

# **Nukes Are Not the Answer**

Why Sierra Club Doesn't Want More Nukes  
In Texas and What We Propose Instead

Presentation to Victoria Lion's Club

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# Outline

- Context: Nukes back in the U.S. and Texas
- Context: Incredible political deals
- Myth One: Nuclear Energy is Cheap
- Myth Two: Nuclear Energy is Reliable
- Myth Three: Nuclear Energy is Safe
- Myth Four: Nuclear Energy is Clean
- Myth Five: We need all the options on the table
- What do we want instead? Efficiency, renewables, jobs and investment

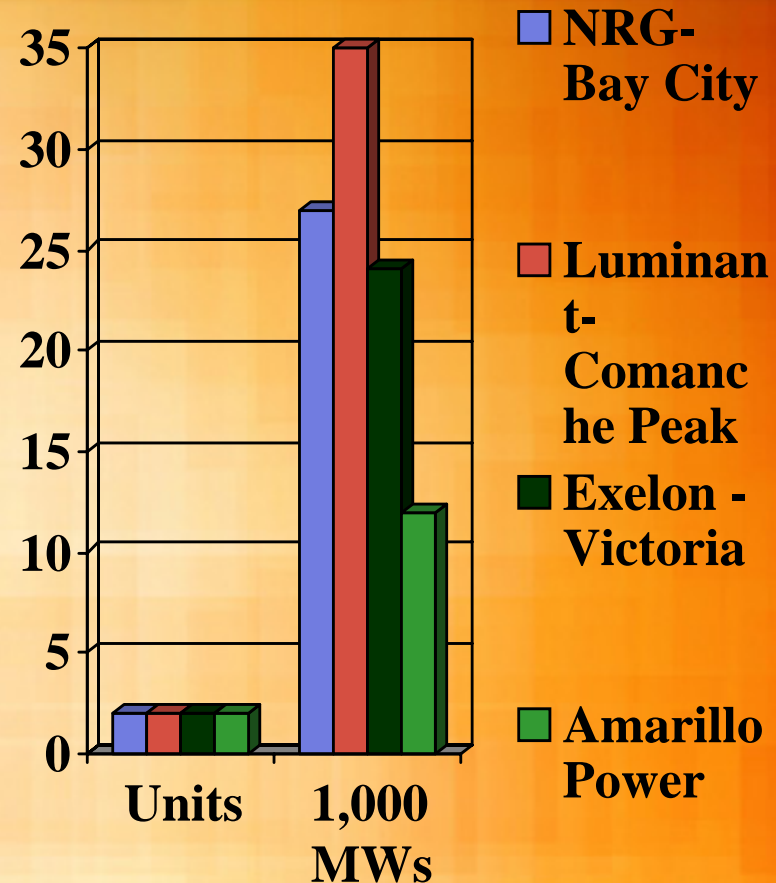
# Context: Nukes back in the South?

## The Evidence

- 23 plants proposed; 34 units;
- 2 new designs approve; 3 more being sought for Certification
- 2005 Energy Bill created \$18.5 billions in tax subsidies, extension of Price-Anderson Act; production credit for first six built
- McCain in favor of 100s of nuclear: Obama is favorite of Exelon and has been glib on nuke question
- Huge PR campaign and selling of Nukes as green including by some greens
- Nukes as answer to the Global warming question
- Large utility companies are promoting -- Exelon, Duke, NRG, Luminant
- State legislatures awash in proposed tax breaks, other steps to promote nukes
- Some cities and public power companies seeking to lock in investment..

# Focus in Texas

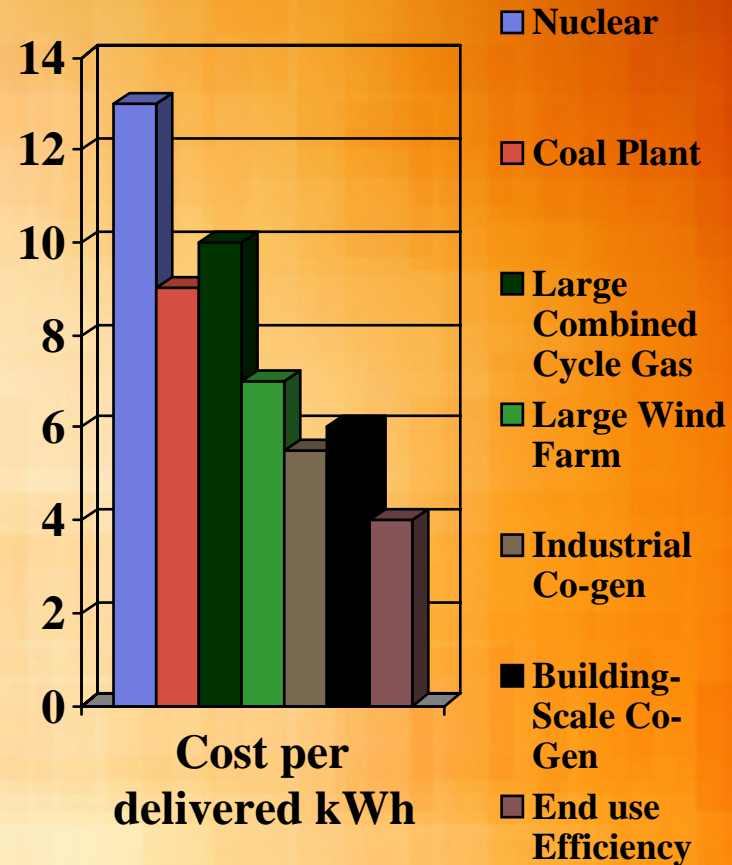
- Four proposed plants; eight units
- Only one -- NRG in Matagorda docketed, but then docket withdrawn
- Legislature in 2007 passed three bills benefiting nukes -- property tax break; decommissioning state program and PPA extension for municipalities
- Recent Governor Competitive Council recommendation on fast-tracking water permits
- Uranium mining up in activity again
- Recent licensing of first of two radioactive waste licenses in West Texas despite some shoddy geology with favorable rules



# Myth One: Nukes are Cheap

**The Economist, 2001: “Nuclear Power, once claimed to be too cheap to meter, now too costly to matter”**

- Industry emphasizes low operating costs, comparing them with total costs of building and operating other plants (2 cents vs. 7 cents for coal eg)
- But capital cost overruns have made the industry rely on bail-outs -- 1986 study found average cost overruns of 209-381%
- Forbes: The largest managerial disaster in U.S. business history, involving \$100 billion in wasted investments and cost overruns”
- June 2007 study by Keystone Center estimated true nuclear cost is more on 8.3-11.1 c/kWh
- Since then, all power plant construction costs have surged and current Moody forecast is \$5,000-\$6,000 per kW.
- FPL estimates two unit proposal of \$12-24 billion
- Manufacturing bottlenecks and rising costs and imported components



# Myth Two: Nuclear Energy is Reliable

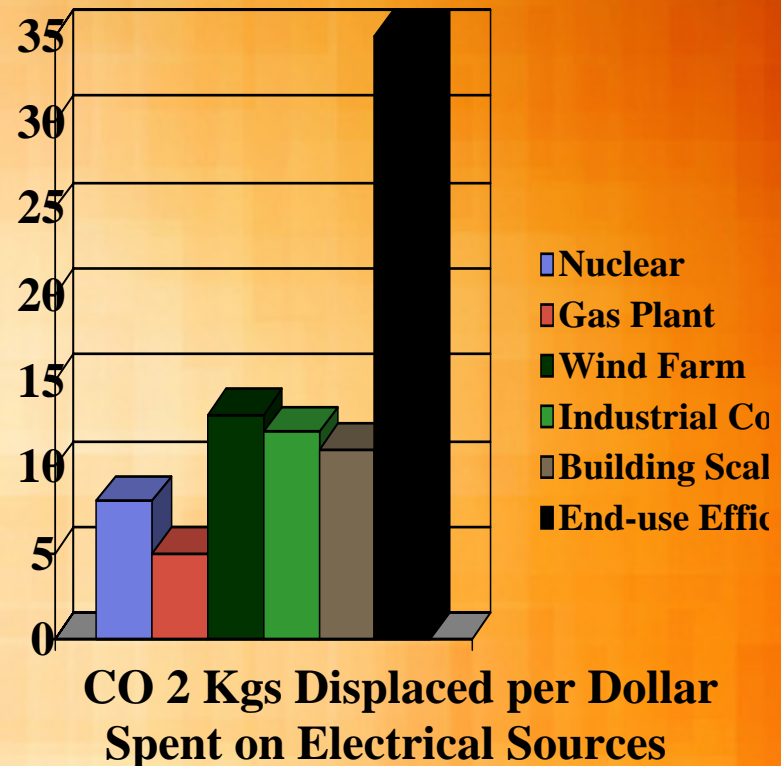
- Proponents often compare nuclear to wind to show 24/7 vs. intermittent supply
- Study after study found can integrate large amount of renewables into the grid reliably
- Nuclear: 132 out of 253 built
- 28 since shut down because of problems; while another 36 have been shut down for more than a year at one time or another.
- Routine refueling shuts down the typical plant for more than a month every 18 months;
- Heat waves shut down nuclear power plants recently in Georgia, France and England;
- Earthquake shut down largest nuke plant in world for two years
- Any blackouts will automatically shut down nuke plants

# Myth Three: Nuclear Energy is Safe

- Commercial nuclear power is driving force behind proliferation of nuclear weapons
  - Davis-Besse plant in Ohio was within six inches of a reactor meltdown and container breach and shut down for two years -- other 30+ shutdowns were because of safety problems
  - Continual, repeated problems at same reactors with failure of NRC to properly enforce
  - NRC only requires design-basis accidents, not severe accidents
- Only requires an emergency planning zone of 10 miles, even though a severe accident would expose people within at least 100 miles
- The Price-Anderson liability limit provides a disincentive for plant operators to be as safe as they could
  - Nuclear waste pools are not protected against terrorist attacks and are the most vulnerable part of nuclear plant.
  - Nuclear plants have not been assessed for terrorist attacks by aircraft properly.
  - Four accidents in June and July in France from aging reactors

# Myth Four: Nuclear Power is Clean

- Generating electricity produces minimal gases, but uranium mining, processing, enrichment, deconversion; as well as eventual disposition do -- and also have other environmental problems
- No permanent solution for nuclear waste -- even Yucca mountain only being designed for existing plants, not new ones
- Low-level radioactive waste is also problematic and Barnwell, SC shut down -- proposed West Texas site has serious geologic flaws
- No bigger water user than nuclear power
- If we want to reduce CO<sub>2</sub>, investing in nuclear doesn't make sense -- we get more for the dollar by investing in other low CO<sub>2</sub> options



# Myth Five: We Need it All Too Meet Our Growing Energy Needs

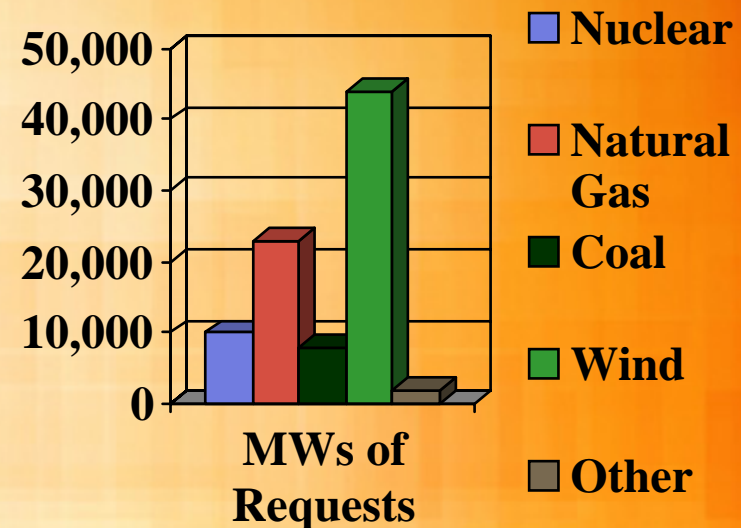
- Figure ES-2. Share of Future Electricity Consumption that Can Be Met with Efficiency and Renewables Resources

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TIFF (Uncompressed) decompressor  
are needed to see this picture.

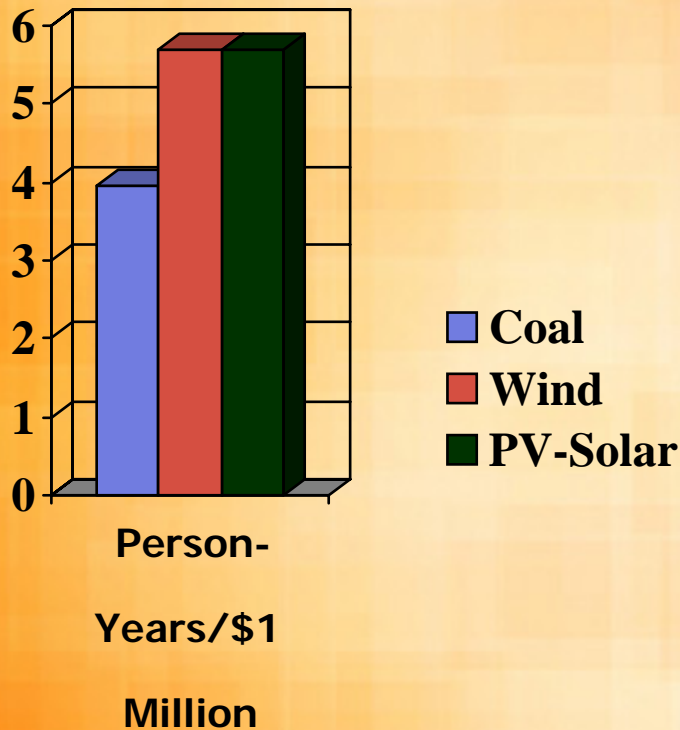
# Nuclear power is getting its butt kicked by wind, solar, cogeneration and efficiency; only massive subsidies will save it

- In fact, in 2005, global micropower -- renewables plus cogen --surpassed the amount of electricity provided by nuclear in the world
- 2006: Nuclear added 1.5 GW/yr; in 2006, photovoltaics added 1.74 GW/yr, while windpower added 15.1 GW. 2007-- Nuclear 3.4 GWs; wind -- 20.6
- David is beating Goliath -- 44,000 MWs of interconnection agreements in Texas
- CREZ plan will make 18,000 additional MWs available of wind
- China -- 8.6 GWs of nuclear; 49 GWs of renewable
- Nuclear power retards investment in other good stuff like efficiency
- Carbon-constrained world has many options and nuclear power is the worst
- Private investment in the US in renewables -- \$71 billion in 2007; 0 for nuclear

## Generation Interconnection Requests at PUC, 2007

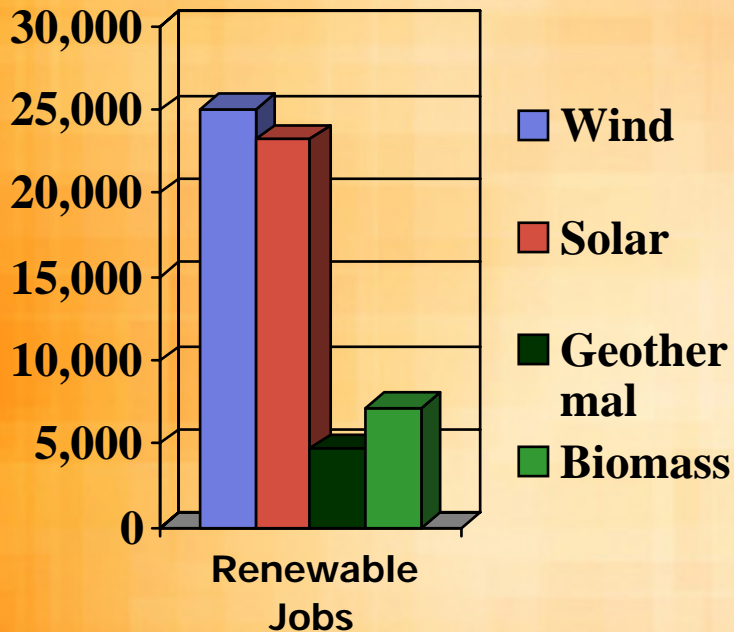


# How does new industry compare to traditional coal?



- Coal mining and coal processing jobs coming way down -- from some 150,000 to 50,000 between 88 and 2008
- Solar PVs, Biomass and Wind generate more jobs per MW and per investment
- Solar PV is by far the most job-intensive per MW because of myriad of supplies needed. (35.5 hours of labor required per MW constructed)

# Blue-Green Alliance: Texas Analysis



- 185,000 MWs of Renewables in U.S: where would jobs be created in Texas?
- Reality: 44,000 MW alone being sought for wind projects in Texas -- PUC interconnection agreements

# **COOL TEXAS: A 12-STEP PLAN TO MEET ELECTRICITY NEEDS & REDUCE GLOBAL WARMING**

- Required Reporting of Global Warming Emissions
- Flexible No-Regrets Action Plan
- Improved Permitting Standards for New Coal Plants
- Raise the RPS to 20% by 2020
- Utility Efficiency Standard: 100% of Growth by 2020, including on-site renewables
- Major Weatherization Program for Low-Income Texans
- Appliance Standards
- Advanced Building Codes
- Expanded state Loans and Guarantees for Public Buildings, Munis and Coops
- Expanded Job & Commercialization of Renewable Fund
- Combined Heat and Power Standards and Support
- Green Fleets and Plug-in Hybrid Incentives

# The Future is Solar, Wind and Efficiency

