

CONCEPT TO COMMERCE: Emerging Energy Technologies Summit

CONCEPT TO COMMERCE: The Emerging Energy Technologies Summit February 10–11, 2006 UC Santa Barbara, Corwin Pavilion

Conference Mission: to present current and emerging energy technologies for short- and long-term solutions to world needs, with additional focus on the technical, socio-economic and political factors which enable or obstruct their adoption.

Participate with financiers, engineers, scholars, business leaders and policy makers, in the development and creation of profitable and practical energy technology solutions that meet the market's evolving energy demands.

Friday, February 10

5:00 pm

Conference Kickoff

Gary Hansen, Associate Dean, UC Santa Barbara Technology Management Program

Henry Yang, Chancellor, UC Santa Barbara

Drs. Hansen and Yang will commence the conference with a short talk about its goals, events, and how University wishes to further engage in the dialogue between business and technology.

5:10 pm

Plenary Presentation: – “Power Plants and Microchips: Agile Production versus Economies of Scale”

Klaus Lackner, Professor, Earth Engineering Center at Columbia University

A distinguished researcher with prior positions at the Stanford Linear Accelerator Project and Los Alamos National Laboratory, Professor Lackner will share his thoughts about how both the supply and demand sides of energy will evolve in the coming years.

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5:50 pm

Introduction to the Department of Energy Efficiency and Renewable Energy

John Kersten, Manager, Golden (Colorado) Field Office of DOE

As head of one of the nation's 13 research field offices, Mr. Kersten oversees some of the leading work being done in wind, solar, and fuel cell power through public-private collaborative projects. In his speech, he will introduce the audience to some of the cutting-edge work being done.

6:20 pm

Introduction to Partnership for International Research and Education at UC Santa Barbara: Electron Chemistry and Catalysis at Interfaces

Alec Wodtke, Professor and Chair of Chemistry and Biochemistry, UC Santa Barbara

Professor Wodtke has been a leader in the field of electron chemistry for more than 20 years, and is a principal investigator with the University's PIRE-ECCI trans-national collaborative project in the discipline with the Dalian Institute in China. His work and that of the project have particular ramifications for solar energy technology, which he will share.

6:30 pm

Presentation: Hydrogen Production Utilizing Solar Energy

Can Li, Professor of Chemical Physics at Dalian Institute and member of Chinese Academy of Sciences

Professor Li is an internationally-renowned researcher in the area of both fundamental and applied catalysis. He is working to apply the fundamental principles of catalysis in designing and developing more selective and active catalysts for practical applications in environmental protection, energy conversion, fine chemicals production, and preparation of materials. In his speech he will discuss work being done in the area of solar energy.

7:00 pm

Reception & Cocktail Party

Reception by Business First National Bank

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Saturday, February 11

9:00 am

Welcome

Gary Hansen, Associate Dean, UC Santa Barbara Technology Management Program

Walter Kohn, Professor Emeritus and Nobel Laureate, UC Santa Barbara

Lois Capps, U.S. Congresswoman

Dr. Kohn, the recipient of the 1998 Nobel Prize in Chemistry, is widely regarded as the father of the density functional theory, which revolutionized the study of electronic materials science. He is the founder of the National Science Foundation's Institute for Theoretical Physics at UC Santa Barbara. Over a career spanning more than six decades, Dr. Kohn has published more than 200 journal articles.

Representing California's Central Coast in the U.S. Congress since 1998, Congresswoman Lois Capps sits on the House Committee on Energy and Commerce and on the Subcommittee on Energy and Air Quality, as well as the House Budget Committee. She has been a vigilant advocate for a cleaner environment and the development of alternative energy sources.

9:25 am

Presentations: Renewable Energy and the Future

Howard Berke, CEO, Konarka Technologies

Jim Dehlsen, CEO, Clipper Windpower

Maurice Hladik, Director of Marketing, Iogen Corporation

Mr. Berke heads up Konarka Technologies, a leader in the field of photovoltaics. The company has been awarded contracts from the Office of Naval Research, U.S. Army, Air Force and Navy, DARPA, National Science Foundation, California Energy Commission to develop lightweight, wearable solar cells, photovoltaic fabrics, printed roofing materials, and flexible products and packaging.

Mr. Dehlsen is the CEO of Clipper Windpower, a rapidly growing wind energy technology company which manufactures the 2.5 MW Liberty turbine and actively develops wind power generating projects in the Americas and Europe.

Mr. Hladik is the Director of Marketing for Iogen Corporation. Iogen Corporation is a world leader in converting cellulosic biomass into ethanol. Since April 2004 they have been producing commercial quantities of cellulose ethanol from wheat and barley straw at their million gallon capacity demonstration plant in Ottawa, Canada where they also have a commercial enzyme manufacturing facility.

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10:30 am

Panel Discussion:

Walter Kohn, Professor Emeritus and Nobel Laureate, UC Santa Barbara

Richard Flavell, CTO, Ceres Inc.

Charles J. McDermott, General Partner, RockPort Capital

Can Li, Member, Professor of Chemical Physics, Dalian Institute of Chemical Physics, Chinese Academy of Sciences.

Ted Sargent, Professor of Electrical and Computer Engineering, University of Toronto

Hal La Flash, Director of Integrated Resource Planning and Policy, PG&E (Panel Moderator)

Mr. Flavell oversees technology for Ceres Inc. of Thousand Oaks, CA. Operational since 1997, Ceres now employs over 120 people to develop break-through plants and plant-based products for a number of diverse uses, including providing a large-scale, sustainable, carbon-neutral source of renewable energy

As a partner with RockPort Capital, Mr. McDermott helps manage the investment of \$125 million in venture capital for energy and power technology companies. RockPort specializes in targeting new technologies enabled by revolutionary advances in basic physical sciences approached from an interdisciplinary framework.

Professor Sargent is one of the world's leading scientists at the forefront of nanotechnology research. He leads a lab of researchers making designer molecules and materials for communications and computing, medicine, and tapping new energy sources. He has been named to the *2005 Scientific American 50*, an annual list recognizing outstanding leaders in science and technology and is also "one of the world's top young innovators," according to *MIT's Technology Review Magazine*.

Mr. La Flash is responsible for planning for and attracting "best fit" renewable resource additions and evaluating the environmental aspects of PG&E's resource mix.

10:55 am

Q & A

11:05 am

Presentation: Societal Impacts of UC Santa Barbara Research

Matthew Tirrell, Dean of the College of Engineering, UC Santa Barbara

Dr. Tirrell will share some of the changes that technologies emerging from the University and businesses started at the University have brought about. With more than 30 percent of the engineering faculty also having business interests, the University has been a model of public-private interaction, generating \$7 billion in market value through mergers and acquisitions.

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11:15 am

Lunch and Short Film presentation: "Power of the Sun"
(Premiered in Washington DC Oct. 6th, 2005)

Introduction by Walter Kohn

Narrated by John Cleese and produced by Walter Kohn, this documentary film tells the story of photovoltaics – what it is, its history and background science, how it is implemented, and its future use for the world's energy needs.

12:45 pm

Presentations: Energy Efficiency/Conservation Companies

Steven L. Sperry, President and CEO, Verdiem Corporation

Craig R. Flint, President & CEO, Pentadyne Power Corporation

Bernd Keller, General Manager, CREE Inc.

Mr. Sperry is the president of Verdiem Corporation. Verdiem is the leading developer of power management software for PC networks. Verdiem's signature product, the Surveyor Network Energy Manager provides measurable energy and cost savings and simplified automated management of PC power options.

Mr. Craig is CEO of Pentadyne Power Corporation, a world class technology leader in manufacturing advanced flywheel power systems for protecting critical applications. Pentadyne's flywheel systems provide an economic, long-lasting, low maintenance, lightweight and environmentally sound power solution for a range of applications.

Dr. Keller's work at Cree focuses on the technology and product development of gallium nitride-based light emitters and microwave devices. He has 18 years experience in semiconductor materials and device fabrication, and has authored or co-authored more than 60 journal publications and conference presentations.

1:45 pm

Panel Discussion:

David Rohy, former Vice Chairman, California Energy Commission

Christopher McGill, Representative, American Gas Association

Steve Parry, Partner, NGEN Partners

David Berokoff, Technology Development Manager, Sempra Energy

Martin Waters, Partner, Wilson, Sonsini, Goodrich and Rosati, LLC. (Panel Moderator)

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Dr. Rohy was previously the Vice Chairman of the California Energy Commission, the state of California's primary energy policy and planning agency, charged with ensuring a reliable and affordable energy supply. He was appointed to the Commission by Governor Wilson in May 1995.

Mr. McGill is the managing director of policy analysis for the American Gas Association, a trade association that represents 195 local energy utility companies. The American Gas Association advocates the interests of its energy utility members and their customers, and provides information and services promoting demand and supply growth and operational excellence in the safe, reliable, and cost-competitive delivery of natural gas.

Mr. Parry is a member of NGEN Partners, providing catalytic, second-stage venture capital funding to emerging businesses. A professional geologist, he brings 25 years of minerals industry experience to the practice and its bottom-up approach to materials science and technologies sectors.

Mr. Berokoff is the Manager of Technology Development for Sempra Energy Utilities (Southern California Gas and SDG&E) and is responsible for RD&D, Emerging Technologies and venture fund programs.

Mr. Waters is a partner in the San Diego, California, office of Wilson Sonsini Goodrich & Rosati. Waters represents numerous public and private growth companies in a general counsel capacity. He also handles a wide variety of complex commercial transactions for clients, including public offerings of equity and debt securities; mergers and acquisitions; venture capital financings; and the formation of partnerships, strategic alliances, and joint ventures.

2:10 pm

Q & A

2:20 pm

Break

Presentations: Conventional Energy Companies and Associations

2:40 pm

American Gas Association

Chris McGill, Managing Director for Policy Analysis

3:05 pm

PG&E

Hal La Flash, Director of Integrated Resource Planning and Policy

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3:30 pm

"Technology Trends in the Energy Industry"

Sempra Energy

David Berokoff, Technology Development Manager

4:00 pm

Panel Discussion:

Gary Barsley, Director of Commercial Projects, Shell Solar

Maurice Hladik, Director of Marketing, Iogen Corporation

Steve DenBaars, Co-Director, Solid-State Lighting and Display Center, University of California

Terry Tamminen, Special Advisor, For Governor Arnold Schwarzenegger

Frank Alix, Chairman and Chief, Powerspan Corp.

Daniel Weiss, General Partner, The Angeleno Group (Panel Moderator)

Mr. Barsley is the Director of Commercial Projects for Shell Solar Industries. Shell Solar manufactures solar electric modules and provides 'turnkey' design & installation of large-scale commercial solar systems worldwide. An engineer with Sales, Marketing and Operations management background, he brings 24 years of experience in environmental technologies, and in renewable & traditional energy fields.

Mr. Hladik is the Director of Marketing for Iogen Corporation. Iogen Corporation is a world leader in converting cellulosic biomass into ethanol. Since April 2004 they have been producing commercial quantities of cellulose ethanol from wheat and barley straw at their million gallon capacity demonstration plant in Ottawa, Canada where they also have a commercial enzyme manufacturing facility.

Dr. DenBaars has been a UCSB faculty member since 1991. His specific research interests include growth of wide-bandgap semiconductors (gallium nitride-based), and their application to Blue LEDs and laser and high-power electronic devices. DenBaars has filed more than 18 patents on gallium nitride technology and is author or co-author of more than 430 journal publications on the subject.

Mr. Tamminen was appointed Special Advisor for Energy and Environmental Policy by Governor Arnold Schwarzenegger on January 1, 2006. Tamminen, who previously served as the Governor's Cabinet Secretary and Secretary of CalEPA, works to shape policy that balances conservation and environmental protection with economic benefit. Tamminen has extensive background in environmental policy and is an active proponent of clean and renewable energies.

Mr. Alix is Chairman and Chief Executive Officer of Powerspan Corp, which he co-founded in 1994. Alix has over 25 years of experience in energy related fields, beginning his career as a nuclear engineer at General Dynamics and later as a senior nuclear engineering manager at Portsmouth Naval Shipyard. Prior to assuming his present role at Powerspan, Alix worked as a venture capital investor where he directed investments in early-stage technology ventures.

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Mr. Weiss is co-founder and Managing Partner of The Angelino Group (AG), a California-based private equity firm focused on high growth investments in the energy technology sector. AG makes investments broadly across the energy industry to support innovative, well-managed, early-to-expansion stage companies. Their investors and advisors include the energy industry's most prominent executives, bankers, scientists, and former senior government officials involved in state and national energy policy.

4:25 pm

Q & A

4:35 pm

Presentation

Terry Tamminen, Special Advisor, For Governor Arnold Schwarzenegger

5:05 pm

Final Presentation: "Future Energy Resources"

Klaus Lackner, Professor, Earth Engineering Center at Columbia University

5:30 pm

Reception