

The Emerging Carbon Market:
*What Lies Ahead and How to Take Advantage of
Opportunities*
Presented at Capital Markets Board Symposium

Istanbul, Turkey November 11, 2009

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- Jeff Karp, co-head of the firm's Climate-Related Business and Technology Practice
- Sullivan & Worcester is the only U.S. law firm with a joint venture with an Israeli law firm: ZAG/S&W LLP
- The firm has offices in Washington, D.C., Tel Aviv, Boston, and New York City
- We also have affiliations with law firms in England, China, India, Ireland, Italy, Canada, and Romania

- The firm is a “one stop shop” for participants in climate-related business opportunities, including:
 - › clean technology and renewable energy companies and developers
 - › carbon project developers and owners
 - › carbon traders and investors
 - › purchasers and sellers of carbon credits
- This presentation discusses the plentiful opportunities for potential participants in carbon markets

The Creation of New Carbon Market Opportunities

- Concern about the impact of global warming is facilitating worldwide opportunities
- Opportunities will only continue to increase with the:
 - › tightening of greenhouse gas limitations globally
 - › implementation of renewable energy/electricity portfolio requirements
 - › impending enactment of climate change legislation by the U.S.
 - › trend toward ubiquitous cap and trade systems worldwide
- Expected results -- an increased demand for carbon offsets and credit-producing technologies and projects

- Huge market demand is developing for:
 - › Cleantech (\$8.4B in venture funding in 2008; 27% of all venture capital dollars invested in Q3, 2009 - Cleantech Group)
 - › Alternative energy (\$140B in global investment in 2008 - UNEP)
 - › Energy efficiency (est. \$300B market in 2004; expected growth to \$700B in 2030 - ACEEE)
 - › Green building (market is expected to double to \$96-140B by 2013 - USGBC)

- Government funding: \$80 billion by China, \$60 billion by U.S.
- Private markets:
 - › Recent IPO of A123
 - company developing batteries for the electric car
 - raised \$380 million, and increased company's value from \$1.3 billion to \$1.9 billion in one day

Value of Carbon Markets

- 2008:
 - › 4.9 billion tons of carbon exchanged in world carbon markets
 - › carbon market valued at \$125 billion
- 2009 (anticipated):
 - › 5.7 billion tons of carbon exchanged
 - › carbon market valued at \$85 billion
- 2020 (projected, with U.S. involvement):
 - › 38 billion tons of carbon exchanged
 - › carbon market valued at \$3.1 trillion

- Turkey's Renewable Energy Strengths:
 - › Wind
 - › Hydro-electric
 - › Waste-to-Energy Cogeneration
 - (energy from biogas)
 - › Geothermal
- Generation of carbon credits from Turkey projects
 - › Until post-2012 Kyoto climate regime is established, Turkey is limited to generating voluntary market credits

- U.S. buys 39% of all voluntary credits worldwide
- Chicago Climate Exchange
 - › Largest voluntary market in U.S.
 - accounted for 43% of all U.S. carbon trades in 2008
 - offsets are generated by qualifying carbon emission reduction projects, and may include projects conducted overseas

- Partnership with U.S. Department of Energy's (DOE) Argonne National Laboratory
 - › develops technical expertise
 - › training for Turkish officials in Argonne's energy planning and modeling tools to support long-range energy supply and demand projection
 - › improving and diversifying energy use
 - › developing renewable energy and reducing carbon emissions

- GE Energy Financial Services
 - › venture with GAM Holding A.S.
 - › GE EFS acquired 50% equity interest in GAM's subsidiary, GAMA Enerji A.S.
 - › purpose of venture – to invest in energy and water projects in Turkey and surrounding region

Opportunities for Project Developers

- › Zorlu Enerji and the Rotor Elektrik Zorlu Wind Farm
- › Attracted attention and representation of EcoSecurities
- › Successful development of the 54-turbine project would spark interest from around the globe in Turkey's wind technology

- Assist in adding carbon component to a clean technology or renewable energy project
 - › increases revenues and makes technology more attractive to investors
- Help find investors
- Help find joint venture partners, or parties interested in licensing technologies, developing projects, or purchasing carbon credits



Jeffrey Karp is a partner in ZAG/S&W's Washington, D.C. office and is the co-leader of ZAG/S&W's Climate Related Business & Technology Group.

Mr. Karp focuses on identifying and facilitating opportunities for clients to participate in global climate-related programs and projects, businesses, and markets.



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