

Nanotech-Inspired Clean Energy

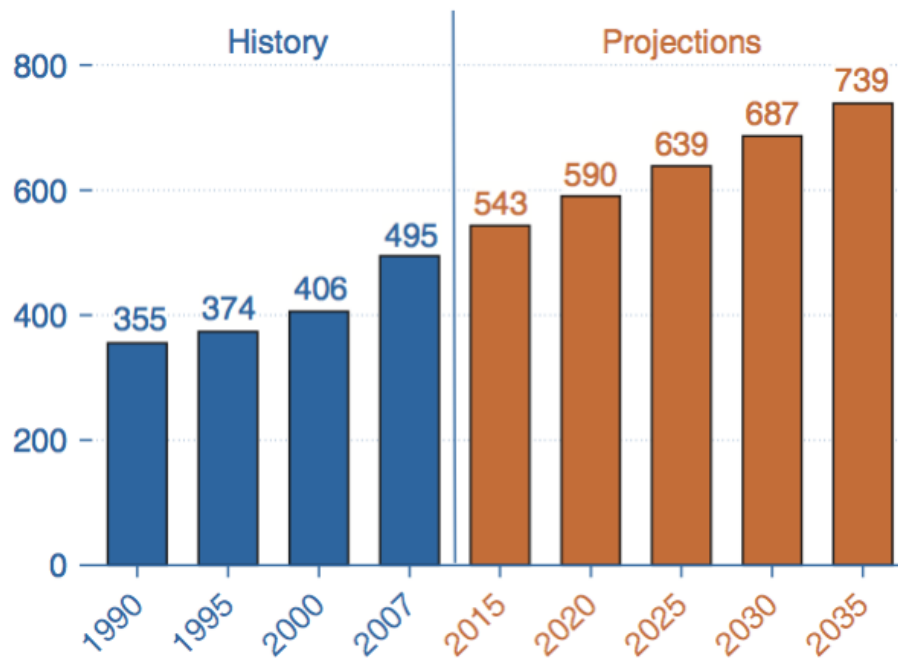
David Thomas, VP Nanogenesis Group
A Division of AEGIS Technologies

www.NanogenesisGroup.com

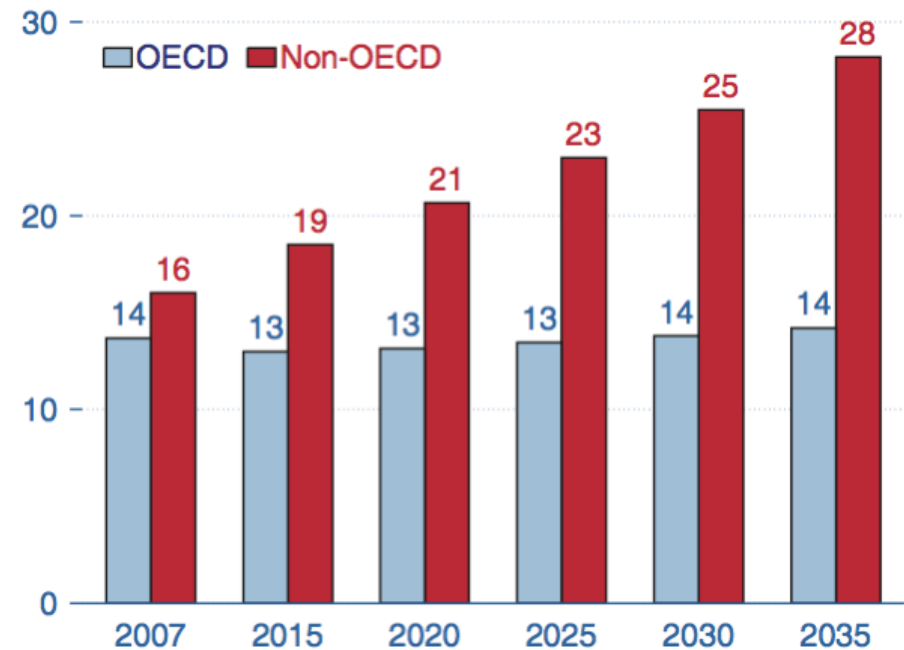


Developing Life Changing Technologies
nanogenesisTM
A Division of AEGIS Technologies

World Energy Consumption (quadrillion BTU)



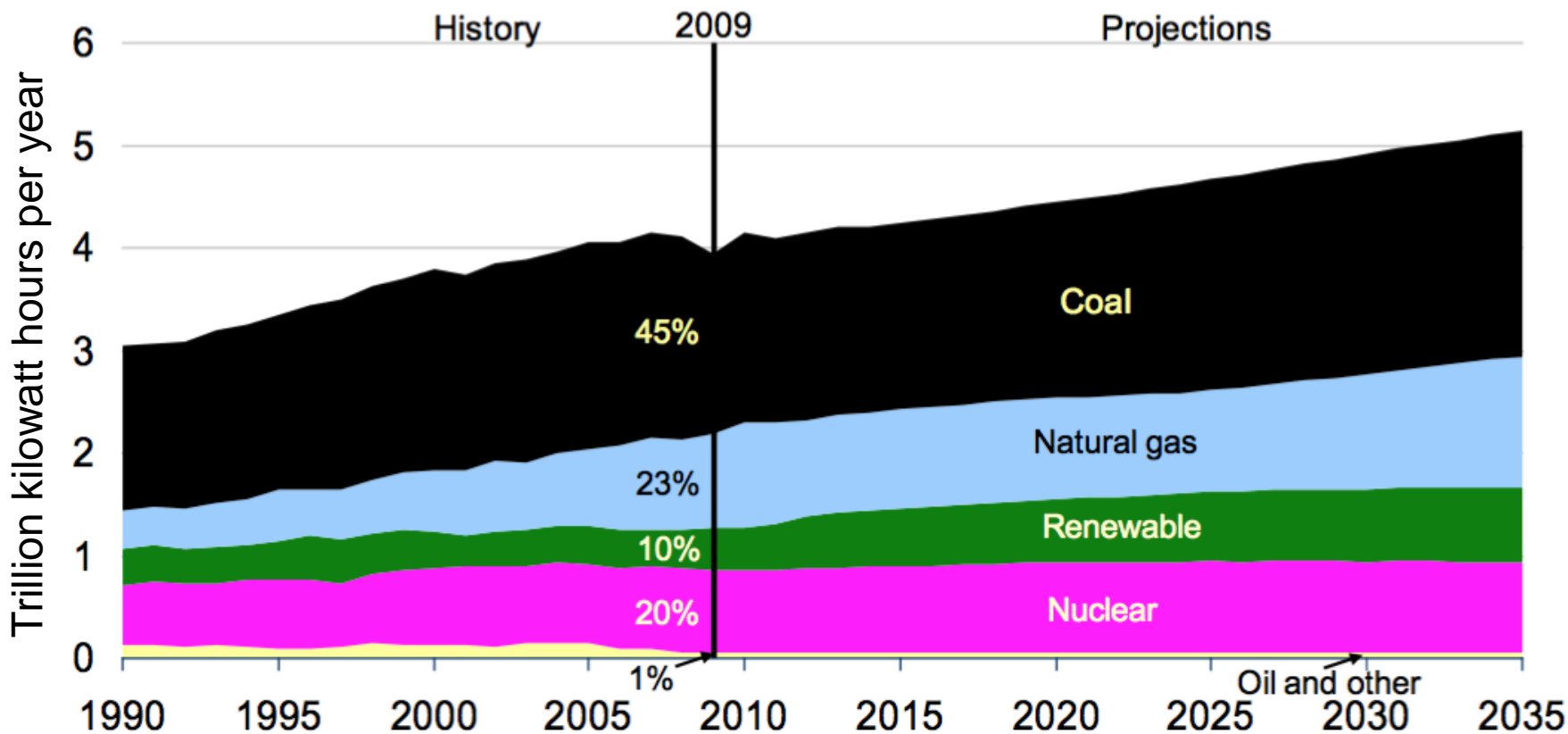
World CO2 Emissions (billion metric tons)



OECD is the Organization for Economic Co-operation and Development

Source: US Energy Information Administration (EIA)

Electricity production will shift to lower carbon emissions
Renewable energy sources will grow by 73%



Source: US Energy Information Administration (EIA)

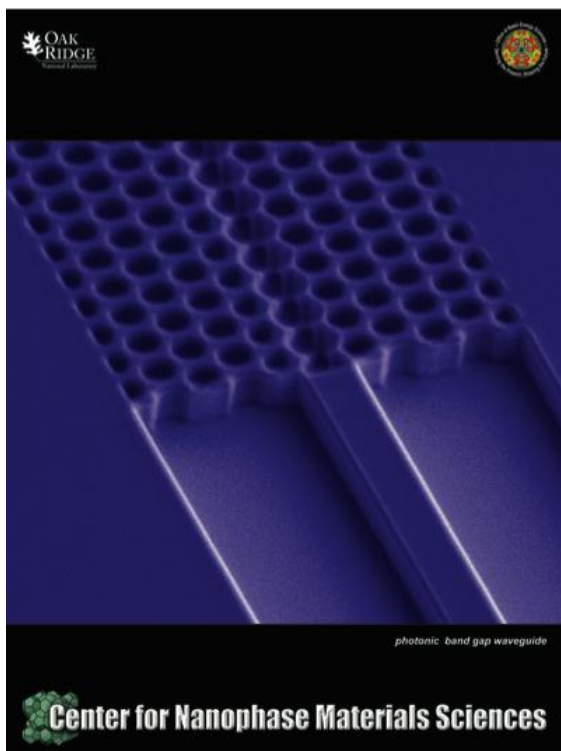
Alabama is ranked #6 in the nation in renewable capacity and generation

State	Net summer capacity (megawatts)	Rank	Net generation (thousand megawatthours)	Rank
Washington	23,504	1	77,977	1
California	16,295	2	53,428	2
Oregon	10,359	3	37,306	3
Texas	10,354	4	22,133	5
New York	6,013	5	32,082	4
Alabama	3,863	6	15,585	6
Iowa	3,511	7	8,560	10
Montana	3,078	8	10,422	9
Idaho	2,909	9	11,302	7
Arizona	2,826	10	6,630	14



2009 US Renewable Capacity and Generation

Source: US Energy Information Administration (EIA)



“AEGis is investing heavily in Nanotechnology because we believe **Nanotech is every bit the industrial revolution of the next 30 years that integrated circuits were in the last 30**”

-- *Steve Hill, President and CEO, AEGis Technologies*

“Everything can be made in some way better—stronger, lighter, cheaper, easier to recycle—if it’s engineered and manufactured at the nanometer scale.”

-- *Stan Williams, Director of Quantum Science Research, HP Labs*

“We see it (nanotechnology) as having **virtually unlimited potential to transform the way we produce, deliver, and use energy**, not to mention its likely effect on medical technology and national security.”

-- *U.S. Energy Secretary Spencer Abraham*

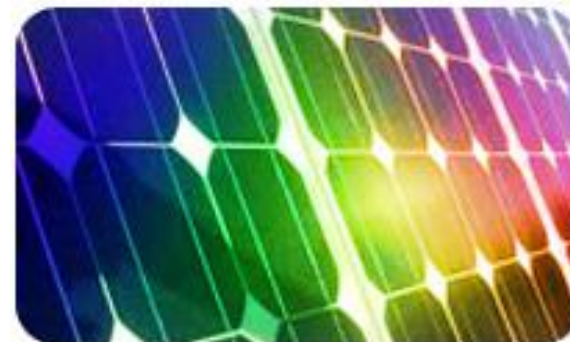


Nanotechnology can Improve the Efficiency of Solar Cells

Nanogenesis is developing solar cells with higher efficiency than current devices

This technology has the potential to enhance the efficiency of the cell **and** offer reduced cost to manufacture

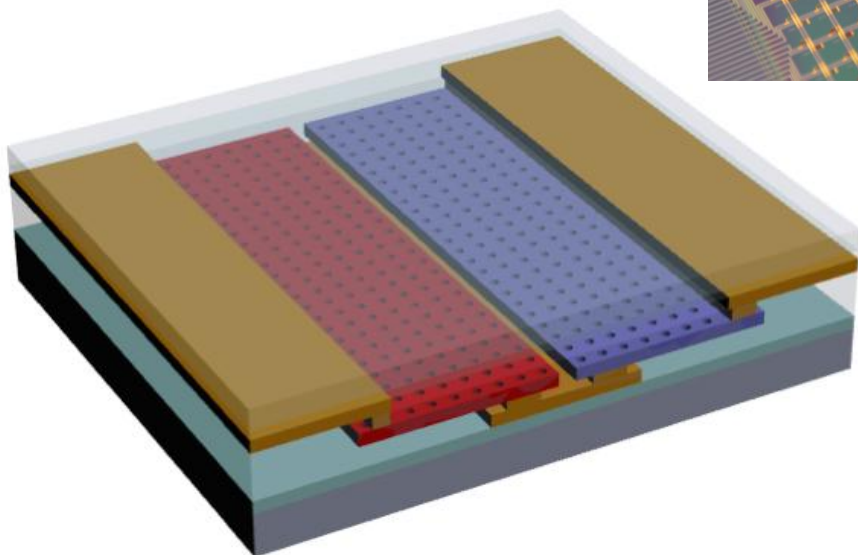
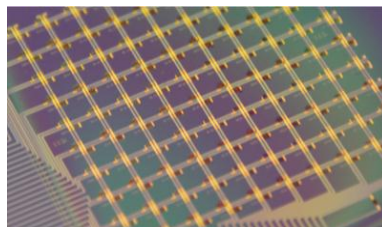
Our research includes transparent solar technology with widespread commercial implications



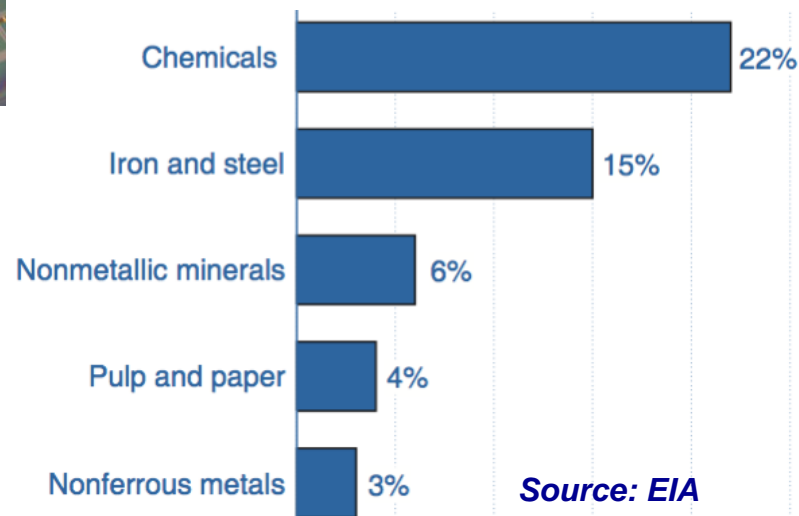
Nanotechnology can improve the efficiency of thermo electric generators

- Nanogenesis is developing high temperature, conformal thermal devices
- We are leveraging expertise from our experience in building micro/nano scale technology on thin metal foils

Nanogenesis metal foil platform (right) and Thermo Electric Generator (TEG) design (below)



World industrial sector energy consumption (percent of total)

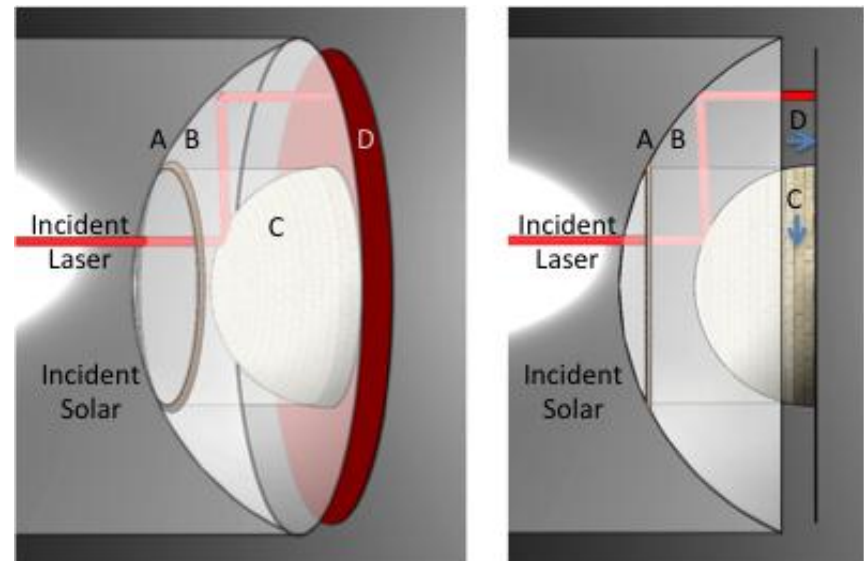


- At least half of the solar energy striking a solar cell is lost to heat
- Solar cells begin to lose efficiency when they heat up
- We are developing technology to collect light *and* heat *and* cool solar panels
- NASA is interested in providing auxiliary power to satellites using energy from a high power laser beam

NASA concept of a laser power station



Nanogenesis solar-thermal collector design for the NASA "Ride the Light" effort



Alabama has unique capabilities and resources with a leadership role in clean energy production

We are developing clean energy capacity, inspired by nanotechnology, with the potential to improve efficiency and reduce manufacturing costs

We have before us a very real opportunity to have a tremendous impact on our country's future