are considerable domestic challenges 60 SAIS Review Summer–Fall 2008 as the U.S. public remains deeply ambivalent about international entanglements and international organizations—even those related to protecting the planet. In this article, we present a platform for U.S. re-engagement in global environmental governance. We develop an argument on three analytical grounds: 1) the logic for collective action and U.S. engagement in international environmental organizations to address global environmental problems, 2) the potential for reversing the image of the United States as a “laggard in international environmental politics,”5 and 3) the core functions in global environmental governance. We tackle each of these issues in turn and conclude with a view toward U.S. engagement under a new administration.

### Environmental Leadership K/T Warming

#### Lack of US leadership on environmental policies means global warming is irreversible

Ivanova and Esty, 2008

Maria Ivanova, PhD, Assistant Professor at McCormack Graduate School, Director of the Global Environmental Governance Project and Daniel C. Esty, Professor of Environmental Law and Policy at Yale Law School “Reclaiming U.S. Leadership in Global Environmental Governance”, Summer-Fall 2008, SAIS Review vol. XXVII no. 2, accessed July 5, 2012 from <http://www.umb.edu/editor_uploads/images/centers_institutes/center_governance_sustain/Ivanova-Esty-SAISReview-2008.pdf>

Second, the Bush Administration’s reflexive unilateralism on international concerns—whether environmental, economic, or security—represents a break with the prevailing presumption since World War II favoring co operation and multilateralism through NATO, OECD, and other regional bodies, if not the UN. The “go-it-alone” approach is especially difficult to justify on issues that are inescapably global in scope, such as climate change. Even if the United States were able to eliminate its greenhouse gas emissions entirely, climate change would not be stopped. The build-up of atmospheric concentrations of carbon dioxide driven by rising emissions in China, India, Indonesia, and other developing countries would continue, leaving the United States exposed to the threat of global warming, increased intensity of windstorms, altered rainfall patterns, melting ice caps, and rising sea levels. These dynamics beg two questions: Can progress on any of the difficult global environmental issues be achieved without the participation and leadership of the United States? Conversely, can the United States shoulder the burden of addressing such concerns without the cooperation of the rest of the global community?

#### US leadership on environmental issues will be an effective response to climate change – history proves

Ivanova and Esty, 2008

Maria Ivanova, PhD, Assistant Professor at McCormack Graduate School, Director of the Global Environmental Governance Project and Daniel C. Esty, Professor of Environmental Law and Policy at Yale Law School “Reclaiming U.S. Leadership in Global Environmental Governance”, Summer-Fall 2008, SAIS Review vol. XXVII no. 2, accessed July 5, 2012 from <http://www.umb.edu/editor_uploads/images/centers_institutes/center_governance_sustain/Ivanova-Esty-SAISReview-2008.pdf>

Third, mere U.S. participation in international environmental efforts will be insufficient. The United States must actively take a leadership role in bringing about a successful response to climate change and other issues. The history of past success in galvanizing the global community into action shows that the United States can and must take the lead. However, any attempt at U.S.-led reform without credible proof of genuine U.S. leadership based on common values and the common good is likely to be met with distrust and opposition.

## \*\*\*Green Industry Good—Economy

### Green Industry K/T Economy

#### Only green tech can save America’s economy

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[Jan Nederveen Pieterse, “Innovate, Innovate! Here Comes American Rebirth,” 6/29/10, <http://jannederveenpieterse.com/pdf/NP%20Innovate%20US.pdf> SJE]

“Innovation can give America back its greatness,” according to Jeff Immelt, CEO of General Electric. “This downturn is not simply another turning of the wheel but a fundamental transformation. We are, essentially, resetting the US economy. An American renewal must be built on technology” (Immelt 2009). If the United States is to recover from this crisis and regain its place as a leading world economy, it will be through new technologies, especially green technologies and smart solutions to contemporary problems. This assessment reflects an American consensus, shared by media and commentators, CEOs, business forums, and policy makers, and politicians from both parties. Specifically, this consensus comes at the confluence of several trends—a long-term commitment to innovation as part of modernity and part of the American self-image; and the role of information technologies, the green turn and the cultural turn, now in conjunction with financial risk and crisis. “Innovation economics” is in vogue. “Beneath the gloom, economists and business leaders across the political spectrum are slowly coming to an agreement: Innovation is the best—and maybe the only—way the U.S. can get out of its economic hole. New products, services, and ways of doing business can create enough growth to enable Americans to prosper over the long run” (Mandel 2009: 52).

#### Green tech is key to job creation and economic recovery

King, 12 [YaShekia King, January 2012, US Green Technology, “Green Technology Will Come to the Economy’s Rescue” (http://usgreentechnology.com/us-green-stories/green-technology-will-come-to-the-economys-rescue/)]

I wrote this article because when we look around at our economically devastated country, it is apparent that people need to be encouraged in this new year. People need to realize how beneficial green technology can be to them and how it really is part of all of our lives. If you are looking for a job in the modern economy, no other industry is paving the way for hundreds and thousands of new jobs in the same way that the green technology industry is. If you want to own or start your own business, what better way than to enter a field that is extremely promising – a field that is attracting a large number of venture capitalists who are willing to put money into early-stage and high-risk yet high-potential startup green companies. According to the Center for Small Business and the Environment, small green businesses actually are more capable of creating new jobs faster than large companies can and thus should be at the forefront of leading the nation’s economic recovery through clean energy technologies and green employment opportunities. In addition, if you own a home, businesses provide services to make your residence more energy-efficient, which positively affects your pocketbook. If you recycle, you also can make some extra change while additionally helping companies to save money and save the planet at the same time. By recycling, you essentially save trees in addition to saving space that otherwise would have to be dedicated to landfills.

#### Green tech is key to the future world economy

Rusnak, 12 [Karl Rusnak, April 12th, 2012, America’s Economic Report, “We Need Green Tech Priorities” (http://economyincrisis.org/content/prioritizing-green-energy-development)]

New sources of clean energy will be a crucial part of the world economy in coming years. By 2013, the global renewable energy market is forecast to have a value of $511.3 billion, and with traditional sources of energy becoming increasingly expensive, the value of that market can only be expected to increase. With this growth, there has been a lot of talk about the new jobs that are possible in the industry. The president, along with numerous other leaders, has touted green energy as the future savior of American manufacturing. The relatively undeveloped nature of the industry allows politicians to speak in broad terms about the kind of opportunities that will arise from creating cleaner energy. While replacing fossil fuel-based energy with cleaner, cheaper energy is a laudable goal–one that we should avidly pursue–merely replacing domestic conventional energy jobs with green energy jobs will not achieve any real growth. The focus needs to be on net job growth, and that means either creating an industry in which we can export more, or creating an industry that can replace something we import. Drastically reducing or eliminating our dependence on foreign oil would be the most effective way to create a net increase in jobs, because it accomplishes the second option of replacing something major that we import. The U.S. trade deficit in oil now makes up approximately 50 percent of our total trade deficit. Other major fuel sources do not pose as much of an economic problem, as the U.S. is a net exporter of coal, and while the U.S. does run a trade deficit in natural gas it is miniscule compared to the massive deficit we run in oil. An energy policy directly aimed at ending our dependence on foreign oil could yield significant dividends. Initiatives in green energy are scattered right now, and very often include ways to move electricity generation off of fossil fuels and instead supply it via solar and wind power. These kinds of initiatives will not have as great an impact on our economy as those that address oil consumption. Tackling the oil problem means tackling the way we power our cars, and ideally how often we use them as well. Hybrid vehicles are becoming a more popular choice in the U.S., but traditional hybrids alone will not solve our oil problem. Development of competitive electric or fuel cell vehicles could be a major boon to the automobile industry in the U.S., while also drastically reducing our oil consumption, and therefore our trade deficit. More investment in efficient public transportation is also crucial. If we reduce our trade deficit and start keeping our money here in the U.S., we can use that newfound money to invest in new jobs. But if we push for new technology that allows this to happen, we need to make sure our manufacturers have the incentive to build the new technology here. Our current trade policies do not do this, and without a change on that front, any gains in the green technology field will be short lived.

## \*\*\*Green Industry Good—Warming

### Green Tech Industry K/T Warming

#### Green tech is key to efficiency and CO2 reductions – will spur international development.

FIA ‘8

(FIA Foundation “50 BY 50 GLOBAL FUEL ECONOMY INITIATIVE” 2008 <http://www.fiafoundation.org/50by50/documents/50BY50_report.pdf>)

This view is supported by academic engineers and the car manufacturing industry, as presentations at the 2008 International Transport Forum in Leipzig suggested 5 , and by the analysis presented in the IEA’s report, Energy Technology Perspectives 2008 (IEA, 2008). Professor Julia King of Aston University, in a report to the UK Government (King, 2007), identified a potential to improve fuel efficiency of new cars by 30% within a decade with conventional technologies. For the United States, a team at the Massachusetts Institute of Technology finds a similar potential for improvement (Heywood, 2008) without significant change in the quality of vehicles marketed, if all the technological potential available is channelled to improving fuel economy rather than the performance of new model cars. Already a number of major car manufacturers have strategies to incorporate technologies in their main car models to achieve this level of improvement over the coming decade. King, Heywood and others foresee the potential for further improvements in new car fuel economy, up to a 50% reduction in L/100 km by 2030-2035, mainly through the wider penetration of technologies leading up to, and including, fully hybridized vehicles. The introduction of grid-connected battery electric vehicles (probably first as “plug-in” hybrids) would also contribute to efficiency improvement (in addition to fuel shifts toward electricity), assuming sustained progress in battery technology. Electric vehicles offer substantial savings in gasoline and diesel, although their potential to reduce CO2 emissions depends on whether low carbon electricity can be generated on a much larger scale than today. Similarly, hydrogen fuel cell vehicles can offer efficiency improvements and CO2 reductions, if they are commercialised. However widespread introduction of such advanced technologies should not be necessary to achieve 50% fuel economy improvement. Current average fuel economy levels vary considerably by country. Across the OECD the average figure in 2005 was around 8 litres per 100 km for new cars (including SUVs and minivans and including both gasoline and diesel vehicles). With a 50% fuel economy improvement, the average new car performance in OECD markets would improve to around 4 litres per 100 km (about 90 g/km of CO2). In the United States, fuel consumption is considerably higher than the OECD average: doubling of tested fuel economy would mean moving from the current new car (and light truck) average of 26 mpg to 52 mpg (about 9 to 4.5 litres per 100 km). In non-OECD countries, more work is needed to better understand current fuel economy levels and their likely future trends, but a level of 4 litres per 100 km (or even lower) should be attainable in most countries over the time frame considered. This will depend on considerations related to variations in the test cycles used in different countries – an area where a consistent measurement and comparison approach is still under development.

## \*\*\*Green Tech Industry Bad

### AT: Jobs

#### **Green jobs trade off with general jobs – hurts overall employment.**

Green 11 (Kenneth P. Green is a resident scholar at the American Enterprise Institute “The Myth of Green Energy Jobs: The European Experience” February 15, 2011 http://www.aei.org/outlook/energy-and-the-environment/the-myth-of-green-energy-jobs-the-european-experience/)

With $2.3 billion in Recovery Act tax credits allocated for green manufacturers, President Barack Obama and other Democratic politicians have high hopes for green technology. But their expectations clash with both economic theory and practical experience in Europe. Green programs in Spain destroyed 2.2 jobs for every green job created, while the capital needed for one green job in Italy could create almost five jobs in the general economy. Wind and solar power have raised household energy prices by 7.5 percent in Germany, and Denmark has the highest electricity prices in the European Union. Central planners in the United States trying to promote green industry will fare no better at creating jobs or stimulating the economy.

### **AT: Competitiveness**

#### **Empirics and theory disprove green tech increases competitiveness.**

Green 11 (Kenneth P. Green is a resident scholar at the American Enterprise Institute “The Myth of Green Energy Jobs: The European Experience” February 15, 2011 http://www.aei.org/outlook/energy-and-the-environment/the-myth-of-green-energy-jobs-the-european-experience/)

Both economic theory and the experience of European countries that have attempted to build a green-energy economy that will create green jobs reveal that such thinking is deeply fallacious. Spain, Italy, Germany, Denmark, the UK, and the Netherlands have all tried and failed to accomplish positive outcomes with renewable energy. Some will suggest that the United States is different, and that US planners will have the wisdom to make the green economy work here. But there is no getting around the fact that you do not improve your economy or create jobs by breaking windows, and US planners are no more omniscient than those in Europe.