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DON'T KILL THE GREEN GOOSE

The Importance of Stimulating and Rewarding Clean Energy Breakthroughs

by Chris S. Israel

According to a recent poll reported in *Scientific American*, Americans would rather see federal resources spent to address our growing energy needs than on pursuing a cure for cancer or other diseases. Admittedly, the margin was close and pitting critical objectives against one another is not a fair way to capture the public's convictions, but it is a telling indicator of a dramatic new course for the U.S.

The need to achieve technological breakthroughs to provide cleaner, more efficient, cheaper and more abundant sources of energy may indeed be the race-to-the-moon for this generation of American inventors, scientists and entrepreneurs. In a recent statement on the impact of U.S. patent reform legislation, the University of California noted that the "green tech" industry is today where the semiconductor industry was 35 years ago and where the biotech industry was 25 years ago. The contribution of those two industries to advances in global well-being, human productivity, economic growth, standards of living and scientific accomplishment has been staggering. To many, the potential of advances in green technology will be as significant.

The signs of the clean energy revolution are all around us. There are green tech mutual funds, green tech hedge funds, green tech startups, green tech public policy initiatives, green data centers, and green tech corporate strategies like "ecomagination" at GE and "RE<C" at Google. An Eco-Patents Commons (which includes IBM, Nokia, Sony and others) launched by the World Business Council for Sustainable Development will make "environmentally responsible" patents publicly available.

In addition, an investment group led by Al Gore has raised nearly $3 billion to invest in early-stage environmental companies, and venture capital firm Kleiner Perkins Caufield and Byers has raised over $1 billion to invest in clean energy companies. Nationally, President Bush proposed a $2 billion global "clean technology" fund in his 2008 State of the Union address to help countries like China and India access clean energy technologies. Japan pledged $10 billion over five years to help developing countries curb emissions.

The Promise. Developed countries see this revolution as having two very positive aspects. First, it will help address our serious energy and climate change challenges, and second, it opens a huge new industry where greater inventive capacity should provide a discernible competitive advantage.

While it is unclear where all of this research, investment and innovation will ultimately take us, it is clear that a tremendous amount of intellectual property (IP) will be created in clean coal technologies, more efficient power generation processes, information technology to manage consumption, fuel cell technologies, agrichemicals, seeds, next-generation biofuels, building materials and more. The demand for the wide diffusion of this innovation will be huge as the developing world (China and India in particular), rapidly meets and then exceeds energy consumption levels of the U.S. and Europe.

The Dilemma? As the need to get clean energy technologies deployed in the countries that need them the most comes up against the absolute imperative to promote and protect the IP that makes those very technologies possible, the true challenge will become clear. This dilemma is already playing out as Chinese officials, who have resisted calls to place binding caps on their greenhouse gas emissions, have argued that IP protections are making clean energy technologies too expensive for developing countries. There may be an emerging quid-pro-quo in which developing countries will agree to take steps to enhance their environmental protections *if* they are simply given the technology to do it.

Clean energy technologies will come in hundreds of variations and will take billions to develop, test and deploy in the U.S. and other industrialized economies. To sustain this model there must be a truly global marketplace where IP and innovation are rewarded according to economic drivers such as value, quality and demand.

The European Patent Office recently concluded a conference titled, *Inventing a Cleaner Future,* claiming to be the first global discussion dedicated to figuring out how "the fields of patenting and intellectual property" can support innovations

that will address global energy needs and environmental concerns. A cross section of participants from industry, government, academia and non-governmental organizations raised provocative questions such as *"Do we need a special patent regime for climate-related technologies?"*, and explored the role of patents in "eco-innovation." Clearly there are huge expectations already being placed on the ability of technology to "save" the planet.

As we've seen before, extraordinary expectations also shape our view of technology and how it should be deployed. Think about the efforts early in this decade to bridge the "digital divide." These efforts included calls for major subsidies from developed countries and corporations, and even a global "digital divide tax" because the Internet is an essential and paradigm-shifting technology. There were expectations of a government-subsidized computer in every home, school or village and dramatic policy initiatives followed. These proved to be largely unnecessary, however, as the continual development (in the marketplace) of cheaper and better technologies, as well as innovative funding and access models allowed for an explosion in the access to information technologies around the world and immeasurable economic growth.

Interestingly, while more computers have gotten to more people and the Internet has reached 20% of the world's population, global IP protections have by-and-large improved for information technology. A special or weakened IP system for information technology in order to achieve a 290% increase in the number of people using the Internet worldwide since 2000 was unnecessary. No dilemma.

A Careful Balance. A balance must be struck between stimulating and rewarding investments in clean energy development and the demands that will be placed upon its deployment. A proliferation of national strategies to promote the clean energy industry that will include tax policies, subsidies, technology incubators, R&D increases, etc. will develop. However, there must also be a global approach that prioritizes real world impact, but also respects intellectual property and the innovation process. What will some of the first steps in this global approach be?

Here are a few basics:

- Avoid using protectionist policies such as tariffs to create national champions at the expense of deploying important technologies quickly. The U.S. and the EU made a proposal at the WTO in 2007 that tariffs be eliminated entirely on a set of technologies particularly important in the fight against global warming. This would be a very significant first step.

- Seek efficiencies in moving innovations to the market. A major first step the U.S. can take is educating and equipping patent offices around the world to understand and effectively assess increasingly complex clean energy-related applications. This will get invention to the marketplace faster and now is the time to focus on issuing quality patents that recognize true innovation.

- Respect the intellectual property that empowers advances in clean energy. Sentiment among some organizations and countries is that any product or innovation that improves human well-being should be made freely available or taken from the owner under a "compulsory license" arrangement. The immediate outcome is alluring, but the long-term impact unappealing. The major investments in research and development that are being made will continue to grow and produce important breakthroughs ONLY if the ability to protect these investments is respected.

The expectations being placed on the ability of technological breakthroughs to address the increasing energy demands of the future in an efficient and smart way are not misplaced. American innovators and entrepreneurs have time and again proven their ability to take on huge challenges and deliver breathtaking solutions. We are at another one of those moments. But policymakers must ensure a global environment that respects and rewards the innovation and intellectual property protection necessary to meet the energy challenges of the future.

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