

ADVANCED ENERGY 2009

NEW YORK STATE'S PREMIER CONFERENCE FOR ADVANCED ENERGY

HYATT REGENCY HOTEL AND CONFERENCE CENTER • HAUPPAUGE • NEW YORK • USA



CONFERENCE PROGRAM



ADVANCED ENERGY
RESEARCH & TECHNOLOGY CENTER

www.aertc.org

WELCOME TO ADVANCED ENERGY 2009



Welcome to the most important conference you will attend this year on the most important subject on our national agenda. If you are reading this on November 18 or 19, 2009, at Advanced Energy 2009, you don't need anyone else to tell you why energy is the crucial challenge facing humanity today. You get it and you are here for answers, ideas and new questions. You've come to the right place.

Last year's conference was the biggest such event ever held in New York State to address this critical issue, and Advanced Energy 2009 has leaped far ahead of it. We have had to enlarge the event to two full days this year because there simply weren't enough hours in one day to fit all 189 energy subject matter experts. We have organized the speakers into thirty-five sessions in five different tracks so you may explore a rich diversity of subjects and technologies.

We are especially pleased to partner with the U.S. Department of Energy for a half-day portion of the schedule in which DOE representatives will showcase advanced national programs from the Office of Science, the Office of Energy Efficiency and Renewable Energy, and the Office of Electricity. These nationally important topics include Superconductivity and the Smart Grid, Climate Measurement and Modeling, Basic Science for Advanced Energy, and Renewable Energy Science.



We salute the five New York State Energy Frontier Research Centers (EFRCs) that DOE awarded earlier this year. These programs exemplify the intellectual leadership and science-based technological innovation our state and our nation must cultivate and nurture to compete in the energy industry of the 21st Century.

The Smart Grid, as a subset of a larger Smart Infrastructure, is a major aspect of this industrial transformation. The consumption of energy to support the information infrastructure that has mushroomed over the last two decades – from mainframes to minicomputers to desktops to huge networks accessing huge data centers through private networks as well as the Internet, and billions of interconnected wireless devices – has not been matched on the energy industry's side by a parallel use of information technology to monitor and manage the growing energy supply to feed this insatiable demand. Making the electric power grid "smart" enough not only to cope effectively with projected growth curves, but also to meet the challenge of integrating alternative and renewable sources seamlessly into the grid, will require the application of new computer, telecommunications and micro-nano-electronics technologies to manage, protect and optimize the power network:



- To monitor and report the status of millions of new and emerging data points, from Smart Meters in homes and businesses to Plug-in Hybrid Vehicles (PHEV's), to sensors on electric transmission lines to remote control devices at substations to complex interactive systems at generating plants
- To recognize needs and initiate corrective actions – and to increase system reliability – with automation
- To forecast demand patterns and "learn" to adjust the forecasts by incorporating huge volumes of detailed new data on usage and supplies
- To optimize the use of energy assets, allowing for weather effects with detailed real-time information
- To integrate intermittent and distributed generation and storage resources
- To protect the grid's two-way communications and information systems against attack by providing state-of-the-art Cybersecurity systems and to enable customers to make personal energy-cost choices and exercise unprecedented control over their energy usage

The challenges are of historic proportions, but so are the possibilities. As a direct outgrowth of last year's conference and with substantial guidance from NYSTAR and NYSERDA, we are pleased to have taken an active role in the creation of the New York State Smart Grid Consortium, which will be an unprecedented, and we believe unparalleled, collaboration of all of the state's major power producers and distributors, the Independent System Operator, the Public Service Commission, the New York Power Authority, the NYSERDA and NYSTAR arms of NYS, along with leading industry suppliers, universities, and research institutions to help focus the efforts of these key constituencies for Smart Grid technology development, deployment, implementation, and enhancement. To put it bluntly, we want to ensure New York an impregnable position and early and rapid deployment in the vanguard of the biggest technology revolution in the energy industry in more than a hundred years.

The Consortium, which is housed in the **Advanced Energy Center**, is working statewide with industry and government to establish major test-bed facilities for the pre-deployment testing and validation of new Smart Grid technologies. We expect this testing facility at the AEC to fill a critical gap for utilities as they demand that these technologies demonstrate their "safety and efficacy" before being installed in millions of homes and places of business.

This conference, where we will all be able to dig deeply into these profoundly important issues, could not take place without the generous support of our humbling large number of sponsors, who have given unstintingly not only of their tangible resources but also of their knowledge and expertise to help create a program whose content will have lasting value to all participants, from entry level explorers to experienced practitioners. You will see the sponsors' names in print, in electronic form and in various places around the conference venue, but we want to recognize them directly here:

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We also wish to acknowledge the extraordinary support the Advanced Energy Center has received from our state government, Governor David A. Paterson, and particularly the Long Island delegation to the New York State Senate, including Senate Minority Leader Dean Skelos and Ranking Member of the Senate Higher Education Committee Kenneth P. LaValle. Without their vision and strong leadership, the AEC's Platinum LEED facility would not be rising right now as the second building in the Research and Development Park on Stony Brook University's campus.

With our best wishes for effective energy research and early and rapid deployment,

Robert B. Catell
Conference Co-Chair
Chairman
Advanced Energy Center

John Kelly
Conference Co-Chair
Senior Vice President
IBM

Yacov Shamash
Conference Co-Chair
Vice President for Economic
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and Applied Sciences
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*Marketing and Conference Promotion by
Sanna Mattson MacLeod*



A WORD FROM OUR HOSTS

"We are proud to be a host sponsor of Advanced Energy 2009, an event that promises to bring leading experts accelerating the development of emerging energy and environment technologies together with those who are looking to implement those technologies for the benefit of their companies, organizations and communities. Through the sharing of ideas and innovative concepts we can develop smarter solutions to the challenges that confront us. IBM looks forward to joining that discussion."



– *Rich Lechner*
Vice President, Energy & Environment, IBM

"Electric utilities across the state and nation are seeking to adapt Smart Grid technologies to improve performance, reliability and energy efficiency. The Advanced Energy Conference brings together public and private sector utility executives and managers to help facilitate the exchange of important information that will speed up that process."



– *Richard M. Kessel*
President and CEO, New York Power Authority

"This year's Advanced Energy Conference provides an inclusive vehicle for linkage between industry, our energy providers, and the energy research community. The depth and breadth of participating institutions highlights our diversity and further illuminates the range of topical areas in which we can collectively achieve measurable results. As New York State's premiere Advanced Energy Conference, it is incumbent upon us to actively facilitate the interaction and technology transfer activities you will experience here. We are especially pleased at the leadership role the Department of Energy, and locally, Brookhaven National Laboratory, has provided in shaping the conference this year. "



– *Samuel L. Stanley, Jr., M.D.*
President, Stony Brook University

"We are at the doors of an energy revolution. The Advanced Energy 2009 Conference provides a rich forum to discuss the many leading-edge ideas under consideration and how they can contribute to New York's future. As a partner in providing energy solutions, National Grid is pleased to sponsor this important and significant event. "



– *John Caroselli*
Executive Vice President, National Grid

ACKNOWLEDGMENTS

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Brookhaven National Laboratory

Professor Marjaneh Issapour

Department of Electrical/Computer
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Farmingdale State College

Dr. Devinder Mahajan

Energy Sciences & Technology Department
Stony Brook University and Brookhaven National Laboratory

Dr. Miriam Rafailovich

Materials Science & Engineering Department
Stony Brook University

Dr. John T. Wen

Director, Center for Automation Technologies
and Systems (CATS)
Interim Director, NSF Smart Lighting
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Professor, Dept. of Electrical, Computer, & Systems Eng.
and Dept. of Mechanical, Aerospace, & Nuclear Eng.
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Special Events Coordinator
Stony Brook University

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David Winchester

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CleanTech Rocks

Here is a partial listing of the academic and research institutions presenting at the conference:

- Cornell University
- Carnegie Mellon University
- Stony Brook University
- Brookhaven National Laboratory
- National Academy of Science
- NYAS - New York Academy of Science
- Argonne National Laboratory
- Penn State University
- National Academy of Science
- MIT
- General Electric Research
- USDA (United States Dept of Agriculture)
- Columbia University
- Pace University
- Cobleskill State College
- NCSU (North Carolina State University)
- Scripps Energy Institute
- Los Alamos National Laboratory
- DHS (Department of Homeland Security)
- Booz-Allen Research
- SAIC (Science Applications International Corporation)
- IBM Research
- University of Rochester
- Albany Nanotechnology Center, SUNY Albany
- CUNY (City University of New York)
- University of Buffalo
- NYU-POLY (New York University – Polytechnic)
- RPI (Rensselaer Polytechnic Institute)
- Philips Research
- Syracuse University
- NREL, National Renewable Energy Laboratory
- Office of Electricity, D.O.E.
- EERE, Energy Efficiency and Renewable Energy, D.O.E.
- Farmingdale State University
- Federal Transportation Authority
- NYIT – New York Institute of Technology
- EPRI – Electric Power Research Institute
- University of Pavia, Italy
- Office of Science, D.O.E.



CONFERENCE AGENDA

WEDNESDAY, NOVEMBER 18

8AM - 9:15AM

ECONOMIC DEVELOPMENT AND GREEN JOBS BREAKFAST

(The Business of Clean Tech – Panel Discussion) David Brancaccio (PBS), Frank Murray (NYSERDA), Nay Htun (SBU)

SESSION I
9:30AM - 10:45AM

TRACK A

ENERGY POLICY I

CHAIRPERSON
Tom Congdon,
NYState Energy

Jim Gallagher, NYC EDC
*New York City's Assault On
Climate Change*

Tom Peterson,
Climate Strategies

Carl Meyer,
**Central Hudson Gas &
Electric**

PANEL DISCUSSION

TRACK B

BIO-ENERGY SCIENCE & TECHNOLOGY I

CHAIRPERSON
Janet Joseph, NYSEEDA
*Overview Of NYS Bioenergy
Initiatives*

Dr. Patrick Hunt,
U.S. Dept. of Agriculture
*Manure Treatment For
Green Farming Systems*

Dr. Roy Periana,
Scripps Energy Institute
*Power & Energy Storage
Without Oil*

Dr. Gail Richardson,
EnergyVision
*Biomethane Pioneers In
Heavy Duty Transportation*

Mark Toscano,
Brookhaven Nat'l Lab
*Use BioFuels For
Stream Production*

TRACK C

SMART NETWORKS I MODELING AND SIMULATION

CHAIRPERSON
Dr. Jiyuan Fan, GE
*Modeling & Advanced DMS
Applications*

Dr. Eugene Feinberg,
Stony Brook University
Electric Load Forecasting

Jayant Kalagnanam, IBM
Analytics For A Smarter Planet

Devin Van Zandt,
GE Energy
*Future Of T&D Modeling
& Simulation*

TRACK D

GEOTHERMAL

CHAIRPERSON
Dr. Kenneth Rehfeldt,
Los Alamos
*Geothermal Research
At Los Alamos*

John Rhyner, P.W. Grosser
Heat Pumps Industry Status

John Dienna,
**Geothermal Nat'l
& Int'l Initiative**
*Geothermal Heat Pump
Technology: Capturing The
Energy We Own*

TRACK E

INNOVATION IN SCIENCE & TECHNOLOGY

CHAIRPERSON
Lee Silvestre, Raytheon

Dr. Satyen Mukherjee,
Philips Research

**Dr. Jai Menon, IBM
Research**

Duncan McBranch,
Los Alamos

PANEL DISCUSSION

11:30AM

LUNCH – WELCOME – INTRODUCTIONS – KEYNOTES

Bob Catell (Chair of Advanced Energy Center, NY Smart Grid Consortium), Dr. Samuel Stanley (Stony Brook University), Tom Congdon (Deputy Secretary for Energy, New York State), Kevin Law (LIPA), Senator LaValle, Dr. John Kelly (IBM), Dr. Arun Majumdar (D.O.E. Director ARPA E)

SESSION II
2:30PM - 3:45PM

ENERGY POLICY II

CHAIRPERSON
Rana Mukerji, NYISO
*Regional Markets &
Planning For NY*

Zywia Wojnar,
Pace University
*Develop Renewable Fuels
Roadmap & Biomass
Feedstock Supply NY*

Patrick Foye, Rivkin-Radler
*Financing Clean
Energy-Pace Bonds*

Dr. Guodong Sun,
Stony Brook University
*Engaging China – Will G-2
& CO-Benefit Work*

Dr. William Horak,
Brookhaven Nat'l Lab
*Energy-Water Nexus: NY City
Pilot Study*

BIO-ENERGY SCIENCE & TECHNOLOGY II

CHAIRPERSON
Dr. Devinder Mahajan,
Brookhaven Nat'l Lab

Dr. Christopher Marshall,
Argonne Nat'l Lab
*Atom Efficient Chemical
Transformations*

Dr. Steven Sanborn,
GE Global
*Biofuels & Fuels Flexible
Gasification*

**Dr. Ponisseril
Somasundaran,**
Columbia University
*Novel Synergistic
Biosurfactant Systems
For Greener Biofuels*

Dr. Steven Peretti,
NC State University
*Biochemicals Technologies
For Biofuel Production*

SMART NETWORKS II CYBERSECURITY

CHAIRPERSON
**Dr. James Johnson, U.S.
Dept. of Homeland
Security**
D.H.S. R&D In Cyber Security

John Cogliandro,
Raytheon
*Energy Infrastructure Security
Threats & Responses*

Ernest Wohnig, Booz Allen
*Smart Grid Security –
Build-In Now*

Sam Brattini, KEMA
*NERC Reliability Standards For
Critical Cyber Assets*

Dr. Robert Johnson,
Stony Brook University
Pre Patched Software

INNOVATIVE UTILITY SOLUTIONS IN A REGULATED ENVIRONMENT

CHAIRPERSON
Dan Desanti,
National Grid
David Wagner,
Atlantic Hydrogen
Carbon Capture For Natural Gas

**Ian Welch &
Chris Cavanaugh,**
National Grid
*Utility Role In Development Of
Advanced Energy Technology*

Tony Shay, Petra Solar
*Monetizing Unrealized Asset
Value Through Pole Mounted PV*

Charlie Anderson,
Air Liquide
*Air Liquid Simplified Biogas
To Pipeline*

DEPARTMENT OF ENERGY SHOWCASE I SCIENCE & TECHNOLOGY R & D

CHAIRPERSON
Dr. Sam Aronson,
Brookhaven Nat'l Lab

Dr. Patricia Dehmer,
Office of Science

Dr. Linda Horton,
BES Advanced Energy
*Basic Science For
Advanced Energy*

Dr. Anna Palmisano,
BER Climate Modeling
*Bioenergy & Climate Research
In DOE Office of Science*

CONFERENCE AGENDA

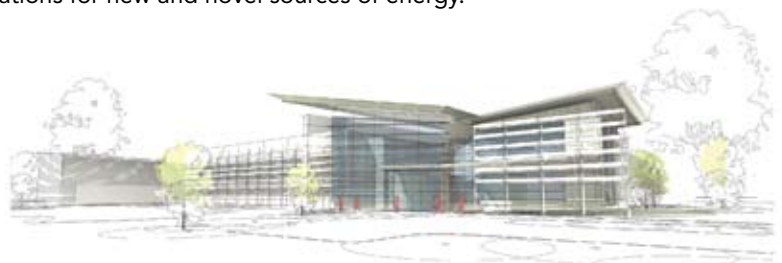
WEDNESDAY, NOVEMBER 18 *(continued)*

30 MINUTE BREAK

| | | | | | |
|--|--|--|---|--|---|
| <p>SESSION II 4:15PM - 5:30PM</p> | <p>TRACK A</p> <p>TECHNOLOGICAL OPTIONS FOR POLICYMAKERS</p> <p>CHAIRPERSON Paul DeCotis, LIPA National Academy of Science</p> <p>Lawrence Papay, PQR</p> <p>Dr. Lester R. Lave, Carnegie-Mellon</p> <p>Robert Fri, Resources for the Future</p> <p>PANEL DISCUSSION</p> | <p>TRACK B</p> <p>BIO-ENERGY ECONOMICS</p> <p>CHAIRPERSON Dr. Miriam Rafailovich, Stony Brook University</p> <p>Rafael Espinoza, Emerging Fuels Technology</p> <p><i>Future Role & Characteristics Of Fischer-Topsch Technology</i></p> <p>Stephen Eber, National Grid</p> <p>Robert Wilson, National Grid</p> <p><i>Use of Biofuels For Steam At Brookhaven Nat'l Lab</i></p> <p>Dr. Douglas Goodale, Cobleskill</p> <p><i>The Techno-Economics Of Rotary Kilm Gasification</i></p> <p>Dr. C.R. Krishna, Brookhaven Nat'l Lab</p> <p><i>Biofuels Applications & Synthesis Research at Brookhaven Nat'l Lab</i></p> | <p>TRACK C</p> <p>SMART NETWORKS III CYBERSECURITY</p> <p>CHAIRPERSON Dr. James Johnson, U.S. Dept. of Homeland Security</p> <p>Dr. Gerry Metzler, IBM</p> <p>Mark Winther, IDC</p> <p>John Cogliandro, Raytheon</p> <p>Dr. Jim Smith, Los Alamos</p> <p>PANEL DISCUSSION</p> | <p>TRACK D</p> <p>WIND POWER ADVANCES</p> <p>CHAIRPERSON Nicholas Miller, GE</p> <p><i>Grid Friendly Wind Plant Controls</i></p> <p>Trevor Atkinson, Northern Power</p> <p><i>Direct Drive Technology For Community/Utility Scale Windmills</i></p> <p>Chris Wissemann, Deep Water Wind</p> <p>Peter Mandelstam, Blue Water</p> <p><i>Offshore Wind Power Opportunities & Challenges in US</i></p> <p>Bob Schubert, Siemens</p> <p><i>Challenges & Rewards Of Offshore Wind</i></p> | <p>TRACK E</p> <p>DEPARTMENT OF ENERGY SHOWCASE II</p> <p>CHAIRPERSON Dr. Sam Aronson, Brookhaven Nat'l Lab</p> <p>Dr. Joanne Milliken, Office of Energy Efficiency & Renewable Energy (EERE)</p> <p>Dr. Joseph Paladino, Office of Electricity (OE)</p> |
| <p>5:30PM</p> | <p>BUFFET – RECEPTION – EXHIBITS – POSTER SESSIONS</p> | | | | |

AERTC MISSION STATEMENT

The **Advanced Energy Center (AERTC)** at Stony Brook University is a true partnership of Academic institutions, Research institutions, Energy providers and Industrial Corporations. Its mission is innovative energy research, education and technology deployment with a focus on efficiency, conservation, renewable energy and nanotechnology applications for new and novel sources of energy.



CONFERENCE AGENDA

THURSDAY, NOVEMBER 19

7:45AM

BREAKFAST & KEYNOTE SPEAKERS

Jacob Lamm (CA), Ed Reinfurt (NYSTAR), Richard Kessel (NYPA)

| SESSION III | TRACK A | TRACK B | TRACK C | TRACK D | TRACK E |
|------------------|---|--|---|---|---|
| 9:00AM - 10:15AM | <p>ENERGY SECTOR FINANCE I</p> <p>CHAIRPERSON Tim Chin, BNP Paribas <i>Project Financing In Today's Market</i></p> <p>Steven Levine, ENCAP <i>Solar Generation Projects In The US-Market Drivers</i></p> <p>Dr. Samuel Bernstein, B.E. LLC <i>Views From Venture Capital Investors</i></p> <p>Ebsen Pedersen, Pattern Energy <i>Current Trends In Renewable Energy Finance</i></p> <p>Jeremiah Yu, UBS <i>Renewable Energy Project Finance</i></p> | <p>SOLAR I UTILITY SCALE SOLAR</p> <p>CHAIRPERSON Marjaneh Issapour, SUNY Farmingdale</p> <p>Todd Milkos, Advanced Energy Industries <i>Sensitivity Of PV Design On Levelized Cost Of Energy</i></p> <p>Scott Abrams, Omnicon Group <i>Achieving High Reliability Of Complex Advanced Energy Systems</i></p> <p>Michael Behnke, BEW Engineering <i>Impact Of Grid Codes On Large Scale Photovoltaic Power Plant Development</i></p> <p>Eric Daniels, BP Solar <i>Challenges & Opportunities For Solar Technology</i></p> | <p>SMART INFRASTRUCTURE I</p> <p>CHAIRPERSON Rich Lechner, IBM</p> <p>Eric Jacobson, Quadlogic Mitch Stein, Quadlogic <i>Advanced Metering with Power Line Communication</i></p> <p>Chris Dittmer, Tivoli Energy <i>Lighting Energy Consumption-Visibility Is Key</i></p> <p>Paul Rode, Johnson Controls <i>Smarter Cities & Transportation</i></p> <p>Dr. M. Safiuddin, University of Buffalo <i>Artificial Neural Networks For Smart Grid</i></p> | <p>HYDRO POWER</p> <p>CHAIRPERSON Peter Ludewig, NYPA <i>Hydro Power At The New York Power Authority</i></p> <p>Ron Smith, Verdant Power <i>New York's Leadership In Emerging Marine Renewable Energy Industry</i></p> <p>Pumped Hydro</p> <p>Dr. Thomas Butcher, Brookhaven Nat'l Lab <i>Development Of Hydrokinetic Power For NYS</i></p> <p>Gerald Lynch, Sigma Design <i>Alternative Hydrokinetic Programs Challenges & Lessons Learned</i></p> | <p>LOW CARBON SOCIETY</p> <p>CHAIRPERSON Dr. Nay Htun, Stony Brook University <i>Overview Of Pathways To A Low Carbon Society</i></p> <p>Dr. Junichi Fujino, Nat'l Institute Env (Japan) <i>Japan Roadmaps To Low Carbon Society By Backcasting</i></p> <p>Dr. Yannick Glenmarec, United Nations <i>Financing The Transition To Low Carbon Society</i></p> <p>Dr. Peter Pearson, Imperial College (UK) <i>Past & Prospective UK Energy Transitions</i></p> <p>Frank Dalene, Telemark <i>Low Carbon Products – An Indexing Mechanism</i></p> <p>PANEL DISCUSSION</p> |

30 MINUTE BREAK

| | | | | | |
|----------------|---|---|--|--|--|
| 10:45AM - 12PM | <p>ENERGY SECTOR FINANCE II</p> <p>CHAIRPERSON Steve Taub, GE Finance <i>Financing Utility Scale Renewables</i></p> <p>Andy Dvoracek, Element Markets <i>Greenhouse Gas Compliance: A Moving Target</i></p> <p>Larry Siegel, Tobay Capital <i>Financing Green Energy Projects for Corporations & Municipalities</i></p> <p>David Koegel, D.O.E. <i>DOE And The American Recovery & Reinvestment Act</i></p> <p>Michael Faltischek, Rushin Moscou Faltischek <i>Early Stage Capital Investing (Seed or Angel)</i></p> | <p>SOLAR II UTILITY SCALE SOLAR</p> <p>CHAIRPERSON Dr. Harry Davitian, Entek Power <i>Developers Perspective On Large Scale Solar Power</i></p> <p>Christopher Dymond, Enxco <i>Megawatt PV; Rooftop & Ground Mount Challenges</i></p> <p>Dr. Supratik Guha, IBM Research <i>Photovoltaics Research Concentrator To Thin Films & Nanostructures</i></p> <p>Kevin Bate, RMT <i>Utility Scale Solar Project Development & Construction</i></p> <p>Marco Garcia, Suntech <i>Technical Challenges Of Utility Scale Solar PV Projects</i></p> | <p>SMART INFRASTRUCTURE II</p> <p>CHAIRPERSON Aubrey Braz, ConED</p> <p>Dr. John Grosspietsch, Motorola <i>Wireless Communications For The Smart Grid</i></p> <p>Chris Davis, Schneider Electric Jerry Jackson, Autodesk Florence Hudson, IBM <i>Optimizing The Smart Infrastructure Lifecycle</i></p> | <p>ADVANCED LIGHTING RESEARCH</p> <p>CHAIRPERSON Dr. Sayten Mukherjee, Philips Research <i>Advanced Integrated Lighting Controls For High Efficiency Green Buildings</i></p> <p>Dennis Bradley, GE <i>3rd Revolution Of The Lighting Industry</i></p> <p>Dr. John Wen, Rensselaer Polytechnic Institute <i>Engineering Light For Brighter Sustainable Future</i></p> <p>Dr. Chunlei Guo, University of Rochester <i>Brighter Light Sources From Dark Matter</i></p> <p>Kevin Dowling, Philips Lighting <i>LED Lighting Control Systems Overview</i></p> | <p>ENERGY EFFICIENCY & GREENHOUSE GAS REDUCTION</p> <p>CHAIRPERSON John Caroselli, National Grid <i>Energy Efficiency & Greenhouse Gas Reduction</i></p> <p>Rebecca Wingenroth, EPRI <i>Energy Efficiency in Carbon Constrained World</i></p> <p>Dr. Saul Keslowitz, Intra Tech <i>Mobile Electric Truck Refrigeration Units</i></p> <p>Diane Blankenhorn & Sandy Taft, National Grid <i>Greenhouse Gas Emissions</i></p> <p>Rich DeFay, Cooper Development Association <i>Copper Rotor Motor – Energy Efficient Motors</i></p> |
|----------------|---|---|--|--|--|

25 MINUTE BREAK

CONFERENCE AGENDA

THURSDAY, NOVEMBER 19 (continued)

12:25AM

LUNCH – INTRODUCTIONS – KEYNOTES

Bob Catell (Chair of Advanced Energy Center, NY Smart Grid Consortium),
Dr. John Marburger (former Science Advisor to the President, Scott Pugh (Department of Homeland Security))

20 MINUTE BREAK

SESSION IV
2:15PM - 3:30PM

TRACK A

BATTERY FUEL CELLS & ENERGY STORAGE I

CHAIRPERSON

Dr. Mark Mathias, GM

The Challenges Of Predicting Future Of Automobile Electrification

Jason Doling, NYSERDA

New York Battery & Energy Storage Technology Consortium

Dr. Hazem Tawfik, SUNY Farmingdale

Research & Development Of Direct Methanol Fuel Cells

Paul Mutolo, Cornell University

Forwarding Fuel Cell Technology Through Bottom-Up Design Of Materials

Charlie Vartanian, A123

Nanophosphate TM Batteries: Electric Power Grids

TRACK B

SOLAR III UTILITY SCALE SOLAR

CHAIRPERSON Guy Slicker, NYPA

NYPA Solar Initiatives

Dr. Steven Hummel, PV Powered

Challenges In Development Of Utility Scale Solar Power Inverters

Tassos Golnas, Sunedison

Uptime Analysis For Fleet Of 240 Distributed Generation PV Systems

Ron Corio, Array Technologies

Tracking PV Modules For Utility Scale Power Plants Maximizing ROI

Jay Gromek, Infinia

Dish-Stirling – A New Era

TRACK C

SMART INFRASTRUCTURE III

CHAIRPERSON

Anthony DiMaso, Verizon

Perspectives On Smart Infrastructures

Steven DeCarlo, NYPA

Dynamic Thermal Rating For Overhead Lines

Dr. Reza Ghafirian, ConED

Smart Infrastructure Over Underground Distribution

Larry Durante, National Grid

Dr. Prasanta Ghosh, Syracuse University Smart Grid "End To End" Development Proof Of Content

Dr. Francisco de Leon, NYU-Poly

Active Damping Of Power System Oscillations

TRACK D

INTELLIGENT & ADVANCED TRANSPORT

CHAIRPERSON Thomas Lamb, NYC Transit

Ideas To Innovation At NYC Transit

Namir Habboosh, Raytheon

Maglev Feasibility Study

Rizwan Khaliq, IBM

Smarter Cities & Transportation

Joseph Ambrosio, EMD

Electric & Hybrid Electric Propulsion For Moving People & Goods

Walter Kulyk, Federal Transit Authority

The FTA's Energy Related Research Programs

Dr. Frank Zeman, NY Institute of Technology

Integrating Solar PV Power – Transportation Sector

TRACK E

GREEN BUILDING TECHNOLOGY MATERIALS & PROCESS

CHAIRPERSON

Colby Swanson, BASF
Improving performance Of Existing Commercial Buildings The Chemistry of Sustainable Retrofits

Dirk von Below, Flad Architects

Reducing Embodied Carbon In Construction Materials

Giovanni Petrecca, U of Pavia, Italy
Energy Efficient Technologies For Industries & Buildings: State Of The Art In Europe

Dr. Alexander Orlov, Stony Brook U
Solar Energy For Environmental & Energy Application: Utilizing Novel Catalysts & Light

Doug Reid-Greene, BASF
Importance Of Smart Development In An Urbanization World

15 MINUTE BREAK

3:45AM - 5PM

BATTERY FUEL CELLS & ENERGY STORAGE II

CHAIRPERSON

Grigorii Soloveichik, GE EFRC

GE Energy Storage Vision For Mobile & Stationary Apps

Dr. Clare Grey, Stony Brook University EFRC

Energy Storage Research: Diagnostics & Theoretical Approaches To Optimize Lithium Ion Battery

Winfried Wilcke, IBM Research

Overview Of Battery 500 Lithium/Air Project

David Mrocza, Dayton T. Brown

Real World Advanced Energy Storage; Beyond Chemistry

Michael Tentnowski, IOXUS

Ultracapacitors Make Battery Modules Greener

SOLAR IV MATERIALS & TECHNOLOGY

CHAIRPERSON

Dr. John Elter, Albany Nanotech

Materials & Process For Low Cost Solar Cells

Dr. Joseph Laia, Miasole

Thin Film Solar Can Cigs Be Done?

Dr. Stan Steingart, CUNY
Towards A Renewable NYC Solar Electric Thermal Hybrid Systems

Dr. Michael Gray, CVD
APCVD For TCO Film-Paradigm Shift For End Users

Dr. Charles Fortmann, Stony Brook University
Photonic-Engineered Solar Cells

Dr. Mike Dudley, Stony Brook University

Development Of Advanced Materials For Current & Future Energy Challenges

SMART NETWORKS INTEROPERABILITY

CHAIRPERSON

Robert Curry, NYS-PSC

Hao Yang, IBM

Michael Carlson, Gridpoint

Ralph Masiello, KEMA

Tim Schmidt, Verizon
Interoperability: Lessons From Telecommunications

PANEL DISCUSSION

GREEN DATA CENTERS

CHAIRPERSON

Dr. Roger Schmidt, IBM

Landscape Of Mission Critical Facilities

Dr. H. Ezzat Khalifa, Syracuse University

Dynamic Modeling – Data Center Cooling Infrastructure

Dave Blair, BHP

TriGen As A Green Data Center Strategy

Priya Sehgal, Stony Brook University

Improving Energy & Performance For Server Workloads

Dhesikan

Ananchapermul, CA
Energy In Data Centers & Facilities: Increase Efficiency & Enhance Availability

INNOVATION & COMMERCIALIZATION OF ENERGY

CHAIRPERSON

Dr. Karen Pavese, New York Academy of Science

Florence Hudson, IBM
Building A Smarter Planet

Dr. William Bonvillian, MIT
Transforming Energy Technology – National Policy Issues

Carlos Martinez-Vela, John Adams Innovation Institute

Emergence Of Solar PV Industry In Massachusetts Lessons From History

Rene Baston, NY Academy of Sciences

PANEL DISCUSSION

KEYNOTE SPEAKERS & SESSION CHAIRPERSONS



DR. SAMUEL H. ARONSON
Brookhaven National Laboratory

Sam Aronson earned an A.B. in physics from Columbia University in 1964, and a Ph.D. in physics from Princeton University in 1968. From 1968 to 1972, he worked at the University of Chicago's Enrico Fermi Institute for Nuclear Studies as a research associate. He then moved to the University of Wisconsin until 1977. Aronson joined Brookhaven Lab's Accelerator Department in 1978, and was named physicist in 1979. He moved to the Physics Department in 1982, and was appointed deputy chair in 1988. In 1991, Aronson became head of the PHENIX detector project during construction of the Lab's Relativistic Heavy Ion Collider, a challenge he successfully completed before he became chair of Physics in 2001. He became Associate Laboratory Director for Nuclear and Particle Physics in 2005 and Laboratory Director in 2006. Aronson is a Fellow of the American Physical Society and of the American Association for the Advancement of Science.



MR. DAVID BRANCACCIO
Host and Senior Editor for NOW on PBS

Since joining NOW in 2003, award-winning journalist David Brancaccio has delivered hard-hitting reports on government secrecy, the future of America's public schools, the plight of America's workers, the influence of talk radio on public policy, and the future of the environment, from mercury in our lakes to natural gas drilling in the Rockies. His interviews with leading figures like philanthropist George Soros, author Azar Nafisi, philosopher Bernard Henri-Levy, civil rights attorney Constance Rice, and cultural critic Michael Eric Dyson have provided viewers with unique perspectives.

"We're helping people navigate the sea of sound bites and shout fests by engaging them with thoughtful discourse about the issues important to regular Americans," says Brancaccio.

A broadcaster for 28 years, Brancaccio spent 13 years at Marketplace, which tripled its audience and received a duPont-Columbia University Award (1998) and the George Foster Peabody Award (2001) during his tenure. Before becoming host, Brancaccio served in London as the European editor of the program, covering the continent's move toward economic and political integration. During that time, he also covered diplomatic stories from Europe for the radio service of The Christian Science Monitor.

Brancaccio has contributed to CNN, CNBC, and Wall Street Week with Fortune on PBS. His print work has appeared in such periodicals as The Wall Street Journal, Psychology Today, and Journalism and Mass Communication Educator.

He is author of the book *Squandering Aimlessly*, (Simon & Schuster, 2000 and Touchstone, 2001) an account of his pilgrimage to talk with Americans about wealth and values. The American Journalism Review called the work "a stellar model for consumer reporting... Brancaccio's approach and attitude are irreverently nontraditional." The Cleveland Plain Dealer said, "Brancaccio brings the final erudition of a variety of sources together with his own wit, candor, and storytelling skill."

MR. AUBREY BRAZ



Aubrey Braz is vice president of Staten Island and Electric Services. He is responsible for all electric operations serving Staten Island's 165,000 customers. In addition to his responsibility for all electric operations in the borough, Mr. Braz also oversees the company's transformer shop, electric meter operations as well as its 3G System of the Future and Smart Grid program.

Mr. Braz is a graduate of Columbia University with a bachelor's degree in electrical engineering and earned a master's degree in electrical engineering from Polytechnic University. Mr. Braz is also a licensed professional engineer in New York State. He joined the company in 1982 as a management intern and served in a variety of positions of increasing responsibility throughout his career including, Transmission Engineering, R&D, Electric Operations, Substation Operations and Gas Operations.

KEYNOTE SPEAKERS & SESSION CHAIRPERSONS



MR. GARY BROWN
Chairman
New York State Public Service Commission

Garry A. Brown was confirmed as a Commissioner of the New York State Public Service Commission on December 13, 2007 and was named Chairman on January 2, 2008. His term runs through February 1, 2015.

Mr. Brown has nearly 30 years of experience in the public, private and not-for-profit energy and electricity sectors, including previously holding a position as Senior Policy Analyst for the former New York State Energy Office, which had been charged with developing a sustainable and sound energy policy and promoting energy efficiency, while protecting the environment and fostering economic development.

As PSC chairman, Mr. Brown sits on the State Energy Planning Board. He is also chairman of the New York State Board on Electric Generation Siting and the Environment. He sits on the board of the New York State Energy Research and Development Authority, the New York State Environmental Board, and the board of the Regional Greenhouse Gas Initiative Inc., and the Consumer Protection Board. Mr. Brown is a member of the New York State Council for Universal Broadband, the Governor's Economic Security Cabinet, and the Governor's Climate Action Council.

Mr. Brown sits on the board of the National Association of Regulatory Commissioners (NARUC) which oversees NARUC's general and financial functions and approves policy resolutions. He is chair of NARUC's Committee on Electricity, which develops and advances policies that promote reliable, adequate, and affordable supply of electricity. Through strong collaboration with the Federal Energy Regulatory Commission and related Federal agencies, the Electricity Committee also seeks ways to improve the quality and effectiveness of regulation through education, cooperation, and exchange of information.

Mr. Brown serves on the NARUC-Federal Energy Regulatory Commission's Smart Grid Collaborative, which serves as an important forum for discussing technological and other issues to facilitate the transition to a smart electric grid. He is a member of the Advisory Council to the Board of Directors of the Electric Power Research Institute (EPRI). The Edison Foundation Board of Directors created the Institute for Energy Efficiency (IEE), an advisory committee, in which Mr. Brown is also a member.

Mr. Brown received his B.A. from State University College at Plattsburgh and his Masters of Public Administration from the Rockefeller School of Public Affairs at the State University of New York at Albany.

Mr. Brown was born and raised in Williamsville, outside of Buffalo. He and his wife, Linda, reside in Averill Park, and are the proud parents of a son and daughter.



MR. JOHN CAROSELLI
Executive Vice President
National Grid

John A. Caroselli is Executive Vice President at National Grid an international energy company. He is the lead executive for New York State and also leads Customer Product & Service functions.

John was Executive Vice President, and Chief Strategy Officer, KeySpan Corp. He was responsible for Strategic Planning, Corporate Development, Brand Management, Marketing, Sales & Customer Service.

Mr. Caroselli came to KeySpan in 2001 from AXA Financial where he was Executive Vice President of Corporate Development. Prior to that, he held senior officer positions with Chase Manhattan, Chemical Bank and Manufacturers Hanover Trust. He has extensive experience in strategy, merger integration, and major change programs.

Mr. Caroselli holds a Bachelor of Science degree in Psychology from Brooklyn College and a Master of Arts degree in organizational psychology from Fairleigh Dickinson University.

He serves on the Boards of the United Way of NYC, Downtown Brooklyn Partnership, New York State Smart Grid Consortium and on the Asia Society Business Council.

He lives in New Jersey with his wife, Maureen. They have two children.

KEYNOTE SPEAKERS & SESSION CHAIRPERSONS



MR. BOB CATELL
Chairman
Advanced Energy Research and Technology Center (AERTC)

Robert B. Catell is the former Chairman, U.S., National Grid, and was, prior to its acquisition by National Grid, the Chairman and CEO of KeySpan Corporation since July 1998. He joined KeySpan's subsidiary, The Brooklyn Union Gas Company in 1958, and rose through their management becoming President and CEO in 1991. He was elected Chairman and Chief Executive Officer in 1996.

Mr. Catell currently serves on numerous Boards including Keyera Energy Management, Brooklyn Community Foundation, Colin Powell Center for Policy Studies, Feinstein Institute for Medical Research, Long Island Regional Planning Council, New York Academy of Science, New York City Police Foundation, New York State Energy Research and Development Authority, and Our Energy Foundation.

He is Chairman of Alberta Northeast Gas Ltd., the Advanced Energy Research and Technology Center (AERTC), Cristo Rey Network's Lourdes Academy, Futures in Education, NYS Foundation for Science, Technology and Innovation (NYSTAR), and the New York State Smart Grid Consortium; and he co-chairs the Downtown Brooklyn Partnership.



MR. TOM CONGDON

Tom Congdon is the Deputy Secretary for Energy in the administration of Governor David A. Paterson. Mr. Congdon is responsible for implementing the Governor's energy agenda, including the 45 by 15 initiative to meet 45 percent of the State's electricity needs through energy efficiency and renewable energy by 2015. He also coordinates the activities and initiatives of the New York Power Authority, the Long Island Power Authority, the New York State Energy Research and Development Authority, and the Public Service Commission. As the Chairman of the New York State Energy Planning Board, Mr. Congdon is overseeing the development of the 2009 State Energy Plan, scheduled for release in December 2009. Mr. Congdon also serves on the Board of the New York Smart Grid Consortium, which is coordinating public and private investment in smart grid deployment throughout New York State.

Previously, Mr. Congdon served as a policy analyst in the New York State Attorney General's Environmental Protection Bureau. Prior to joining the Attorney General's Office, he was the policy director at the New York League of Conservation Voters.

Mr. Congdon received his Bachelor of Science in Geology from the University at Albany and his Master of Public Administration from Baruch College.



DR. NAY HTUN

Nay Htun graduated from Imperial College London with a PhD degree in Chemical Engineering and is Research Professor, Southampton Campus and Dept of Technology and Society, Stony Brook.

He is a Fellow and Visiting Professor of International Environmental Policies, Imperial College London; Visiting Professor and Senior Advisor, International Institute for Industrial Environmental Economics, Lund University, Sweden, Visiting Professor and Member of the International Advisory Board, Chulabhorn Research Institute, Bangkok, Thailand; Honorary Professor, Tongji University, Shanghai, China.

He served in the United Nations for over 25 years where he held the rank of UN Assistant Secretary General at the United Nations Development Programme (UNDP), and the United Nations Environment Programme (UNEP).

He was Programme Director coordinating the drafting of Agenda 21, and helped organize the 1992 Rio Earth Summit. At the Secretariat, he was also the focal point for business and industry, and helped establish the Business Council for Sustainable Development, Geneva.

Before joining the UN he was Department Manager with Exxon Thailand.

Nay Htun is a Board Member of a number of not for profit research organizations, including the International Research Institute for Climate and Society, Columbia University, New York and the Institute for Global Environmental Strategies, Hayama, Japan.

KEYNOTE SPEAKERS & SESSION CHAIRPERSONS



DR. JOHN KELLY

Dr. John E. Kelly III is IBM senior vice president and director of Research. In this job he directs the worldwide operations of IBM Research, with about 3,000 technical employees at eight laboratories in six countries around the world, and helps guide IBM's overall technical strategy.

Dr. Kelly's top priority as head of IBM Research is to stimulate innovation in key areas and quickly bring those innovations into the marketplace to sustain and grow IBM's existing business, and to create the new businesses of IBM's future. IBM applies these innovations to help our clients succeed.

Dr. Kelly also leads IBM's worldwide intellectual property business.

Prior to beginning his current assignment in July of 2007, Dr. Kelly was senior vice president of Technology and Intellectual Property, responsible for IBM's technical and innovation strategies.

In 2000, Dr. Kelly was group executive for IBM's Technology Group, where he was responsible for developing, manufacturing and marketing IBM's microelectronics technologies, products and services.

Dr. Kelly joined IBM in 1980. Between 1980 and 1990, he held numerous management and technical positions related to the development and manufacturing of IBM's advanced semiconductor technologies. In 1990, he was named director of IBM's Semiconductor Research and Development Center. In 1994, he was appointed vice president of business process reengineering for the Microelectronics Division.

In 1995, he was named vice president of systems, technology and science for the IBM Research Division. In this role, Dr. Kelly was responsible for the company's most advanced research activities. The following year, he was named vice president of strategy, technology and operations for the Microelectronics Division. In 1997, he was appointed vice president of server development (from work stations to supercomputers) for IBM. In January of 1999, he was appointed general manager of IBM's Microelectronics Division, a position he held until August 2000.

Dr. Kelly received a Bachelor of Science degree in physics from Union College in 1976. He received a Master of Science degree in physics from the Rensselaer Polytechnic Institute in 1978 and his Doctorate in materials engineering from RPI in 1980. In 2004, he received an Honorary Doctorate of Science from The Graduate School at Union College.

Dr. Kelly is on the Board of Governors of The IBM Academy of Technology; a board member and former chairman of the Semiconductor Industry Association; a Fellow of the Institute of Electrical and Electronics Engineers, and on The Board of Trustees of Union College.

MR. RICHARD KESSEL Chief Executive Officer, New York Power Authority

Richard M. Kessel took office as president and chief executive officer of the New York Power Authority, the nation's largest state-owned electric utility, on October 14, 2008.

Mr. Kessel, an expert on New York energy issues, served as chief executive officer of the Long Island Power Authority (LIPA) from 1997 to 2006, and chairman of the LIPA Board of Trustees from 1989 to 1995. Mr. Kessel was responsible for several notable achievements during his tenure at LIPA.

Mr. Kessel successfully negotiated LIPA's acquisition of Long Island Lighting Company, which contributed to an immediate reduction in utility rates on Long Island. Mr. Kessel also improved the safety of the State's power transmission infrastructure when he led the decommissioning of the Shoreham Nuclear Power Plant, the first closing of a commercial nuclear facility in the United States. Mr. Kessel received regional and national recognition for LIPA's commitment to the next generation of clean energy technologies such as fuel cells and wind power.

Mr. Kessel began his career in public service as Executive Director of the New York State Consumer Protection Board from 1983 to 1995, where he successfully negotiated rate freeze agreements with Consolidated Edison, Niagara Mohawk, and Orange and Rockland Utilities. Mr. Kessel was a Professor of Consumer Studies at Five Towns College from 1995 to 1997.

He served on the Board of Trustees for Nassau County Community College from 1981 to 2000, and was appointed to serve on the Nassau County Interim Finance Authority from 2000 until 2007.

Mr. Kessel received a bachelor's degree from New York University and his master's degree from Columbia University.



KEYNOTE SPEAKERS & SESSION CHAIRPERSONS



MR. JACOB LAMM
Executive Vice President
Strategy and Corporate Development

Jacob Lamm is executive vice president of Strategy and Corporate Development at CA. In this role, he is responsible for coordinating the company's overall business strategy, as well as developing strategy for the selection, prioritization, and execution of acquisitions. In addition, Jacob leads CA's Business Incubation business units, which are charged with exploring opportunities to build businesses in new markets. He is also a member of CA's Executive Leadership Team, which defines and ensures execution of the Company's business and technical strategies.

Jacob has held various management positions since joining CA in 1998. Prior to assuming his current role he served as executive vice president of CA's Governance Group, a collection of business units focused on delivering solutions that help organizations effectively govern all areas of operations. Earlier, he was executive vice president and general manager of CA's Business Service Optimization business unit.

Jacob has more than 20 years of industry experience covering a wide range of technologies and business applications.

He joined CA with its acquisition of Professional Help Desk (PHD), where he was co-founder and served as executive vice president and chief technology officer. Under his leadership, PHD evolved into one of the strongest products on the market and gained industry recognition as having the most visionary service management solution.

Prior to founding PHD, Jacob served as a senior manager at Con Edison in New York, where he was responsible for integrating new technologies into the company's business systems, including wireless communications, data warehousing, imaging, and Internet solutions. A graduate of Brooklyn College, Jacob earned a bachelor's degree in computer information science.



SEN. KENNETH P. LAVALLE

Senator Kenneth P. LaValle, (R-C-I, Port Jefferson) was first elected to the Senate in 1976. He chaired the Senate Committee on Higher Education for 30 years and played a key role in shaping New York State's higher education policy. His work with education leaders at the State University of New York and the independent sector has earned him the respect of the academic community.

In 2007, the Governor appointed Senator LaValle to serve as a member of the New York State Commission on Higher Education to help identify ways of improving the quality of higher education in New York State. He also served on the National Council of State Legislatures' Blue Ribbon Commission on Higher Education, which was created to bring awareness among State Legislatures of their role in providing accessible and affordable public higher education.

Senator LaValle's achievements in education and higher education are matched by a distinguished record in health care, the environment, and the development of the STAR program.

In addition to his standing committee assignments, Senator LaValle is Chairman of the Senate Minority Conference.

Standing Committee Assignments: Higher Education (Ranking Member), Aging, Education, Finance, Insurance, Judiciary, Rules. Senator LaValle also serves as a member of the New York State Commission on National and Community Service.



MR. KEVIN LAW
President and CEO of the Long Island Power Authority

Mr. Law was appointed President and CEO of the Long Island Power Authority (LIPA), the 2nd largest public utility in the country with over 1.1 million customers and a \$4 Billion budget, by unanimous vote of the Authority's Board of Trustees on October 2, 2007. Prior to his approval as President and CEO, Mr. Law served as a LIPA Trustee and Chairman of its Board beginning in January 2007.

Mr. Law has shown leadership in the areas of energy efficiency and renewable energy by launching Efficiency Long Island, the largest energy efficiency program for any public utility in the country, by procuring a 50MW solar energy project which will be the largest solar project in New York State, by introducing "smart meters" on Long Island and by exploring an offshore wind farm with Con Edison and other state agencies which could be the largest offshore wind project in the country.

KEYNOTE SPEAKERS & SESSION CHAIRPERSONS

Previously, Mr. Law served as Chief Deputy County Executive and General Counsel for Suffolk County, New York, which is the ninth largest county in the country with a population of 1.4 million people. In this capacity, Mr. Law had direct oversight of all county departments consisting of over 12,000 employees and a \$2.7 billion budget.

Prior to his tenure in Suffolk County, Mr. Law was the Managing Partner of the Long Island office of Nixon Peabody LLP, a national law firm with over eight hundred attorneys. Mr. Law focused his practice in matters relating to all facets of energy, (where he worked on many of the largest energy projects on Long Island), environmental, land-use, real estate, municipal litigation, and representation of clients before federal, state and local agencies.

Before joining Nixon Peabody, Mr. Law was the Director of Real Estate for the Suffolk County Department of Law, where he administered the Pine Barrens, Open Space and Farmland Preservation and Acquisition Programs. Earlier in his career, Mr. Law was the Assistant Suffolk County Executive for Planning, Housing and Environmental Affairs, where he coordinated the County Executive's environmental initiatives and affordable housing programs. Prior to his initial tenure with Suffolk County, Mr. Law worked for the New York State Assembly.

Mr. Law received an Associate of Arts from Suffolk County Community College; a Bachelor of Arts from SUNY, Stony Brook; a Master of Science from the Graduate School of Urban Affairs and Planning at CUNY, Hunter College; and his Juris Doctor from St. John's University School of Law.

Mr. Law sits on Governor David A. Paterson's Renewable Energy Task Force, his Climate Action Council and on his New York State Economic Recovery and Reinvestment Cabinet formed to manage the development of State and local infrastructure projects financed through the federal American Recovery and Reinvestment Act. He is also a Steering Committee member of the Alliance to Save Energy's Clean and Efficient Energy Program (CEEP) for public power.

Mr. Law was recently appointed by Governor Paterson as the new Chairman of the Stony Brook University Council which has oversight of the University; the crown jewel of the SUNY system.

Mr. Law also serves on the boards of the Long Island Housing Partnership, the Advanced Energy Research Technology Center and the New York State Smart Grid Consortium. Previously, he served as a Trustee to the Long Island Chapter of the Nature Conservancy, as a Trustee to Suffolk County Community College, as a member of the Board of Ethics for the Town of Smithtown and on the Board of the Long Island Association.



DR. ARUN MAJUMDAR **Director, Advanced Research Projects Agency**

Arun Majumdar became the first Director of the Advanced Research Projects Agency – Energy (ARPA-E), the country's only agency devoted to transformational energy research and development, in October 2009.

Prior to joining ARPA-E, Majumdar was the Associate Laboratory Director for Energy and Environment at Lawrence Berkeley National Laboratory and a Professor of Mechanical Engineering and Materials Science and Engineering at the University of California, Berkeley. His highly distinguished research career includes the science and engineering of energy conversion, transport, and storage ranging from molecular and nanoscale level to large energy systems. In 2005, Majumdar was elected a member of the National Academy of Engineering for this pioneering work.

At Berkeley Labs and UC Berkeley, Majumdar helped shape several strategic initiatives in the areas of energy efficiency, renewable energy, and energy storage. He also testified before Congress on how to reduce energy consumption in buildings. Majumdar has also served on the advisory committee of the National Science Foundation's engineering directorate, was a member of the advisory council to the materials sciences and engineering division of the Department of Energy's Basic Energy Sciences, and was an advisor on nanotechnology to the President's Council of Advisors on Science and Technology.

Additionally, Majumdar - also an entrepreneur - has served as an advisor to startup companies and venture capital firms in the Silicon Valley.

He received his bachelor's degree in Mechanical Engineering at the Indian Institute of Technology, Bombay in 1985 and his Ph.D. from the University of California, Berkeley in 1989.

KEYNOTE SPEAKERS & SESSION CHAIRPERSONS



DR. JOHN MARBURGER, III
University Professor Stony Brook University

H. Marburger, III, University Professor of Physics and Electrical Engineering at Stony Brook University, was the university's third president from 1980 to 1994, and subsequently the Director of Brookhaven National Laboratory. He was Science Advisor to the President and Director of the White House Office of Science and Technology Policy during both terms of the George W. Bush Administration. As a professor and dean of the College of Letters, Arts and Sciences at the University of Southern California in the 1960's and 70's, Marburger co-founded USC's Center for Laser Studies and conducted research in laser physics and engineering. He earned an A.B. degree in physics from Princeton University, and a Ph.D. in applied physics from Stanford. In the 1980's Marburger chaired a review commission on New York State's Energy Office, and Governor Cuomo's fact-finding commission on the Shoreham Nuclear Power Facility, and continues to speak frequently on science policy.



MR. FRANK MURRAY, JR.
President and Chief Executive Officer of the
New York State Energy Research and Development Authority

Francis J. Murray, Jr. was appointed President and Chief Executive Officer of the New York State Energy Research and Development Authority (NYSERDA) on January 26, 2009.

Prior to his appointment, Mr. Murray served as Senior Advisor at the international environmental consulting firm Ecology and Environment, Inc., where he provided strategic policy and market development guidance on environmental and energy issues to a number of private sector and not-for-profit clients. Mr. Murray also represented the Pace Energy and Climate Center and the Natural Resources Defense Council in the New York Public Service Commission proceeding to establish an energy efficiency portfolio standard program.

From 1996 to 1997, Mr. Murray was policy advisor to the United States Secretary of Energy, assisting in the development of the Clinton Administration's national energy policy.

Mr. Murray served from 1992 to 1994 as the New York State Commissioner of Energy and Chairman of the NYSERDA Board of Directors, then a statutory function of the State Energy Commissioner. At that time, he also served as Chairman of the State Energy Planning Board, a multi-agency statutory board charged with the responsibility of developing a comprehensive, integrated energy plan for the State that integrated State energy, environmental and economic development policies.

In 1985, Mr. Murray was appointed Deputy Secretary to the Governor for Energy and the Environment, a position he held until 1992. He served from 1983 to 1985 as Assistant Secretary for Energy and the Environment in the administration of New York State Governor Mario M. Cuomo. He represented New York in numerous national and regional energy and environmental activities, including the Coalition of Northeastern Governors, the National Governors' Association, and the Council of Great Lakes Governors. Mr. Murray began his work on New York State energy issues as legislative counsel and then as an energy and environmental policy advisor to Governor Hugh Carey from 1977 to 1982. He began his career in public service as a legislative assistant to Congressman James V. Stanton (D-Ohio).

Mr. Murray received his Bachelor of Science in Foreign Service cum laude from the Edmund A. Walsh School of Foreign Service at Georgetown University, and his Juris Doctor from Georgetown University Law Center.



MR. SCOTT PUGH

Scott Pugh serves as Energy Security Liaison in the Office of Interagency Programs at the Department of Homeland Security's Science and Technology Directorate. He is a member of the Federal Smart Grid Task Force and recently served as Executive Secretary of a White House Task Force on Electric Grid Vulnerabilities. In July 2009, he coordinated a joint DHS-DOE-DOD-Industry wargame at National Defense University which simulated a coordinated terrorist attack on the US electric grid. Scott joined DHS in 2007 as Special Assistant to the Honorable Jay M. Cohen, Under Secretary of Homeland Security for Science and Technology.

Previously, Scott served as a member of the Defense Science Board Energy Strategy Task Force and as Military Principal at Rocky Mountain Institute working with Amory Lovins to implement the advanced energy initiatives described in the DOD-funded report "Winning the Oil Endgame". He is an advisory board member of the U.S. Association for the Study of Peak Oil and Gas. Scott retired from the Navy in 2005 as a Captain having served as Commanding Officer of a nuclear powered attack submarine and as Director of Mathematics and Science at the Naval Academy. He is a 1976 graduate of the Naval Academy

KEYNOTE SPEAKERS & SESSION CHAIRPERSONS



MR. ED REINFURT
Executive Director

Edward Reinfurt serves as Executive Director of the New York State Foundation for Science, Technology and Innovation.

Under Mr. Reinfurt's leadership, NYSTAR is helping to identify how New York's existing research assets can be leveraged to create greater opportunities for technology development throughout the State.

On February 10, 2009, Governor David A. Paterson announced Mr. Reinfurt's appointment to the New York State Economic Recovery and Reinvestment Cabinet. The cabinet was created to manage the development of State and local infrastructure projects financed through the federal American Recovery and Reinvestment Act. Currently, NYSTAR is involved in the administration of Governor Paterson's New Innovation Economy Matching Grants Program. Under this program New York is committing up to a 10% match in State funds for each ARRA awardee in strategic areas of innovation.

In May 2009, Mr. Reinfurt was appointed to the Task Force on Diversifying the New York State Economy through Industry-Higher Education Partnerships which will submit recommendations on accelerating business growth and commercialization of research technologies. In June 2009, Mr. Reinfurt was appointed by Governor David A. Paterson to the New York Small Business Task Force which will focus existing State resources and develop new strategies to promote the growth and development of small business enterprises in New York.

As executive director of NYSTAR, Mr. Reinfurt is a member of the Economic Development Subcabinet of Governor Paterson. He also serves as a member of the New York State Broadband and Deployment Council.

Prior to his appointment at NYSTAR, Mr. Reinfurt served as Vice President of the Business Council of New York State, Inc. The Business Council represented more than 3,000 member businesses, chambers of commerce and professional and trade associations.

Mr. Reinfurt is a graduate of the University at Albany of the State University of New York. He was nominated to serve as executive director by then Governor Spitzer on May 7, 2007 and was confirmed by the New York State Senate on October 22, 2007. Governor Paterson formally requested Mr. Reinfurt to continue to serve as Executive Director on April 22, 2008, a request Mr. Reinfurt gratefully accepted.



DR. YACOV SHAMASH
Vice President for Economic Development and
Dean, College of Engineering and Applied Sciences
Stony Brook University

Dr. Shamash is Vice President for Economic Development and the Dean of the College of Engineering and Applied Sciences at Stony Brook University. As Vice President, Dr. Shamash supervises the University's three incubators, two New York State Centers for Advanced Technology, the Center of Excellence in Wireless and Information Technology (CEWIT), the Advanced Energy Research and Technology Center, the Small Business Development Center, and the workforce development programs of the Center for Emerging Technologies. The College of Engineering and Applied Sciences has more than 1,700 undergraduate and 950 graduate students. During his tenure, College research expenditures have increased five fold to \$25M per year. In 1994 he helped establish the highly successful state-wide SPIR program (Strategic Partnership for Industrial Resurgence). During the past ten years, working through the SPIR program, the College has partnered with more than 395 companies to assist them with more than 2,127 projects.

Prior to joining SUNY Stony Brook in 1992, Dr. Shamash served as the Director of the School of Electrical Engineering and Computer Science at Washington State University and was responsible for the establishment of a National Science Foundation Industry/University Center for the Design of Analog/Digital Integrated Circuits.

He is a member of the Board of Directors of Keytronic Corp., American Medical Alert Corp., and Applied DNA, Inc. He is also a member of the Board of Directors for the New York State Office of Science, Technology and Academic Research (NYSTAR), the Foundation for Science, Technology and Innovation, the Long Island Software & Technology Network (LISTnet) and the Long Island Angel Network.

KEYNOTE SPEAKERS & SESSION CHAIRPERSONS

Dr. Shamash has also held faculty positions at Florida Atlantic University, the University of Pennsylvania and Tel Aviv University. He received his undergraduate and graduate degrees from Imperial College of Science and Technology in London, England. He has authored more than 130 publications and is a Fellow of the IEEE.



DR. SAMUEL STANLEY

On July 1, 2009 Samuel L. Stanley, Jr., M.D. became the fifth president of Stony Brook University. Stony Brook's reach extends from its 1,000-acre main campus on Long Island's North Shore - encompassing the main academic areas, an 8,300-seat stadium and sports complex, a performing arts center, Stony Brook University Medical Center, The Health Sciences Center, and The Long Island State Veterans Home - to Stony Brook Manhattan, the new Research and Development Park, three business incubators, and the new Stony Brook Southampton campus on Long Island's East End. As president of this world-class University, Dr. Stanley joins the leaders of a select group of prestigious academic institutions including, Cornell, Princeton, Stanford, the University of California-Berkeley, and the University of Chicago in co-managing and collaborating with a national laboratory.

A Seattle native, Dr. Stanley has a Bachelor of Arts degree in biological sciences (Phi Beta Kappa) from the University of Chicago and earned his medical degree from Harvard Medical School in 1980. He completed his resident-physician training at Massachusetts General Hospital, a teaching hospital of Harvard Medical School.

In 1983 Dr. Stanley began a fellowship in infectious diseases at Washington University School of Medicine. He rose through the ranks in the school's Department of Medicine to become a professor of medicine in 1999, and in 2004 was appointed a professor in the Department of Molecular Microbiology in recognition of the collaborative and interdepartmental nature of his research.

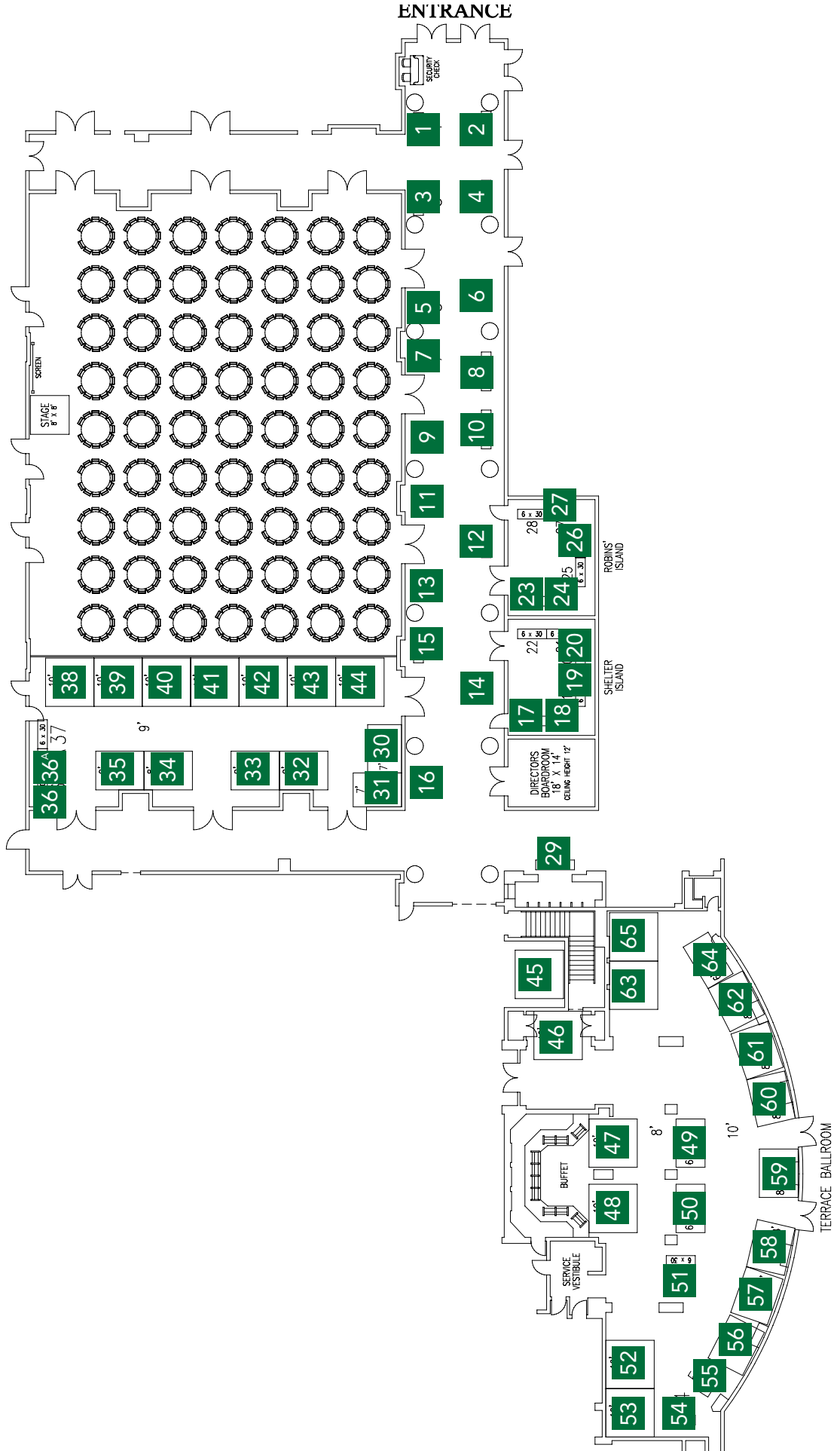
As Vice Chancellor for Research, Dr. Stanley was responsible for the university's research missions, overseeing an enterprise that generated more than \$500 million for sponsored research from a wide array of funding sources. As the university's institutional official responsible for all compliance programs, he oversaw the university community's adherence to guidelines governing laboratory animal care and research involving human volunteers.

His areas of oversight also included development of research policies, management of grants and contracts, the continuing education of faculty and staff regarding research regulations, issues related to conflict-of-interest and research integrity, and intellectual property and technology transfer.

Dr. Stanley, who has had long-running and substantial research support from the federal government's National Institutes of Health (NIH), is an expert in the biological mechanisms cells employ when responding to infectious agents such as parasites, bacteria, and viruses-a process commonly called the inflammatory response. Enhanced defense against infection was a key focus of his research. He also focused on specific genetic factors that might make serious side effects more common in some persons receiving vaccines.

Among the several research grants that Dr. Stanley led or contributed to, is the nearly \$37 million grant from the NIH to create the Midwest Regional Center of Excellence in Biodefense and Emerging Infectious Diseases Research, based at Washington University. The multi-institutional center is developing methods to rapidly identify new pathogens and find means to control or neutralize them.

ADVANCED ENERGY CONFERENCE EXHIBITOR FLOOR PLAN



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National Grid

National Grid is an international energy delivery company. In the U.S., National Grid delivers electricity to approximately 3.3 million customers in Massachusetts, New Hampshire, New York and Rhode Island, and manages the electricity network on Long Island under an agreement with the Long Island Power Authority (LIPA). It is the largest distributor of natural gas in the northeastern U.S., serving approximately 3.4 million customers in Massachusetts, New Hampshire, New York and Rhode Island. National Grid also owns over 4,000 megawatts of contracted electricity generation that provides power to over one million LIPA customers. www.nationalgridus.com



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Drawing from an industry-leading portfolio of consulting, delivery and implementation services, enterprise software, systems and financing, IBM creates value for clients and solves problems through integrated solutions that leverage information technology and deep knowledge of business processes. By helping customers find value in green, understand why an intelligent infrastructure will make their lives better, and learn how to make smarter choices for business and society, IBM is a trusted advisor in a new “green-aware” market. Assisting customers in determining the energy and environmental impact caused by their organizations’ IT, people, information, product, property, and business operations enables them to develop a strategy that prioritizes current and future investments, while also revealing opportunities for their business or organization to thrive and develop. www.ibm.com/us



Stony Brook

Stony Brook University ranks among the top 1 percent of the world’s universities by the London Times Higher Education—QS World University Rankings and is a member of the elite Association of American Universities. Stony Brook’s reach extends from its 1,000-acre campus encompassing the main academic areas, an 8,300-seat stadium and sports complex, a performing arts center, Stony Brook University Medical Center, the Health Sciences Center, and the Long Island State Veterans Home to Stony Brook Manhattan, the Research and Development Park, three business incubators, and Stony Brook Southampton. Stony Brook also co-manages Brookhaven National Laboratory in partnership with Battelle Memorial Institute, joining an elite group of universities that run federal laboratories. www.stonybrook.edu

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New York Power Authority

The New York Power Authority is the nation's largest state-owned electric utility and one of New York's leading electricity suppliers. Approximately 75 percent of NYPA's generation comes from hydropower. The Power Authority was created in 1931 to produce and deliver economical hydropower to the people of New York State. Today, with 18 generating facilities and 1,400 circuit-miles of transmission lines, NYPA is energizing New York's economy with reliable supplies of lower-cost electricity. More than 400,000 jobs exist statewide because of NYPA's Power for Jobs and other economic development programs. A national leader in promoting energy efficiency and alternative energy initiatives, NYPA has initiated plans to develop large-scale solar and wind power projects across the state. It also has one of the largest clean transportation programs in the Northeast. Additional details on how the Power Authority is generating more than electricity for New York is available at www.nypa.gov.



New York State Energy Research and Development Authority (NYSERDA)

The New York State Energy Research and Development Authority (NYSERDA) is a public benefit corporation actively involved in all aspects of New York's energy landscape. NYSEDA provides technical assistance and financial incentives to New York energy consumers in an effort to promote the implementation of energy efficiency improvements; research, development and demonstration of new and renewable technologies; and sustainable decision making, across all sectors. NYSEDA's programs and initiatives span Energy, Environment, Economy and Education. www.nyserda.org



The Long Island Power Authority

The Long Island Power Authority (LIPA), a non-profit state authority, is Long Island's primary electric service provider. It owns the retail electric transmission and distribution system on Long Island and provides electric service to more than 1.1 million customers in Nassau and Suffolk counties and the Rockaway Peninsula in Queens. LIPA is the 2nd largest municipal electric utility in the nation in terms of electric revenues, 3rd largest in terms of customers served and the 7th largest in terms of electricity delivered. LIPA's mission is the delivery of safe, reliable and economical electric service to our customers and advancing energy efficiency and renewable energy initiatives to foster economic stability and growth. Under LIPA President and CEO Kevin S. Law, the utility has accomplished numerous key tasks such as; managing costs, protecting the environment, and upholding LIPA's keen reputation for reliability. www.lipower.org



CA

CA Inc. (NASDAQ: CA) is the world's leading independent information technology (IT) management software company. We help companies manage IT to become more productive and better compete, innovate and grow their businesses. With our Enterprise IT Management (EITM) software and expertise, customers can achieve lean IT. They can get the most value from IT at the lowest costs in complex computing environments, whether distributed, mainframe, cloud or virtualized. Founded in 1976, CA serves customers in diverse industries in virtually every country in the world and reported fiscal year 2009 revenue of \$4.3 billion. www.ca.com/us



Verizon

Verizon Communications Inc. (NYSE:VZ), headquartered in New York, is a global leader in delivering multiple communications and information technology services to consumers, businesses, government and wholesale customers. Verizon provides converged communications, information and entertainment services over the nation's most advanced fiber-optic network. The company delivers innovative and seamless secure, information and communications solutions to customers around the world. Verizon Wireless operates America's most reliable wireless network, serving more than 87 million customers and businesses nationwide. A Dow 30 company, Verizon employs a diverse workforce of more than 235,000 and last year generated consolidated operating revenues of more than \$97 billion. www.verizon.com



U.S. Department of Energy

The Department of Energy's overarching mission is to advance the national, economic, and energy security of the United States; to promote scientific and technological innovation in support of that mission; and to ensure the environmental cleanup of the national nuclear weapons complex. The Department of Energy oversees the nation's preeminent federal laboratory complex, and leverages significant investments in R&D to advance its mission. Today the Department is investing in science to achieve transformational discoveries; fostering the revolution in energy supply and demand while positioning the United States to lead on global climate change policy; increasing American economic competitiveness; and maintaining the nuclear deterrent, reducing the risk of nuclear proliferation, and advancing nuclear legacy cleanup.



Brookhaven National Laboratory

One of the largest high-tech employers on Long Island, the U.S. Department of Energy's Brookhaven National Laboratory has a staff of about 2,900, and approximately 5,000 scientists visit the Laboratory each year to pursue research at its world-class facilities. Home to seven Nobel Prizes, Brookhaven Lab is known for its cutting-edge basic and applied research in numerous scientific fields, including physical, biomedical and environmental sciences and selected energy technologies. Today, Brookhaven Lab is responding to the world's need for renewable energy. Particularly important for this research is the Laboratory's Center for Functional Nanomaterials, which provides new capabilities for studying and fabricating nanoscale materials. This year, Brookhaven Lab began constructing the National Synchrotron Light Source II, which will be the world's brightest synchrotron when it opens for operation in 2015. Research at NSLS-II and at the nanocenter will allow scientists to explore materials that are expected to transform the nation's energy future. www.bnl.gov

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Sanna Mattson MacLeod

Sanna Mattson MacLeod is the Advanced Energy 2009 official marketing agency. It is a member firm of the American Association of Advertising Agencies and has a 25-year history of serving technology-based accounts. The agency has deep roots in the energy industry, as well as electronics, bioscience, healthcare and employee recruitment. SMM has also been recognized by Crain's B-to-B magazine as one of America's top 100 business-to-business advertising agencies for five consecutive years. www.smmadagency.com



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Center for BioEnergy Research and Development

CBERD's mission is to assist the National Science Foundation in achieving the national priority goal of augmenting the petroleum-based economy with renewable energy, chemicals and biomaterials. We achieve this by forming partnerships with industry and jointly develop technologies for the future. Partner with us and be a part of the renewable energy future. www.bioenergynow.org/



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The Leader in Green Datacenter Resource Management. Today's high-density datacenter consumes more energy for cooling than for powering the systems it contains—and the problem is only going to get worse. That's why AFCO Systems is leading the green revolution in datacenter resource management solutions with intelligent systems that can actually boost performance, increase your density, reduce cooling tonnage, and cut total cost of ownership (TCO). AFCO Systems, along with professional mechanical engineers and the leading global financial institution, invented the active thermal enclosure in 1997. With more than 30,000 technology-enabled systems deployed today, AFCO Systems is the datacenter resource management solutions provider of choice for top-tier institutions and Fortune 500® companies. AFCO also provides leading-edge, intelligent power distribution products and a graphic power and temperature monitoring software solution – AFCO's Resource Manager. With decades of experience, our team analyzes each datacenter's requirements and tailors our technology to help customers overcome their challenges, manage their dynamic datacenter environments and improve their bottom lines—innovative solutions that work in the real world.



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New York State Foundation for Science, Technology and Innovation (NYSTAR)

The New York State Foundation for Science, Technology and Innovation (NYSTAR) is charged with growing New York State's investment in high-technology research and economic development and turning that investment into new jobs. A central element of NYSTAR's mission is the recognition that New York's world-class public and private research universities and academic centers are powerful economic development engines that can create high-tech jobs and opportunity in New York. In 2007-2008, \$53 million was invested by NYSTAR in academic-private sector partnerships in support of high technology initiatives. This investment resulted in a total reported economic impact of over \$1.7 billion. With more than 300 institutions of higher learning — second highest in the nation — and home to more than 360,000 scientists and engineers, New York is already an intellectual capital. In fact, close to 10 percent of the nation's Ph.D.s work in New York, along with nearly 200 members of the National Academy of Sciences. NYSTAR programs such as the Center for Advanced Technology Program (CAT), the College Applied Research and Technology (CART) Center Program, the Technology Transfer Incentive Program (TTIP), and the Faculty Development Program support the development and commercialization of the new technologies that will create new jobs across New York State. Other NYSTAR program such as the Regional Technology Development Center (RTDC) program and the Small Business Technology Investment Fund (SBTIF) provide both financial and professional support to high technology companies and manufacturers enabling them to grow and compete in today's global economy. www.nystar.state.ny.us

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POLYTECHNIC INSTITUTE OF NYU

Polytechnic Institute of New York University

Polytechnic Institute of New York University (formerly Polytechnic University), an affiliate of New York University, is New York's most comprehensive school of engineering, applied sciences, technology and research, and is rooted in Polytechnic's 155-year tradition of invention, innovation, and entrepreneurship – i2e. The institution, founded in 1854, is one of the nation's oldest private engineering schools. In addition to its main campus at MetroTech Center in Brooklyn, New York, NYU-Poly offers programs at sites throughout the region, including Long Island, Manhattan and Westchester. www.poly.edu



Networking Magazine

Networking Magazine, launched in 1991, is the only business monthly that provides readers with "who's who and what's what" on Long Island. It's the resource for decision makers; a critical link between business and not-for-profit worlds to advance corporate interests, vital causes, fundraising, green energy and environmental sustainability. Networking's premier event, the Annual David Awards, is held every January honoring eight extraordinary men. www.networkingmagazineusa.com



URS

URS is a leading provider of engineering, construction and technical services to public and private sector clients worldwide. We provide the complete life cycle of services to clients in the power industry, including environmental, engineering and construction services to support the development of efficient and cost-effective alternative fuel and renewable energy systems. URS is proud to serve as the construction manager for the Advanced Energy Research and Technology Center (AERTC) at Stony Brook University. www.urscorp.com



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Con Edison

Con Edison is a large investor-owned energy company, with \$14 billion in annual revenues and \$34 billion in assets. The utility provides electricity, gas and steam to 3.2 million customers in New York City and Westchester County. www.coned.com



Syracuse Center of Excellence in Environmental & Energy Systems

Syracuse Center of Excellence (syracusecoe.org) is an industry-university collaborative organization that creates environmental and energy innovations. SyracuseCoE's more than 200 members address three focus areas (clean and renewable energy, IEQ, and water resources) by conducting targeted research, demonstrating new technologies, commercializing innovations, educating the workforce, and engaging the public.



SUNY Farmingdale

Farmingdale State College, with an enrollment of more than 7,000 students, prepares students with the education, skills, and critical thinking to meet the challenges of tomorrow. Farmingdale's Solar Energy Center was the first nationally accredited facility for solar technology in the northeastern United States. Research and instructional advances in architecture, building construction, hydrogen fuel cells and other green technologies prepares students for today's emerging technologies and provides service to Long Island business and industry. Small, personalized classes, a new residence hall with suite-style living, a lush 380-acre campus undergoing major renovation, and a highly successful NCAA Division III athletics program with modern facilities make Farmingdale State College one of the fastest growing colleges in the region. www.farmingdale.edu



Center of Excellence in Wireless and Information Technology (CEWIT)

The Center of Excellence in Wireless & Information Technology is a \$250 million government / industry/ academic partnership leading the next wave of the wireless and information technology revolution. Its mission is to conduct world class interdisciplinary research in the emerging critical technologies, foster new enterprise development, address the technology worker shortage and become a world leader in wireless and information technology. CEWIT has over 70 affiliated faculty and staff, 190 Ph.D. students, an industrial advisory board, an international advisory board, a technology council and a project management team with superior experience handling the needs of industry www.cewit.org.



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The New York Academy of Sciences is internationally recognized for bringing science-based solutions to major global challenges and advancing scientific knowledge among experts and society at large.



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American Superconductor (AMSC)

AMSC provides utility and industrial customers worldwide with Smart Grid technologies that enhance the reliability, efficiency, security and capacity of the grid and seamlessly integrate renewable energy sources into the power infrastructure. These proprietary technologies and solutions span the electric power infrastructure – from generation to delivery to end use: D-VAR® systems -- a powerfully cost-effective way of regulating and stabilizing voltage levels. AMSC SVC™ systems used to eliminate voltage sags and flicker thereby giving electric utilities and large electricity users the most cost-effective way to connect large loads to circuits. PowerModule™ power converters for use in renewable and marine applications around the world. Superconductor (HTS) wire and fault current limiting technology. High power density superconductor cables use AMSC superconductor technology to increase power transfer capacity and reliability. Superconductor electricity pipelines combine conventional underground pipeline construction techniques with revolutionary, high capacity superconductor cables and proven multi-terminal DC-AC power electronic converters. The AMSC Windtec subsidiary provides complete customer-specific design and development of high quality wind energy systems for self-manufacture by original equipment manufacturers. www.amsc.com



LI High Technology Incubator

The Long Island High Technology Incubator (LIHTI) is the first of Stony Brook's technology business incubators. Since opening in 1992, it has been associated with more than 70 businesses, and 44 have graduated successfully contributing over \$2.5B to the economy and created over 500 jobs. Stony Brook's incubators also include the Calverton Incubator on Eastern Long Island, the CEWIT Incubator, and a new AERTC incubator.



Northrop Grumman

Northrop Grumman is one of the world's largest defense companies, building aircraft carriers and submarines, unmanned and manned aircraft, and other innovative military and homeland security systems. At Northrop Grumman, innovation means employees. About 2,000 people work on Long Island designing and managing major military programs. Such innovation enables our men and women in uniform to see what they need to see and know what they need to know in order to win the global war on terror. From its mentoring, internship and scholarship programs with local schools to its Housing grant program for employees, Northrop Grumman is committed not only to protecting America but also to strengthening our Long Island community. www.northropgrumman.com



Copper Development Association Inc.

CDA provides technical resources related to energy efficiency and power quality. Copper for transformers and motors ensures the best reliability and cost effectiveness.



NYS Department of Labor

The New York State Department of Labor provides a variety of services including training, skills assessment and job-matching so we can connect businesses with skilled labor and job seekers with sustainable employment.



New York Institute of Technology

NYIT offers undergraduate, graduate, and professional degrees in more than 90 majors, including engineering, environmental technology, and energy management. More than 15,000 students attend campuses in Long Island, Manhattan, and throughout the world. www.nyit.edu



Long Island Forum for Technology (LIFT)

LIFT is a technology driven economic development organization that serves the region as the NYSTAR Regional Technology Development Center, the U.S Department of Commerce Partner, and the NYS DOL Intermediary in the Manufacturing Sector. LIFT will be showcasing the Applied Science Center for Innovation and Excellence in Homeland Security a unique industry driven collaborative effort that will open early in 2010. www.lift.org



UTC Power

UTC Power, a unit of United Technologies Corp. (NYSE: UTX), based in South Windsor, Conn., is a world leader in developing and producing fuel cells that generate energy for buildings and for transportation, space and defense applications. We work with customers throughout the lifetime of their power system by offering full service maintenance, remote monitoring and spare parts.



Suffolk County Community College

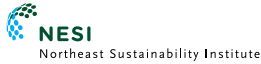
Suffolk County Community College (SCCC) is the largest community college in the State University of New York (SUNY) system, enrolling more than 24,000 students at its three campuses in Selden, Brentwood and Riverhead. SCCC offers the Associate in Arts (A.A.), Associate in Science (A.S.), and Associate in Applied Science (A.A.S.) degrees, as well as a variety of certificate programs. Offering the lowest college tuition on Long Island, a highly respected Honors program, extensive extracurricular activities, championship athletic teams, and numerous unified transfer programs, SCCC is a first-choice college for Long Island students. www.sunysuffolk.edu

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Northeast Sustainability Institute

The Northeast Sustainability Institute's (NESI) mission is to spearhead the creation of a Clean Tech cluster in New York state and the northeast United States. NESI also organizes local and regional sustainability networks.



Ascension Industries, Inc.

Ascension Industries is a turnkey contract manufacturer of green energy equipment providing cost reduction and design improvement for your project. R&D, Conceptual, Prototype, OEM, Production.



Center for Sustainable Ecosystems Nanotechnologies

The Center for Sustainable EcoSystem Nanotechnologies (CSEN), headquartered at the College of Nano-scale Science & Engineering, focuses on the role that nanotechnology will play in sustaining the world's critical ecosystems. www.sustainablenano.com



Center for Future Energy Systems, Rensselaer Polytechnic Institute

The CFES is one of 15 Centers for Advanced Technology (CAT) across New York State funded by the New York State Office of Science, Technology and Innovation (NYSTAR). The Center's mission is to connect energy research, knowledge, and technology in academia to the needs of industry through technology transfer and/or collaborations to spur economic development. In collaboration with Cornell University and Brookhaven National Laboratory, the CFES projects include low cost-high efficiency photovoltaic technologies, compound semiconductor materials, advanced lighting sources, smart lighting and displays, intelligent building architectures, wind turbine performance enhancement, bioenergy, fuel cell testing and characterization, energy storage technologies, and distributed generation test bed and smart grid testing. In each of the research areas covered by the CFES there is a focus on cutting edge research in the areas of: materials development, device fabrication, device and materials characterization, control systems, system integration and design.



Northville Industries

Privately owned and locally based, Northville Industries is Long Island's largest independent petroleum supplier. Northville is committed to alternative fuels, selling E85 gasoline (85% ethanol/15% gasoline) for FlexFuel Vehicles



Suffolk County Department of Economic Development/ Workforce Housing Department of Environment and Energy

Suffolk County Executive Steve Levy places high priority on the development of clean technology and green energy. Through the departments of Economic Development/Workforce Housing and Environment and Energy, the County encourages establishment and expansion of clean tech/clean energy businesses and is a regional leader in energy efficiency and clean energy use in its buildings and fleet.



Aegis Energy Services, Inc.

We are the largest combined heat and power (CHP) company in the Northeast. Since 1985, we have been dedicated to manufacturing, design, installing, maintaining, and operating hundreds of modular cogeneration systems for our clients. At Aegis we don't just perform a transaction we create a lifetime of savings and most importantly a long term relationship with our client. From our headquarters, located in Holyoke, Massachusetts, we provide CAD-TO-COMPLETION services for the New England and the Mid-Atlantic states. We provide decades of experience in energy applications and energy economics, and have provided more modular combined heat and power projects in the Northeast than any other company. Installations include apartment buildings, Jewish Community centers, assisted living facilities, residential institutions, office and industrial complexes, college dormitories and dining facilities, hotels, health clubs, medical & nursing home facilities, and retirement communities.



Future Tech Enterprise, Inc.

Future Tech's winning approach to IT service lets our clients run their businesses with confidence. Everything we do is geared toward providing customized IT solutions at the best price, and implemented with the best customer service. Our solutions include managed services, wireless networking and security, procurement, contract services, certifications, wireless operations, staff augmentation, award-winning software, help desk, and data center protection. Future Tech's customer base represents the leaders of industry across various markets: Northrop Grumman, JetBlue, Hofstra University, New York Philharmonic, The New York Islanders, and Good Samaritan Hospital, among others. In keeping with Bob Venero's customer satisfaction philosophy of truly partnering with our clients, Future Tech has taken on in-house configurations and onsite deployment for clients of all sizes to help them improve business resilience and remain competitive in a changing economy. www.ftei.com

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EmPower CES, LLC engineers and installs Solar Energy Systems with Data Monitoring for homeowners, businesses and institutions. EmPower also engineers and installs Electric Vehicle Charging Systems for corporate, academic and municipal campuses.

Flad Architects

Flad Architects

Flad Architects designs environments that enhance human potential. As a strategic planning and design firm, Flad creates facilities for learning, healthcare, and specialized laboratory research. www.flad.com



ATK

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Innovative manufacturer of grid-tied micro-inverters and monitoring systems for residential, commercial and utility based photovoltaic solar energy systems. www.directgrid.com



Eastern Energy Systems, Inc.

Eastern Energy Systems, Inc., (E2sys) is a renewable energy products & services company specializing in Solar PV, Wind & Geothermal Systems. E2sys serves the Industrial, Commercial, Municipal, Residential and Agricultural markets. E2sys is the leader in wind technology for Long Island and is currently working on the installation of the largest wind turbine in Long Island's history. www.e2sys.com



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21st Century Security, Inc.

21st Century Security, Inc. was established in 1985 and has been privately held ever since. The company is led and staffed by numerous law enforcement veterans and provides Professional Security Agents in Business Attire for the tri-state area. We are licensed, bonded & insured in New York & New Jersey.



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Rivkin Radler can provide your business with skillful transactional expertise and effective courtroom advocacy no matter what legal challenge you may face. Rivkin Radler's practice areas include: Corporate & Commercial, Energy, Employment & Labor, Health Services, Intellectual Property, Litigation, Real Estate, Zoning & Land Use, and Trusts, Estates & Taxation. www.rivkinradler.com



Electric Power Research Institute - EPRI

The Electric Power Research Institute conducts research and development for the global electricity sector. An independent, nonprofit organization, EPRI brings together experts from academia and industry as well as its own scientists and engineers to help address challenges in electric generation, delivery and use, including health, safety and environment.



LPP Combustion, LLC

LPP Combustion, LLC has developed a technology that converts liquid biofuels into a substitute for natural gas, this gas can then be burned with low emissions in place of natural gas. www.lppcombustion.com

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Premier Energy Group provides electricity and natural gas procurement and energy management services to commercial and industrial customers.



mindSHIFT Technologies, Inc.

mindSHIFT provides technology peace of mind to small and medium-sized organizations by delivering premier IT infrastructure and software services. We make IT work for your business.® www.mindSHIFT.com



USGBC-LI

The USGBC-LI Chapter is dedicated to the transformation of the way in which our buildings are constructed. Through the LEED rating system we advance education in green building vision, theory and practice.

Renewable Energy Long Island (RELI)



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2009 CONFERENCE PROGRAM ADDENDUM

KEYNOTE SPEAKERS/CHAIRPERSONS – Corrections and Omissions from Printed Program

November 18 -

SESSION I TRACK D - GEOTHERMAL – John Rhymer for Jack DiEnna, National Geothermal, *Geothermal Heat Pump Technology: Capturing The Energy We Own*

SESSION II TRACK C - SMART NETWORKS II – CHAIRPERSON Michael Long, DHS

SESSION II TRACK B - BIOENERGY ECONOMICS – Steve Eber/Robert Wilson, National Grid -
Presentation - *“Bio-Energy: An Opportunity For Renewable Fuel Supply And Gas Delivery”*

SESSION II TRACK C - SMART NETWORKS III – CHAIRPERSON Michael Long, DHS

SESSION II- TRACK D - WIND POWER – Chris Wisseman, Presentation - *“Offshore Wind: Prctical Expectations For New York”*

November 19 -

BREAKFAST & KEYNOTE SPEAKERS 7:45 AM – Dr. Yacov Shamash, Stony Brook University

SESSION III - TRACK D - HYDRO POWER – Jason Foust, Voith Hydro, Presentation - *“Enhancing Hydro Power Through Environmental Technologies”*

EXHIBITOR ASSIGNMENTS

| | |
|--|----|
| Advanced Energy Center (AERTC) | 18 |
| The Research Foundation | 18 |
| Renewable Energy Long Island (RELI) | 21 |
| Greater Long Island Clean Cities Coalition | 22 |
| BL Companies | 25 |
| Design Audio Visual | 28 |
| EnerTrac Corp. | 37 |

EXHIBITOR PROFILES

Booth 18: Advanced Energy Center (AERTC)

The Advanced Energy Center (AERTC) at Stony Brook University is a true partnership of Academic institutions, Research institutions, Energy providers and Industrial Corporations. Its mission is innovative energy research, education and technology deployment with a focus on efficiency, conservation, renewable energy and nanotechnology applications for new and novel sources of energy. www.aertc.org



Booth 18: The Research Foundation

The Office of the Vice President for Research at Stony Brook University works with the Research Foundation to support research and discovery in an environment that facilitates efficient and skillful administration of sponsored projects as well as transfer and sharing of intellectual property for public benefit and economic growth. www.sunysb.edu/research



Booth 21: Renewable Energy Long Island (RELI)

Renewable Energy Long Island (RELI) is a membership organization promoting clean energy and the one-stop information source for Long Island energy consumers. Offers user-friendly services and directories such as its LIGreenGuide.org business directory and SunshinelsFree.org solar calculator/contractor locator. www.RenewableEnergyLongIsland.org



Booth 22: Greater Long Island Clean Cities Coalition

Greater Long Island Clean Cities Coalition (GLICCC) was established on October 18, 1996. In our 13-year history, GLICCC has awarded more than 10 million dollars of Federal Congestion Mitigation Air Quality Improvement (CMAQ) and recently been awarded \$14,994,183 million from the US Department of Energy American Recovery Reinvestment Act (ARRA). The ARRA awardees are Nassau County, Suffolk County, Town of Hempstead, Town of Huntington, Town of Oyster Bay, Village of East Rockaway, National Grid, Total Collection Services, V. Garofalo Carting Service and Engineered Energy Solutions. These projects will include five (5) alternative fueling stations and one hundred and twenty two (122) alternative fuel vehicles to be used through out Nassau and Suffolk Counties.



Our organization has also held environmental educational seminars at various Long Island venues. www.gliccc.org

(continued on back)



Booth 25: BL Companies

BL Companies, an employee-owned firm, is a leader in delivering high-quality, integrated architecture, engineering and related services to public and private clients for land development, building design, and infrastructure projects. We are a community of professionals working in partnership with our clients to develop creative, sustainable, and practical solutions that enrich the built environment. Our reputation for excellence among clients, regulators, business partners, and peers is founded on our uncompromising commitment to integrity, quality, and exceptional service. Founded in 1986, BL Companies has 175 employees with seven offices in Connecticut, New York, Maryland and Pennsylvania. BL provides civil support to the energy industry. For more information, visit www.blcompanies.com



Booth 28: Design Audio Visual

Design AV is a full-service Audio Visual presentation equipment and systems installation company serving the L.I & NY metro region since 1981. We specialize in pro AV equipment rental & staging services for corporate & not-for-profit meetings & special events such as fund-raisers, awards shows, marketing and educational presentations. www.design-av.com



Booth 37: EnerTrac Corp.

Designs and manufactures unique solution for the implementation of Electric drive systems targeted for the light electric vehicle and small car. EnerTrac's premier product is the in wheel motor for motorcycles. This 10KW continuous three phase brushless motor has been in development for almost two years. The challenge was to develop an in wheel motor with enough power and low enough weight to maintain the spirit of a motorcycle. www.doingitall.net/EnerTrac

VEHICLE EXHIBITS AREA 1 (Located at Entrance Door near Booths 2-6)

Tesla provided by EmPower CES, LLC , Booth #36A

The Tesla Roadster is an all-electric sports car with a range upwards of 200 miles per charge. The first commercially-available vehicle to employ lithium-ion batteries, the Roadster demonstrates the robustness of all-electric transportation. The Roadster achieves 0 – 60 mph acceleration in 3.9 seconds proving efficiency does not have to compromise performance. Buyers put out a significant \$110,000 to own the sports car, but Tesla is developing an all-electric family sedan, the Model S (release in 2011), which will be more modestly priced at around \$50,000 after tax credits. www.empowerces.com

National Grid Ford Plug-In Escape PHEV Hybrid 2009 E85 /Electric Display, Booths 35, 57 & 58

The Escape Plug-In prototype has a smooth hybrid drivetrain that uses household current (120V) for charging. It can operate at low speeds in all electric mode for up to 30 miles and the vehicles can achieve up to 120 mpg. www.nationalgridus.com

EnerTrac Electric Motorcycle provided by EnerTrac, Booth #37

The custom designed and built electric motorbike is a test platform for several new technologies the frame of the bike is ultra light weight yet extremely strong, developed to be both structure and battery housing. This Motorcycle platform is designed to test batteries, controllers and motors in real world riding. It has the electronics to record all necessary data in real time (telemetry) to a PC for off line analysis. It is fully street legal and highway capable of speeds up to 60 MPH depending of the testing configuration. www.doingitall.net/EnerTrac

Solar Traveler by Go Solar

The Solar Traveler is a clean mobile generator using only the sun's rays to generate electricity. During sunny days the sixteen 135 watt Kyocera photovoltaic(PV) modules can produce up to 2 kilowatts(kW) of power indefinitely. Also on board are sixteen 6 volt 225 amp-hour Energizer deep cycle lead acid batteries which allow storage of power produced from the PV modules for future use. To convert the DC power from the PV modules and batteries to AC power there is a Xantrex XW4548 grid-tie capable inverter that has a continuous power output rating of 4.5kW and peak power rating of 9kW. Plenty of power wherever portable power is needed. www.solartraveler.com

VEHICLE EXHIBITS AREA 2 (Located in Parking Lot near Booth #1 & 2)

Manhattan Beer Delivery Truck: A 1999 International with a 6.8 John Deer Compressed Natural Gas engine.

www.manhattanbeer.com

Neighborhood Electric Vehicles Gary Birke, Motorworks Clean Vehicles, Inc.

National Grid Heavy Duty CNG Bell Dump Truck

Long Beach School District CNG Bus

Garafola Carting Services CNG Refuse Truck

American Honda CNG Civic

