



The Stella Group, Ltd.

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## RE Contributions

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The Stella Group, Ltd. is a strategic marketing and policy firm for clean distributed energy users and companies which include advanced batteries and controls, energy efficiency, fuel cells, 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 CoChairs the Policy Committee of the Sustainable Buildings Industry Council.

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## Clean Energy Reports

### 1. GREENPEACE/DLR

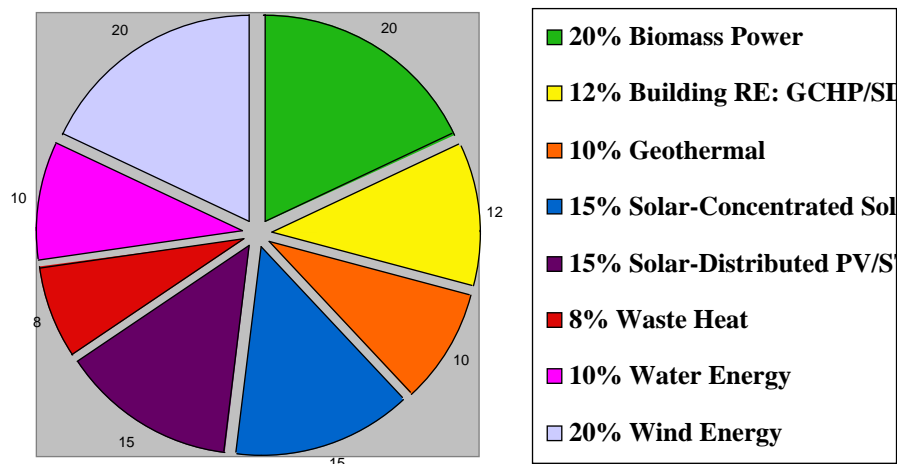
The world could eliminate fossil fuel use by 2090 by spending trillions of dollars on a renewable energy revolution, the European Renewable Energy Council (EREC) and environmental group Greenpeace said. The 210-page study is one of few reports -- even by lobby groups -- to look in detail at how energy use would have to be overhauled to meet the toughest scenarios for curbing greenhouse gases outlined by the U.N. a Climate Panel. "Renewable energy could provide all global energy needs by 2090," according to the study, entitled "Energy (R)evolution." EREC represents renewable energy industries and trade and research associations in Europe.

### 2. ASES/NREL U.S. Energy Experts Announce Way to Freeze Global Warming

On January 31, 2007 at a press conference in Washington, D.C., ASES unveiled a 200-page report, Tackling Climate Change in the U.S.: Potential Carbon Emissions Reductions from Energy Efficiency and Renewable Energy by 2030. The result of more than a year of study, the report illustrates how energy efficiency and renewable energy technologies can provide the emissions reductions required to address global warming. U.S. Carbon Emissions Displacement Potential from Energy Efficiency and Renewable Energy by 2030 - 57% Energy Efficiency, 43% Renewables

3. **GOOGLE** Google.org, the philanthropic arm of the search giant, has unveiled a plan to move the U.S. to a clean-energy future. The vision: In 2030, electricity will be generated not from coal or oil but from wind, solar, and geothermal power. Energy demand will be two-thirds what it is now, thanks to stringent energy-efficiency measures. Ninety percent of new vehicle sales will be plug-in hybrids. Carbon dioxide emissions will be down 48 percent. Getting there will cost \$4.4 trillion, says the plan -- but will recoup \$5.4 trillion in savings. The Clean Energy 2030 plan would require ambitious national policies, a huge boost to renewables, increased

## Percentage of Clean Energy in 21st Century



## **Geothermal — 10% of US Electricity**

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Geothermal according to MIT study

- Jan 22, 2007 ... MIT study: Get more energy from Earth's heat. Geothermal could meet 10 percent of U.S. needs by 2050.

[www.msnbc.msn.com/id/16755646](http://www.msnbc.msn.com/id/16755646)

## **Biomass Electric — 20% of US Electricity**

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- Biomass Power could result in 17-28 percent of total U.S. electric generation.

[www.nirs.org/alternatives/factoid18.htm](http://www.nirs.org/alternatives/factoid18.htm)

## Concentrated Solar Power — 15% of US Electricity

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- Concentrated Solar Power from Earth Policy Institute  
<http://www.earth-policy.org/Updates/2008/Update73.htm> - easy 15%
- also see: SOLAR ENERGY COULD PROVIDE 8000+ MW OF CAPACITY IN WESTERN STATES BY 2015  
[www.sustainableenergycoalition.org/factoids/factoid\\_12.html](http://www.sustainableenergycoalition.org/factoids/factoid_12.html)
- WAPA and Sandia/NREL Studies - similar conclusions
- A USDOE report for the Western Governors' Association (WGA) in 2005 provided an assessment of the potential impact of CSP. It found that by using only available land with the most intense sunshine, over 6,800 GW of electricity could be generated in the Southwest.<sup>17</sup> To put this in perspective, the electric generating capacity of the entire country is currently about 1,000 GW.<sup>18</sup> And further: Assessment of Parabolic Trough and Power Tower Solar Technology Cost and Performance Forecasts" Draft 3, Sargent and Lundy, LLC, October 2002
- <http://www.nrel.gov/csp/troughnet/pdfs/41233.pdf>

## Distributed Solar - PV/ST — 15% of US Electricity

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Energy on and in Rooftops - bottom line is probably half the energy for buildings can be generated on-site - so let's say 15% in US  
<http://www.nrel.gov/docs/fy06osti/39830.pdf>

**Rooftop solar power:** The solar energy potential of commercial building rooftops in the USA

- United States commercial building rooftops may be the most wasted real estate in North America. Combined, these predominantly flat rooftops represent an area of more than 1,000 square miles that, outside of their sheltering function, do nothing more than soak up the sun, literally. More than half of this space has the potential to produce energy using simple photovoltaic, or solar electric, generating stations. Bill Jeppesen, for RWE SCHOTT Solar, Inc., USA reports (8/20/04)
- and
- Navigant / Energy Foundation 2005 market study - technical potential of PV in the US. Using only roof space (per Census) and using average amounts of shading, tilt, etc., within the US, their estimate was maximum technical potential

## **Renewable Building Applications** **— 12% of US Electricity**

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- Ground-coupled (Geothermal Heat Pumps)
- Solar Day-lighting
- Worldwide Capacity of Solar Thermal Energy Greatly Underestimated -- 2004 (10 November 2004). The International Energy Agency's Solar Heating and Cooling Programme and major solar thermal trade associations publish new statistics on the use of solar thermal energy. The new data – expressed for the first time in GWth, rather than in square meters of installed collector area – shows the global installed capacity to be 70 GWth (70.000 MWth).

## **Water Energy —** **10% of US Electricity**

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Water Energy - EESI, EPRI, NHA, OREC  
[www.eesi.org/060807\\_Hydropower](http://www.eesi.org/060807_Hydropower)

Several studies conclude that upgrading existing dam turbines, installing free-flow hydropower (no dams or diversions) tidal, wave and ocean currents and thermal could produce 10% of US energy.

## **Waste Heat — 8% of US Electricity**

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Using waste heat to produce electricity  
ACEEE, EPA and DOE say an easy 8 % of  
US electricity and probably more in  
displacing other thermal applications could  
be displaced by CHP.

<http://www.aceee.org/pubs/ie983.htm>

## **Wind Energy — 20% of US Electricity**

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A new analysis by the U.S. Department of  
Energy (released 5\08) finds that wind can  
be a major contributor to the country's  
energy mix, supplying up to 20% of  
electricity by 2030.

For the report and executive summary:  
[www.20percentwind.org](http://www.20percentwind.org)