The Stella Group, Ltd.

Presentation by Scott Sklar, President, The Stella Group, Ltd.
CSPI 4th Nat’l Conference on Integrity in Science, Washington, DC
Friday, July 11, 2008

The Stella Group, Ltd. is a strategic marketing and policy firm for clean distributed energy users and companies which include advanced batteries and controls, combined heat and power, energy efficiency, fuel cells, geo-exchange heat pumps, heat engines, minigeneration (natural gas), microhydropower, modular biomass, photovoltaics, small wind, and solar thermal (including daylighting, water heating, industrial preheat, building air-conditioning, and electric power generation). The Stella Group, Ltd. blends distributed energy technologies, aggregates financing (including leasing), with a focus on system standardization. Scott Sklar serves as Steering Committee Chair of the Sustainable Energy Coalition, composed of the renewable energy and energy efficiency trade associations and analytical groups, and sits on the national Boards of Directors of the non-profit Business Council for Sustainable Energy, Renewable Energy Policy Project, and the Sustainable Buildings Industry Council.

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From Financial Times today (6\30\08), p.2: "Renewable energy still provides only a small portion of the world's energy, at about 5 percent last year, but it accounted for 23 percent of new generating capacity added in the year 2007"


New Energy Finance: http://www.newenergyfinance.com/?n=13
Investors Flock to Renewable Energy and Efficiency Technologies

Climate Change Worries, High Oil Prices and Government Help Top Factors Fueling Hot Renewable Energy Investment Climate

Investors Flock to Renewable Energy and Efficiency Technologies; Transactions Leap to Record $100 Billion in 2006, Says UNEP Study; Renewables Shed Fringe Image; American, European Markets Dominate but 9% of Global Investments are in China, 21% in Developing Countries

Paris, 20 June 2007 - Climate change worries coupled with high oil prices and increasing government support top a set of drivers fueling soaring rates of investment in the renewable energy and energy efficiency industries, according to a trend analysis from the UN Environment Programme. The report says investment capital flowing into renewable energy climbed from $80 billion in 2005 to a record $100 billion in 2006. As well, the renewable energy sector's growth "although still volatile ... is showing no sign of abating."

Targets are important to give certainty and guidelines to those who need to plan and they are important to set out what is necessary to avoid dangerous interference with the climate system. But it will not do us any good to legislate targets that are unattainable or technologically unfeasible.
U.S. Carbon Emissions Displacement Potential from Energy Efficiency and Renewable Energy by 2030

57% Energy Efficiency, 43% Renewables
From: "Amory B. Lovins" <
Date: 30 June 2008 13:26:49 MDT
Subject: WSJ Nuclear Energy Feature Today

Nice start at a tough subject. However, I think you missed some critical points, e.g.:

- The main competitors to nuclear are not other central power stations but rather micro power (co-generation + renewables – big hydro) and negawatts (efficient use of electricity). Together these have north of half today's global market for new electrical services; nuclear has < 2%. In 2006, for example, nuclear added less global capacity (more than all of it from upgrading old plants) than photovoltaics added, a tenth what wind power added, and 30-40x less than micro power added. So much for calls to be "realistic" about what these supposedly trivial alternatives can do. They're actually walloping all central plants in the market place because they cost less and have lower financial risk. Micro power now provides more global electricity than nuclear does, a third of all new electricity, and from a sixth to more than half of all electricity in a dozen industrial countries.
OCTOBER 2007 - General Accounting Office (GAO) “Federal Electricity Subsidies”

Electricity (appropriations) 2002-7 --

Of total $11.5 billion - $6.2 billion went to nuclear representing the largest portion, with fossil fuels receiving $3.1 billion followed distantly by renewable energy at $1.4 billion.

Electricity (tax expenditures - revenue loss) 2002 - 2007 -

Of the total $18.2 billion - Fossil fuels received $13.7 billion, renewable energy $2.8 billion, and the remaining approximately $2 billion was infrastructure (utilities - wires and pipelines).
Global Capacity of Renewable Energy Technologies

Total global capacity for wind-generated power reached 100 GW (that's giga, with a G) in 2007. Germany, by far, has the most installed wind capacity at about 22 GW. The U.S. is second with about 17 GW. Spain comes in third with about 15 GW. China, however, had the most installed new wind capacity in 2007, adding 3.4 GW in just one year.

Solar PV, for its part, reached 11 GW of total installed global capacity. About 8 GW of that is grid-tied capacity with the remaining 3 GW coming from off-grid applications.

Globally, about 240 GW of renewable energy are installed. Small hydro and wind lead that mix with about 70 GW each, but biomass, solar and geothermal are quickly gaining traction.

The fact China has more installed gigawatts (50 GW) than the U.S. (~30 GW) and China also installed 75% of the world's new solar hot water capacity in 2006. The U.S. had about 0.4% of that capacity. Ren 21 (2008)
Potential Reduction in U.S. Carbon Emissions

- Geothermal: 83
- Biofuels: 58
- Biomass: 75
- CSP: 63
- PV: 63
- Wind: 181

Energy Eff.: 688

CO₂ Reduction Potential (MtCO₂/ yr)

- 80% (130 MtCO₂/ yr)
- 60% (114 MtCO₂/ yr)

CO₂ Reduction Goals

Resource
- Lower
- Higher

- Geothermal
- Biomass
- CSP
- PV
- Wind
- Energy Eff.
CSP Has Been a Reliable Resource for California

- Averaged 80% on-peak capacity factor from solar
- Over 100% with fossil backup
- Could approach 100% from solar with the addition of thermal energy storage.
STANDARDIZED INTERCONNECTION: 29 STATES

QuickTime™ and a decompressor are needed to see this picture.
Renewable Portfolio Standards and State Mandates by State, 2007 (EIA)
Rooftop Solar Technologies

- Photovoltaics (PV): Solar Electricity
  (photo = light, voltaics = voltage)
- Solar Water Heating
- Transpired Solar Collectors
- (TSCs)
Building Integrated Solar Electricity

**SOLUTION**

Building Integrated Photovoltaic provide a return on investment for a non-investment capital improvement budget spend (Roofing).

In addition to reducing energy consumption, integrated solar electric roofing offers many other benefits, including:

- **Decreased roofing maintenance and replacement costs.**
- **Improved building comfort and energy security.**
- **Reduced impact on surrounding air temperatures (heat island effect).**
- **Reduced peak electricity demand.**
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• Reduced peak electricity demand.
Made in America In 1960, jobs within the energy industry (including coal mining, petroleum refining, electric and gas utilities) represented about 1.8% of total U.S. employment. By 1990 that share fell to 1.2 percent. "This ratio likely will further over the next decade," the U.S. Center for Global Climate Change reported in 2002.

"Employment patterns resulting from conventional energy-consuming industries are driven by the capital-intensive nature of the industry. When annual expenditure, coal, oil, gas and nuclear technologies are added to any economic activity." The solar water heating industry manufacturing needed to create both new skilled and

Realizing the Potential Several utilities in the Midwest and Northeast — offer consumers a way to use solar systems. In turn, the utility avoids the costly, especially power to meet peak energy demand, and it's with every-increasing restrictions on pollution emission..."
Cow burps help Argentines study climate change

Argentine scientists are taking a novel approach to studying global warming -- strapping plastic tanks to the backs of cows to collect their burps. Researchers say the slow digestive system of cows makes them a producer of methane, a potent greenhouse gas that gets far less public attention than carbon dioxide in efforts to fight global warming.

http://www.enn.com/top_stories/article/37607 (July 08)