"The Case For An FNF UCCPlus Carbon Credits Insurance Program"

January, 2010

FNF Environmental Title Markets Task Force

The following published articles and cites from law firms approved as FNF legal service providers directly support the Task Force's findings that "Carbon Emission Offset" is an enormous Emerging Market for the business opportunity consistent with the Task force Executive Summary work product entitled "FNF UCCPlus Carbon Credits Insurance"

1. Glaser, Weil, Fink, Jacobs, Howard & Shapiro, LLP

The environmental law group at Glaser, Weil, Fink, Jacobs, Howard & Shapiro, LLP, led by senior partner Terry Avchen, provides full service in all areas of environmental law, renewable energy, and natural resources. In addition to traditional environmental and energy litigation and business issues, this interdisciplinary group addresses the rapidly growing renewable and alternative energy areas, with projects ranging from wind power and solar power to biofuels and hydroelectric.

The group also has extensive experience in the regulatory aspects of climate change, including greenhouse gas issues, carbon limits, clean energy technology, sustainable (LEED) development, as well as NEPA, CEQA and Endangered Species issues.

The lawyers in the group are involved in numerous high profile cases, most recently in a precedent setting CERCLA case in federal court regarding the responsibility of the United States for cleanup of perchlorate or rocket fuel in the Santa Clarita Valley.

The Firm's lawyers routinely appear in state and federal courts and in administrative agencies such as the U.S. Environmental Protection Agency, Federal Energy Regulatory Commission, California Water Resources Control Board, the U.S. Fish & Wildlife Service, and state Public Utility Commissions, to name a few.

The Group is also handling the largest LEED development in the world, as well as many other cutting edge projects that respond to the new political realities that face our country.

This firm's Environmental and Renewable Energy Group is actively involved in the area of climate change and understands the issues involved in the ever evolving domestic cap and trade and carbon exchange markets as well as the established international carbon markets.

Mark L. Stermitz's expertise with the carbon credit/gobal warming movement is highly regarded, and gets quoted often for his views in this area. Mark recently conducted a presentation to Big Sky Carbon Sequestration Partnership entitled "*Climate Change Legal & Business Issues" (January, 2009).*

Terry D. Avchen is Senior Partner and Chair of Glaser, Weils Environmental Practice Group. Mr. Avchen has been practicing for about 30 years. Recently Mr. Avchen met with the top people in the Canadian and Australian Governments, as well as the Department of Energy to discuss recent trends and policy decisions. A minister from the Chinese government was also present, along with a few of the top industrialists in this country, including David Freedman.

Los Angeles Magazine recently named Mr. Avchen as one of its "2004 Super Lawyers." Mr. Avchen describes his practice as "dynamic, with an emphasis on complex matters." His clients include companies from all over the country. In the course of Mr. Avchen's years of experience as an environmental attorney, he has successfully represented numerous clients, including Bank of America, MGM Grand, Northern Trust, Huffy Corporation, MGM, Vintage Petroleum, Santa Fe Energy, Unocal, along with numerous real estate developers. His practice covers virtually every area of environmental law.

2. Morrison & Forester (Spring 2009), White Paper, Tessa Schwartz and William Sloan of Morrison & Forester.

Carbon Value in Transactions: A Legal Perspective

Given the potential size of the carbon market, investors, start-ups and established companies all need to consider the relevance of carbon in their business strategy. According to a report by World Bank, the value of the global carbon market in 2007 was approximately $64 billion, up from approximately $31 billion in 2006.

According to the latest figures, the global carbon market doubled in size in 2008, with figures varying from $118 to $125 billion. Europe and Japan currently make up a dominant portion of the world market. In the event cap-and-trade regulations are enacted in the U.S., some analysts predict that the carbon emissions market will be valued at $1 trillion by 2020.

3. Stoel Rives LLC *Capturing the Value of Carbon Credits in Biofuels Projects By John Eustermann and Randy Shefman (April 2008)*

"Once the potential for credits is understood, developers should look to clearly address their ownership in facility contracts in order to avoid disputes over title. While it is difficult to forecast exactly how carbon markets will evolve, forward thinking and a few appropriately placed words should minimize the potential for history to repeat itself. "

4. Kaye Scholer LLP Understanding the Voluntary Carbon Market: Why Companies Buy Carbon Credits, Why the Voluntary Market Will Coexist with Future Mandatory Regulation, and Why Contracts Should Allocate Carbon Credit Ownership, William A. Tanenbaum and Sapna Palla, May 1, 2009

"How Will Contracts Change to Reflect the Importance of Carbon Trading?
In the past, many commercial contracts did not include intellectual property (IP) provisions. As IP rights become more valuable and infringement claims more threatening, commercial contracts began including IP provisions.

This leads to a second prediction: Many commercial contracts will be revised to include provisions expressly allocating the carbon ownership and trading rights between the parties.

Just as the increased significance of IP rights introduced new risks and rewards into transactions, *the ownership of carbon rights will be increasingly important in both the voluntary and mandatory markets, and contracts will need to be revised to make clear which party owns and has the right to sell carbon credits*."

5. Clark Hill PLC Risks and Opportunities in "Going Green" by David D. Grande-Cassell, Krisin Beals Bellar and Rebecca J. Dukes, www.uslaw.org (Fall/Winter 2009)

"Opportunities exist within this new "carbon-pricing" scheme, for businesses that reduce their emissions through greater efficiency to sell their excess allowances. Additionally, unregulated entities have the opportunity to create offsets by voluntarily reducing their emissions or finding ways to capture or remove carbon from the environment.

Offsets are already being created, sold and traded on various voluntary markets in the U.S. and worldwide. Opportunities in these voluntary markets are also abound in the investment and security sector by way of new financial products, market activity, commodities and derivative trading, ***insurance products***, investments, and loans.

Add in government incentives such as loan guarantees, tax credits, and other tax incentives, and nearly every sector of the economy can find a way to benefit from the greenhouse gas reduction schemes and carbon markets."

6. McKenna Long & Aldridge Carbon Accounting: A Practical Guide for Lawyers by Peter L. Gray and Geraldine E. Edens (NR&E Winter 2008)

"Most of the climate change bills that were introduced in Congress during 2007 feature cap-and-trade mechanisms to reduce emissions of CO2 and other greenhouse gases (GHGs). Under the cap-and trade concept, a ceiling is established for total emissions of GHGs by covered emitters. The emitters are then assigned some portion of the total allowable GHG emissions and must either reduce their GHG emissions to meet their limit or acquire offsets to cancel out their excess GHG emissions. Such offsets typically are either emission reduction "credits" acquired from other regulated emitters that were able to reduce GHG emissions below their ceiling, offsets from unregulated emitters (e.g., methane capture from landfills), or offsets from carbon sequestration activities, which remove CO2 from the atmosphere and convert it to nongaseous "carbon sinks."

If Congress enacts a cap-and-trade scheme, as many observers predict it will, a massive new market in carbon emission credits will be created overnight. Some observers estimate the total market in the United States at $300 billion."

A recent study by the Pew Center on Global Climate Change concludes that climate change policies adopted by the United States should encourage activities that increase carbon sequestration in our forests: "Climate change is the major global environmental challenge of our time and in order to deal with it in the most cost-effective way, we need to consider the full range of solutions—and that includes carbon storage and forests."

Eileen Claussen, President of the Pew Center on Global Climate Change, further notes, "If we ignore the potential for forest-based sequestration, any projection of the cost and feasibility of addressing climate change is going to be overly pessimistic and wrong."

7. Jackson Walker LLP Below are important pieces authored by environmental practice group lawyers for this respected law firm:

- M. Nasi, T. Wussow, Detailed Summary of Waxman-Markey American Clean Energy and Security Act of 2009 (HR 2454) (July, 2009)
- M. Nasi, T. Wussow, "Carbon Regulation Backgrounder," *The University of Texas School of Law 2009 Carbon and Climate Change,* Austin, TX (February, 2009; updated November 2009)(note that updated info is appended to the end of the Backgrounder)

- M. Nasi, T. Wussow, "If you Build it, They Will Come: The Texas Offshore Carbon Repository and Its Role in the Future of Carbon-Based Energy." *Texas Journal of Oil, Gas and Energy Law* (forthcoming, 2010).
- M. Nasi, T. Wussow, "How Carbon Capture and Storage can Protect the Planet and the Global Economy," *Petroleum Journal* (forthcoming, 2010)
- M. Nasi, T. Wussow, "Environmental & Energy Legislative Update on the 81st Texas Legislature: Key Victories for Clean Carbon, Quiet Victories for Renewables, and as for the Rest, a Chub to the Head," *Texas Environmental Superconference* (August, 2009)

8. Baker, Donelson, Bearman, Caldwell & Berkowitz, PC Federal Climate Change Actions Create Both Burdens and Opportunities for Business (Oct. 2009)

"No matter where you fall on the spectrum of opinions about climate change – debating its existence, its causes, its expected effects, and the best ways to influence it – *major movement is taking place at the national level.*

Affected companies must be prepared and ready to position themselves not only to meet new requirements, but also to ***take advantage of new business opportunities***. No doubt many industries are already ahead of the curve in this ever-changing field, but many are not and may only now be seeking to come to grips with what these initiatives mean for them in practical, real-world terms."

9. Seyfarth & Shaw, LLP Three Major New Greenhouse Gas Developments Increase Likelihood of Near-Term Congressional and Regulatory Action

"In the last three weeks, several significant judicial, legislative, and regulatory developments have taken place. Taken together, they increase the likelihood that Congress will pass some form of greenhouse gas (GHG) legislation in the relatively near future."

10. Greenberg Traurig Greenberg Traurig appears to be Innovators with respect to newer green activities and advise their clients regarding federal, state and local incentives and procurement opportunities for alternative energy and clean tech products and activities, ***the development and trading of renewable energy credits and greenhouse gas emissions credits***, sustainable building and real estate development, electric vehicles and "greening" of product lines, companies and brands.

A list of some of their relevant client Newsletters associated with the topics of Greenhouse Gas Emissions (GHG's) are featured as follows:

- CARB Adopts Greenhouse Gas Reporting Regulations (Jan. 2008)
- California's Mandatory GHG Reporting Regulations (March 2009)
- Energy and Environmental Provisions in the Stimulus Package (March 2009)

- California Energy Commission Takes Lead in GHG Regulation of Power Plants (Jan. 2009)

11. Thompson & Knight LLP

Scott D. Deatherage is a partner in the above firm and focuses his practice on permitting, compliance, administrative law, and judicial litigation in air emissions, wastewater discharges, hazardous waste, hazardous substances, and toxic substances. He represents clients before local, state, and federal environmental agencies and state and federal courts.

Mr. Deatherage is experienced in drafting environmental disclosure statements for Securities and Exchange Commission documents and assessing the impact of the Sarbanes-Oxley Act on such disclosures.

He is the leader of the Firm's Climate Change and Renewable Energy Practice Group. He advises clients on climate change and greenhouse gas legislation and the effects on corporate strategy to manage both risks and to leverage opportunities. In addition, he advises clients on carbon credit transactions, including the purchase and sale of such credits.

Mr. Deatherage authors two blogs relating to the environment. On his blog "Law and the Environment," he publishes articles, commentary, and analysis of the ever-evolving legal, policy, and practical developments in environmental law, management, corporate governance, and financial disclosure. This blog also discusses how affected corporations as well as their management and directors are evolving to survive and prosper in this dynamic regulatory environment. On his other blog, "The New Carbon Cycle," he offers news and analysis of the rapidly evolving law and policy surrounding carbon trading and markets, climate change, and renewable energy..

Below is relevant correspondence authored by Mr. Deatherage on January 6, 2010:

“I spent a good deal of time deciphering and writing a chapter for my book *Carbon Trading Law and Practice* on the current proposed bill in the Senate on cap and trade. Not the most exciting way to spend the holidays, but a good time to write since things were slower and fairly quiet.

What I've discerned is that if the bill is voted out of the Senate, ***there will be various issues arising in domestic and international carbon credits in terms of issuing, registering, transferring ownership of credits, and the exchange of credits from outside the United States for US credits in the form of allowances or offset credits.*** As this market shoots up to say $100 billion per year, at $10 a credit that is 10 billion individual carbon credits, each with its own number, each with risk of being entered improperly in a huge EPA

computer database. There would appear to be significant risk of error in these systems.

The state and voluntary carbon credits will be exchanged for the US credits as well. This adds another layer of potential risk.

The other issue that I'm starting to explore is the relationship of the EPA registry to carbon credit exchanges where people want to buy and sell credits like stocks. This could add an even greater risk if carbon markets move quickly and become fairly liquid.

I see risk of error as the EPA, state, voluntary, UN, and other countries registry databases and the various exchanges all have to be reconciled.

12. Holme, Roberts & Owen, LLP Another FNF approved firm actively involved in climate change initiatives and developments in the area of cap-and-trade and emissions trading. Below are but a few newsletters authored by Partners in their environmental practice group. This firm is highly involved in this ever-changing area of the law.

- California's Draft Carbon Emissions Inventory Determining Rulemaking (October 2007)
- Governor Ritter Announces Colorado Climate Action Plan (November 2007)
- Corporations Pressured to Disclose more Information about Potential Risks Associated with Climate Change (December 2007)

13. Luce, Forward, Hamilton & Scripps, LLP Yet another FNF approved firm actively involved in climate change initiatives and developments in the area of Greenhouse Gas emissions (GHG's). Below are but a couple of articles authored by Suzanne Badawi, a Partner in their environmental practice group. This firm clearly is involved in this ever-changing area of the law.

- *"The "Global Warming" Insurance Claim-Greenhouse Gas Emissions Are a Growing Liability"* an article in Claims-Covering the Business of Loss (August 2008)
- *"Global Warming: Are You Covered?"* MCLE Self Study

The above articles deal with the subject of what the author sees will be a growing trend involving claims made by insured's under a commercial general liability (CGL) policy. According to the author, currently it is unclear whether or not carbon dioxide and other greenhouse gases will be considered a pollutant which may be excluded from coverage for damages under the absolute pollution exclusion (APE).

14. Latham & Watkins LLP *"Global Carbon Credit Markets-Issues and Opportunities" (April 2008)*, by Kelley Gale, Partner of the Finance Department in San Diego office, David Langer, counsel of the firms Environment, Land & Resources (ELR) Department in New York; and Ryan Waterman, an associate of the ELR Department in the firm's San Diego office

"Another effect of the developing GHG emissions markets is the advent of new types of investment projects, like carbon sequestration, afforestation, and the return to long-dormant projects, such as nuclear power. Both the EU and the US have begun testing carbon sequestration technology, which is expected to hold great promise for GHG emission reductions from the electric power industry."

"The lack of clearly defined and stable regulatory programs to govern the carbon markets will continue to present challenges for traditional project finance deals, which rely on stable and relatively predictable economic risks.

At present, the complexity and evolutionary nature of the market mechanisms can make it difficult to assess and mitigate the risks associated with projects connected to the markets. However, the large economic value and momentum of the markets suggest that there will be investment opportunities and substantial benefits to be
gained in this arena."

15. Sonnenschein Nath & Rosenthal LLP "Carbon Credits May Be Subject to Oversight as "Commodities"" (Feb. 2009)

"Speaking at last year's Carbon Trading Finance Conference in New York City, CFTC Commissioner Bart Chilton provided background on this approach. Commissioner Chilton forecasts the marketplace of carbon credits to become the largest contract traded in the futures markets, **likely totaling $2 trillion a year within the next five years.** He remarked that other environmental futures commodities were already regulated by the CFTC and that provided a basis for taking appropriate measures - neither too strict, nor too lenient - on carbon credit assets. Among the items mentioned were the interest of the CFTC in receiving reports on all transactions, including over-the-counter transactions above a certain size."

"Second Stimulus Plan to Include New Energy Economy Initiatives" (Dec. 2008)

"…approximately one-fourth to one-third of the economic recovery package should be directed toward funding and investing in clean energy projects, including technology and infrastructure. Suggestions from witnesses spanned a wide range of size and scope, and included the construction of a national smart grid, weatherization programs, and energy efficiency tax credits. Additionally, witnesses recommended that the stimulus provide funding for green jobs initiatives that Congress has already authorized…"

16. Skadden, Arps, Slate, Meagher & Flom LLP "Banking on the Environment: Profiting from Investment in REDD" (Summer 2009) by Gia Schneider, William L. Thomas (Counsel in the firm's Environmental and Climate Change practices), and Benjamin Vitale. Below are just some excerpts from an extremely insightful article regarding measures to reduce greenhouse gas emissions form deforestation and degradation (REDD). One of the many articles written on the subject of climate change, carbon offset credits and cap-and-trade coming out of this firm.

"According to some estimates, there are more than one hundred forest-carbon projects worldwide measuring emission reductions using best practices and sound methodologies. In order to ensure the investment-grade quality of these forest carbon activities, project developers must clearly address the following key project design components:

1. Establishment of clear project boundaries with sufficiently clear land tenure and resulting carbon rights ownership;

2. Completion of agreed upon project implementation activities (examples as noted above) following a detailed implementation timeline;

3. Use of an established carbon accounting methodology to produce an annual emissions-reduction schedule;

4. Credible validation of the project;

5. Use of industry standards for measuring climate mitigation, community, and biodiversity benefits;

6. Creation of a stakeholder engagement plan that follows best practices, particularly on benefits-sharing agreements, legal
Requirements and minimum standards set by government and international bodies, such as the United Nations Permanent Forum on Indigenous Issues;

7. Establishment of a partnership and management structure that defines responsibilities of all parties and includes all key technical and financial experience necessary to implement the project; and

8. Development of a strong financial analysis that includes detailed costs, revenues, sufficient financial returns, and a risk-management strategy."

"Three critical aspects of governance and law must be addressed in order to attract the private-sector financing necessary to catalyze REDD. Specifically, there must be:

A). a clear chain of custody and ownership of forest-based emission reductions**;**
B). reasonable allocation of responsibility for the production of emission reductions and straightforward compensation or benefits-sharing mechanisms; and
C) sound integration of REDD measures and other environment or forestry laws, sectoral policies, and environmental and social standards.

This may involve separating the REDD emission-reduction right from land tenure. If emission reductions are tied to various types of land tenure**, land-tenure rights and ownership must be clarified along with the usufruct rights of private forest owners…**"

"**Over time, the price of carbon is expected to increase as global emissions limits are tightened. Thus, over time, financial flows to landowners for protecting forests will increase**, outweighing the opportunity costs of the activities that drive deforestation."

"…it is essential that domestic and international action on forests be credited under U.S .climate change legislation."

"…there should be a strong focus on **creating credits from REDD projects** that are fully fungible with other credits traded in the global carbon market."

17. Forbes Magazine, *" The Carbon Windfall" by Jonathan Fahey, December 31, 2009*

This article profiles John Rowe, the longest-serving utility executive in the Utility industry who is the chief executive of Exelon, the country's most valuable utility, as measured by market value.

Under Rowe's management, Excelon, sold off most of the company's coal power plants and focused on nuclear facilities, creating a subsidiary that sells power produced by 17 nuclear reactors which pollute far less carbon than traditional, competing energy producers.

Rowe advocates imposing a price on carbon pollution, either voluntarily, on individual state-by-state basis, by the Environmental Protection Agency or through Federal Cap and Trade legislation. Such carbon taxes would

represent a return on his investment to minimize carbon pollution, thereby increasing his companies, revenues, profits and market cap.

Rowe has been an advocate and lobbyist for Cap-and-Trade because, according to Rowe, he expects that if there is a cap on carbon emissions by either the Federal Government or the EPA, the value of the permits to offset these emissions would rise.

This is one of many articles reflecting a growing trend in leading companies intending to improve financial performance and shareholder value by providing leadership in the field of reducing pollution and improving non fossil fuel energy efficiency.

18. Strategy & Business Magazine, December 21, 2009

"After Copenhagen: Impact, change and Implementation"

This article is an interview with Booz & Company partners Nick Pennell and Rob Fowler whom attended the Copenhagen Conference concerning climate change, reduced pollution and increased sustainable energy efficiency. Theses experts essentially state that there was much controversary in Copenhagen relative to offsets and the implementation of meaningful change. In their view change must include all "stakeholders" from international governments as well as leading corporations. Their main point is that this change will take place, and that the leaders of industry are in a position to provide such leadership.

19. The PEW Center on the States

Exerpts from an article entitled "Climate Change 101: Cap and Trade"

There are a variety of policy tools to reduce the greenhouse gas emissions responsible for climate change. This installment of the of the Climate change 101 series explains how a cap-and-trade program sets clear limits on greenhouse gas emissions and minimizes the costs of achieving the target. By creating a market, and a price for emission reductions, cap and trade offers an environmentally effective and economically efficient response to climate change.

Policymakers have many options as they consider how to achieve greenhouse gas (GHG) reductions, but two approaches are most prominent: traditional command-and-control regulation, in which regulatory authorities direct how emissions limits will be achieved; and market-based approaches, which harness the forces of supply and demand to change behavior and achieve environmental goals. One proven market-based approach is cap and trade.

In a cap and trade program, the government determines which facilities or emissions are covered by the program and sets an overall emission target or "cap". This cap is the sum of all emissions from all included facilities. Once the

cap has been set, tradable emissions allowances (rights to emit) are distributed (either auctioned or freely allocated).

Each allowance authorizes the release of a specified amount of GHG, generally measured in one ton carbon dioxide equivalents. If a cap of one million tons of emissions is set, then one million one-ton allowances will be issued. Covered entities must submit allowance equivalent to the level of emissions for which they are responsible, thus creating a free-market for the purchase, sale and trade of the allowance permits.

20. The New York Times. Economic View, January 10, 2010
Of Individual Liberty and Cap and Trade; By Robert Frank

Some people oppose measures to limit GHG because they believe that global warming is a myth. These denialists may have a little extra spring in their step during the current cold snap, but their influence has been steadily waning.

The biggest remaining obstacle is disagreement over the legitimacy of proposed solutions. At the heart of the attempts to curb carbon dioxide emissions are two related proposals: 1. taxation of those emissions and 2. a system of tradable permits, also known as "cap and trade".

Both have been attacked as unacceptable restrictions on individual liberty. The attacks have come from both sides of the political aisle, but have been pressed with particular insistence by conservatives and libertatians.

It is a puzzling objection, because both proposals are squarely consistent with the framework advocated by conservatives' patron saint regarding matters related to private actions that harm others. That would be Ronald H. Coase, professor emeritus at the University of Chicago and the 1991 Nobel Laureate in economics, who will turn 100 this year. The writings of Mr Coase are the focus of matters such as "perpetrators versus victims" and the concept of whom is responsible for determining, regulating and pricing the cost of harm and the repair of said harm.

21. The New York Times, December 6, 2009
Forecast: Expect Temperatures to Rise in Copenhagen, by Tom Zeller, Jr

With the scientific consensus more or less settled that human activity---such as burning of fossil fuel, torching of forests and so forth—is contributing to a warmer and less hospitable planet, one might reasonably ask, why is it so hard to agree on a plan to curb those activities.

Many experts argue that the only way to tackle climate change is to put a price on carbon. Some say the best way to do that is to create a cap-and-trade system, in which industries are issued permits to emit carbon dioxide up to a

certain level, or cap. Companies that emit below the cap can sell their permits on a carbon market, where companies exceeding the cap will, presumably, buy them so they can continue to pollute. The total number of permits would not exceed an overall emissions target.

22. Time Magazine, Getting Your Slice of the Cap-and-Trade Pie, Bryan Walsh, July 7, 2009

> The U.S. Federal Cap and Trade system…"would establish the first national caps on carbon emissions. It would also create what would almost certainly be the world's biggest greenhouse-gas market, since companies would have the option to buy and sell carbon credits and offsets. Every smart, efficient enterprise that can rapidly bring down its emissions will be able to make a mint on the carbon market — and so will the carbon middlemen."

23. Financial Times, December 3, 2009

> In 2008, "the regulated market for UN-compliant permits, was worth $117.6 Billion" Voluntary Market Showing Maturity
>
> where a significant amount of credits is involved.

24. The Wall Street Journal, The Cap and Tax Fiction-Democrats off-loading economics to pass climate change bill, June 26, 2009

> "As the cap is tightened and companies are stripped of initial opportunities to "offset" their emissions, the price of permits will skyrocket beyond the CBO estimate of $28 per ton of carbon."

25. New York Times, September 30, 2009

> "Cap and trade is a regulatory system that sets a government limit on overall emissions of pollutants like the heat-trapping gases scientists have linked to global warming-- the "cap." It then allows utilities, manufacturers and other emitters to "trade" pollution permits, or allowances, among themselves. A climate bill that creates a cap and trade system for the gases that cause global warming passed the House in June 2009 and was introduced in the Senate in September."

26. Fortune-CNN Money.com, Carbon finance comes of age, Marc Gunther, senior writer, April 17, 2008

The cap-and-trade market for emissions - coming soon to America - is creating huge new opportunities for business.

> "(Fortune Magazine) -- If all goes according to plan, the business of buying and selling rights to pollute the atmosphere with carbon dioxide and other greenhouse gases - carbon trading, as it is known - will curb global warming and save the world. That is its only purpose. Along the way, a lot of people will get rich.

Last year traders bought and sold about $60 billion worth of emissions allowances, mostly in Europe and Japan, where governments regulate greenhouse gases.

If, as expected, regulation comes to the U.S., this country's carbon-trading market is expected to be worth $1 trillion annually by 2020. That's why investment banks, utilities, industrials, and hedge funds - among them GE (GE, Fortune 500), Goldman Sachs (GS, Fortune 500), J.P. Morgan Chase (JPNV.L), and AES (AES) - are rushing into the business of carbon finance.

To succeed they will have to master what is surely the most bizarre, complicated, and controversial new industry of the 21st century. We'll try to break it down, beginning with a couple of things any Fortune reader can understand: a pile of pig manure and a private jet."

27. Clean Tech Law & Business (Spring 2009), White paper, Tessa Schwartz and William Sloan of the law firm Morrison & Forester. Carbon Value in Transactions: A Legal Perspective

> Given the potential size of the carbon market, investors, start-ups and established companies all need to consider the relevance of carbon in their business strategy. According to a report by World Bank, the value of the global carbon market in 2007 was approximately $64 billion, up from approximately $31 billion in 2006.
>
> According to the latest figures, the global carbon market doubled in size in 2008, with figures varying from $118 to $125 billion. Europe and Japan currently make up a dominant portion of the world market. In the event cap-and-trade regulations are enacted in the U.S., analysts predict that the carbon emissions market will be valued at $1 trillion by 2020.

28. Business Week, Forestry's Growing Role in Carbon Finance, Mark Scott, December 3, 2009

> "One of the bright spots at the Copenhagen climate change summit could be the establishment of a scheme to protect forests and their carbon-absorbing capacity."
>
> "Because deforestation accounts for about one-fifth of annual increases in carbon dioxide, countries—especially in the developing world—could be paid not to cut down trees.
>
> The investment would then be used to offset CO2 output in the West. That would extend existing carbon financial instruments, worth billions of dollars each year, to vast tracts of forest…"

29. The Economist, World Economic Forum, Carbon Markets, December 3, 2009

> "The US, which could-some would say should-be the deepest carbon credit market in the world, has been somewhat left behind, but is now making rapid progress

30. U.S. Government Accountability Office

> In mid-2008, the U.S. Government Accountability Office released a report titled, "Carbon Offsets: The U.S. Voluntary Market Is Growing, but Quality Assurance Poses Challenges for Market Participants."
>
> In response to this type of concern, negative media attention and mixed sentiments from the environmental community, over the past several years voluntary carbon market stakeholders rapidly focused on creating defining processes, supportive infrastructure and, in some cases, increasing transparency in the market

31. Financial Times, Guy Dinmore in Rome, Published: November 12, 2009

Top executives arrested in Italy wind farm probe

- Fraud involved in obtaining public subsidies to construct wind farms.

  Large number of wind farms had been built with public subsidies but had never functioned. Indication that approximately $14 million was involved.

  With third party check on verification and assurance of credit creation, much of the fraud would be recognized and likely prevented, in cases where it is not, then the product would secure the interest of government, or the private sector in the primary and secondary markets.

32. U.S. News and World Report**,** Carbon Credits Spell New Future for Forests, Jeff Barnard, Associated Press Writer, November 28, 2009

> "Landowners are already starting to reap the benefits of leaving trees standing as companies look for ways to *voluntarily offset their carbon footprint.*
>
> The Walt Disney Co. recently pledged $7 million to protect or restore tens of thousands of acres of forest in the Congo basin, the Amazon basin, California's North Coast and the lower Mississippi Valley.
>
> Pacific Gas and Electric Co. is paying the city of Arcata, California to manage part of its city forest to store carbon for the next 100 years
>
> Brian C. Murray, director for economic analysis at Duke University's Nicholas Institute for Environmental Policy Solutions, said carbon credits could move tens of millions of acres of cropland into forest…"

33. Bloomberg.com, Lisa Kassenaar, December 4, 2009

> The U.S. Senate is debating a clean-energy bill that would introduce cap and trade for U.S. emissions. A similar bill passed the House of Representatives in June. The plan would transform U.S. industry by forcing the biggest companies -- such as utilities, oil and gas drillers and cement makers -- to calculate the amounts of carbon dioxide and other greenhouse gases they emit and then pay for them.
>
> - Estimates of the potential size of the U.S. cap-and-trade market range from $300 billion to $2 trillion.
> - Wall Street has already spent hundreds of millions of dollars hiring lobbyists and making deals with companies that can supply them with "carbon offsets" to sell to clients.
> - The banks are preparing to do with carbon what they've done before: design and market derivatives contracts that will help client companies hedge their price risk over the long term. They're also ready to sell carbon-related financial products to outside investors.
> - The Chicago Climate Exchange, the biggest U.S. voluntary greenhouse-gas-emissions trading system, trades 180,000 tons of carbon a day, up from 40,000 tons in 2006.

34. New Carbon Finance, Fortifying the Foundation: State of the Voluntary Carbon Markets 2009

> "The largest single country supplying credits was the United States, which was the credit source for 28% of OTC [voluntary carbon offset] transactions."

35. Farm Press Hembree Brandon, Editorial Staff Sep 9, 2009

> "The U.S. appetite for carbon trading is strong. CCX is now trading 3,000 to 5,000 contracts per day, with 20 percent of the largest carbon dioxide-emitting utilities in the U.S. participating; 11 percent of the Fortune 500 companies; and 17 percent of the Dow Jones Industrials companies."

36. Offsets in Federal Climate Change Legislation: What You Need to Know Now, Melinda M. Beck and Johnathan W. Dettmann, Faegre & Benson, August 3, 2009

> "Regardless of whether a landowner chooses now or in the future to adopt practices or land use changes that might qualify for carbon offsets, it is critical at any time for each landowner to include specific language in any contract, lease, easement or other legal agreement related to the land that reserves to the landowner the rights to any potential offsets.
>
> Failure to include language that clearly states who has the right to offsets could result in a dispute or even litigation over the ownership and use of any available offsets."

37. Biomass Related GHG Reduction Opportunities, 2009 BIOMASS Conference & Expo in Portland, Ore.

> The session investigated possible issues surrounding carbon capture and trade in the U.S. and included speakers Rena Gelb, vice president of Carbon Credit Capital; Bill Holmes, Stoel Rives LLP partner; and Peter Weisberg, offset project analyst of Onsite Power Systems.
>
> Holmes steered the panel toward legalities involved with carbon cap and trade.
>
> "These credits have value, and this is an initial point you need to keep in mind—whether in a voluntary market, or a regional compliance market, or under some sort of a federal cap and trade system," he said.
>
> "It's going to have greater value under a federal cap and trade system, but from a lawyer who sees a fair number of project documents, if this thing

has value, everyone involved in the project needs to give very careful thought about *who actually owns the carbon offset. It is by no means obvious, and that can create problems."*

Holmes pointed out that if carbon credits become extremely valuable at some point, *ownership* will become something worth fighting over.

"Is it the developer? Is the lessor, or is it some other party? Don't assume the answer to that question," he said. "The need to communicate (and the ability to insure)that effectively in agreements is essential."

38. Soil Conservation Commission Carbon Sequestration Fact Sheet

"Development of a **Carbon Encumbrance Inventory (CEI)** or some other registry. While the US Federal Government has not developed this Carbon Market Infrastructure formally, a number of states including California and Oregon have developed their own Protocols for the sale and purchase of Carbon Credits.

Much risk comes in the form of the *absence of a legal land encumbrance document showing a title hindrance which insures buyers that their Carbon Credits* are not already covered by another purchase.

Land exchanges (via land title) are complicated by parcels which may be encumbered by a carbon credit purchase in a lease agreement, but which the prospective buyer is unaware. *Currently there is no insurance market (yet developed) for carbon credit exchanges.*

A Carbon Encumbrance Inventory would potentially serve to remove or mitigate these and related complications. Further, early carbon trades lack a measure for quality, which has the effect of driving down trade prices and forcing more expensive projects, with higher quality, out of the market."

http://www.scc.idaho.gov/PDF/Carbon%20Sequestration/CSFactSheetNov2007.pdf

39. Registries

Numerous for and non-profit entities have emerged domestically for purposes of tracking and verifying carbon offsets generated via land sequestration projects among others.

These registries would play an important role (similar to county land records) for purposes of insuring ownership, validity and enforceability of carbon offset credits. As the U.S. carbon market continues to evolve, the players are likely to be consolidated.

Registry List: http://www.srs.fs.fed.us/pubs/gtr/gtr_srs107.pdf. U.S. voluntary registries include APX, Markit and American Carbon Registries

40.. New Carbon Finance, Fortifying the Foundation: State of the Voluntary Carbon Markets 2009

"Proving the legitimacy of carbon offset projects remains a major issue in the marketplace, leading to a so-called “flight to quality.”

"The greatest challenge for the voluntary carbon market has, and continues to be, legitimatizing the effectiveness and legitimacy of the intangible carbon offset product.

41. The Times Online, Danny Fortson, Georgia Warren, - September 13, 2009

Carbon-trading market hit as UN suspends clean-energy auditor. Fraud/inconsistency in market due to lack of regulation, transparency, and conflict of interest.

$100 billion market legitimacy in question after world’s larger auditor of clean-energy projects suspended by United Nations inspectors. Auditor unable to prove projects properly vetted or even qualified to do so. Second such company under fire for similar violation.

Low carbon projects in developing world - 900 projects are now running, producing billions of credits, with thousands more in the pipeline.

Currently, there is no confirmation of project legitimacy or credit integrity. By providing an organized method of third-party review, as well as assurance if credit is invalidated, it will create security in the market and promote confidence

42. Quality Offset Initiative*,* Ensuring Offset Quality-Integrating High Quality Greenhouse Gas Offsets Into North American Cap-and-Trade Policy, July 2008

“Offsets Should Be Unambiguously Owned. *Clear and uncontested title to offset credits should be established by contractual assignment and/or government recognition of ownership rights.* Furthermore, the *transfer of ownership of any and all offset credits must be unambiguous and documented.* Once sold, the original seller of the offset credit (and the project owner) must cede all rights to claim future credit for the same reductions in order to avoid double counting. Finally, offsets must be serialized and accounted for in a registry or other approved tracking system.”

***43. Ethanol Producer Magazine**, Capturing the Value of Carbon Credits in Biofuels Projects, John Eustermann and Randy Shefman with Stoel Rives LLC, April 2008*

> "Once the potential for credits is understood, developers should look to clearly address their ownership in facility contracts in order to avoid disputes over title.
> While it is difficult to forecast exactly how carbon markets will evolve, forward thinking and a few appropriately placed words should minimize the potential for history to repeat itself. "

44. Conservation International, Forest Carbon – Law and Property Rights, David Takacs for (November 2009).

> "Laws that regulate carbon, or contracts that stipulate rights and responsibilities for forest carbon projects must be clear on what, precisely, is being owned, and by whom.
>
> This is essential if project actors are to understand who can manage the land to maximize carbon benefits (whether through sequestration or emissions avoidance activities), and who can market the carbon that results from these activities.
>
> These property rights are not always so clear! This becomes particularly urgent when local communities are negotiating carbon rights: the idea that carbon can be property is novel enough, but the various forms that such property can take adds another level of complexity that requires careful elaboration and translation.
>
> Laws and contracts may distinguish between: sequestered carbon; carbon sinks; carbon sequestration potential; carbon credits; and usufruct rights."

45. Wall Street & Technology, Is Carbon Trading the Next Big Thing?, Penny Crosman Jul 19, 2009

> "The fledgling U.S. carbon credit market, currently a $100 million-plus business, is poised to skyrocket if The American Clean Energy and Security Act of 2009, which recently was passed by the House, makes it through the Senate. The bill would limit, or "cap," the amount of carbon emissions that companies can produce each year.
>
> Under the bill, sponsored by Representatives Henry Waxman (D-CA) and Edward Markey (D-MA), firms that produce more greenhouse gases than they're allowed would be able to buy credits from companies that have

produced fewer emissions than they're allotted, creating a large market for carbon credits. President Obama has estimated that more than a half-trillion dollars' worth of carbon credits will be auctioned in the first seven years after the bill is enacted."

46. Carbon Offsets Daily, Is carbon trading the next big thing for US business?, Sourced from Examiner.com, October 17, 2009

"Several themes emerged during the discussion, the role of carbon offsets and how to seamlessly create them, the expected price of carbon per ton on the open market, *the need for transparency* in operating markets and trading, regulatory consistency and neutrality on carbon market price and the stages of growth in carbon trading in the U.S. and world."

"Carbon offsets come from new players to the Climate Change control debate, tree farmers and foresters and cattle ranchers. Offsets are a cost effective way to reduce carbon in the near term through 2020. Many agreed available funding would not meet required market investment needs to create the offsets worldwide."

"The outlook for carbon trading in the U.S. looks bright…"

47. Legal Newsline.com, California releases draft cap-and-trade regulations, Chris Rizo, (November 24, 2009)

"SACRAMENTO, Calif. (Legal Newsline)-California officials on Tuesday released draft regulations of the state's cap-and-trade system aimed at limiting emissions blamed for global climate change.

The 135-page draft regulation was released by the California Air Resources Board. The proposed rule would establish a declining ceiling on greenhouse gas emissions and allow companies that emit large volumes of greenhouse gasses to buy and sell permits to meet their requirements.

"We have seen our green economy grow along with California's green initiatives, and I have no doubt the nation's first cap-and-trade program will also drive innovation and generate green jobs," said Schwarzenegger in a statement. "I look forward to a program in California that achieves our environmental goals and boosts our economy and I applaud the California Air Resources Board for laying the groundwork in developing a program with flexibility to achieve emission reductions at lower costs.""