

Market Outlook & Incentives

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2009 SGIP

- Self Generation Incentive Program
- Wind Turbines _____ \$1500 per kW
- Fuel Cells (non-renewable) __ \$2500 per kW
- Fuel Cells (renewable) _____ \$4500 per kW
- Advanced Energy Storage ___ \$2000 per kW
 - Pumped hydropower
 - Compressed air energy storage
 - Batteries
 - Flywheels
 - Superconducting magnetic energy storage
 - Electrochemical capacitors
- Please refer to Self Generation Incentive Program handbook for complete program details.



SGIP Limitations

- 5 MW size limit
- Incentives for first 3 MW*
 - Limited to 3 MW per site for entire program duration
- Incentives are prorated based on size:
 - 0 MW to 1 MW _____ 100% of per kW incentive
 - 1 MW to 2 MW _____ 50% of per kW incentive
 - 2 MW to 3 MW _____ 25% of per kW incentive

*3 MW limit increase (from previous 1 MW limit) applies to 2008 & 2009 program years only. The CPUC will evaluate a potential future extension.



SGIP Requirements

- New, commercially available equipment
 - No used equipment
 - Minimum 1-year commercially available
- 5-year warranty requirement
- Grid interconnection
 - Application approval required *before* electric interconnection agreement approval
- After initial approval
 - 60 days – proof of project advancement
 - 12 months – completion of project
 - 18 months – completion of project (public entities)



Import Reference Materials

- **Program Handbook**
- Reservation Request Form & Checklist
- Proof of Project Advancement Checklist
- Materials available at:
<http://www.socalgas.com/business/selfGen/forms2009.html>
- **AB412**
 - Reinstates SGIP incentives
 - Microturbines
 - Turbines
 - IC-engines



Rule 38 Funding

- Additional funding to affect purchase decision
- Case by case basis
- 59 month take-or-pay contract
 - Adjustable funding vs. contract quantities
- Contract **BEFORE** equipment purchase
- \$100,000 cap
- Showcase requirement
- Can be combined with SGIP



Tax Credits

- The Energy Improvement and Extension Act of 2008
 - Effective October 3, 2008
- Extended to Dec. 31, 2016
- Install CHP from Oct. 3, 2008 to Dec. 31, 2016
- Solar, Fuel Cells, & Small Wind Turbines
 - Tax Credit ~ 30% of expenditures
- Geothermal Systems ~ 10% of expenditures
- Microturbines ~ 10% of expenditures (2 MW or less)
- Combined Heat and Power
 - 10% of expenditures, 50 MW or less with 60% efficiency

Microturbines

- No air quality permit required
- Capstone
 - 60 kW & 200 kW
- Ingersoll-Rand
 - 250 kW
 - 3rd party
- ERC – 30 kW



Fuel Cells

- No air quality permit required
- SGIP for 1 MW
 - \$2.5 million (natural gas)
 - \$4.5 million (>75% renewable)
- High-efficiency
- 4 technologies
 - Alkaline
 - Phosphoric acid
 - Molten carbonate
 - Solid Oxide
- Longer paybacks
- **Green Technology**
 - LEED, AB32, etc.



Carrier Steam Turbine

- No air quality permit required
- 275 kW
- 125 psi – 200 psi steam
- Short paybacks
- 3rd party available



Electratherm Waste Heat Generator

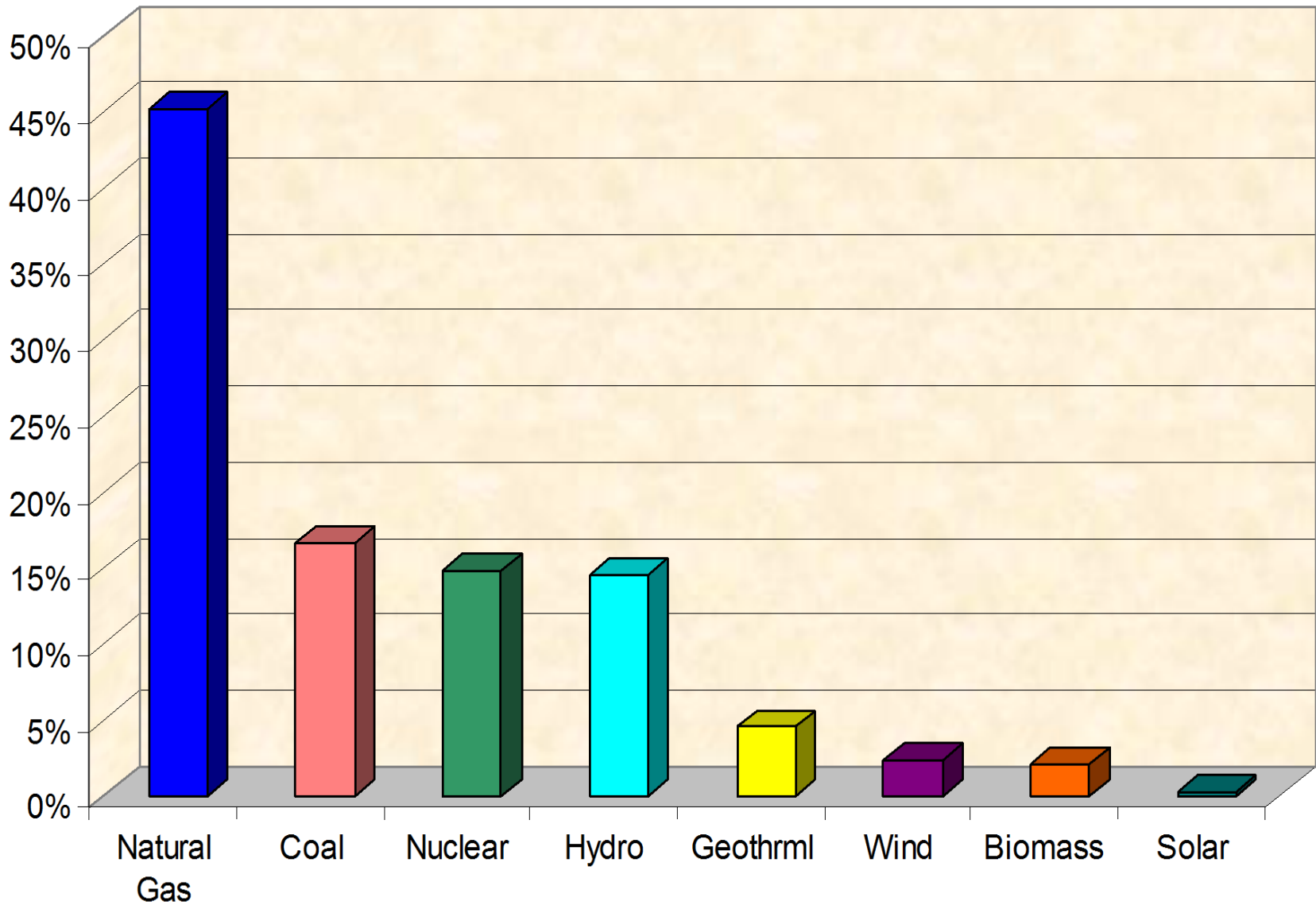
- No air quality permit required
- Hot gas or hot water
- 50 kW – 1500 kW
- Low maintenance
- First unit - Dallas, TX



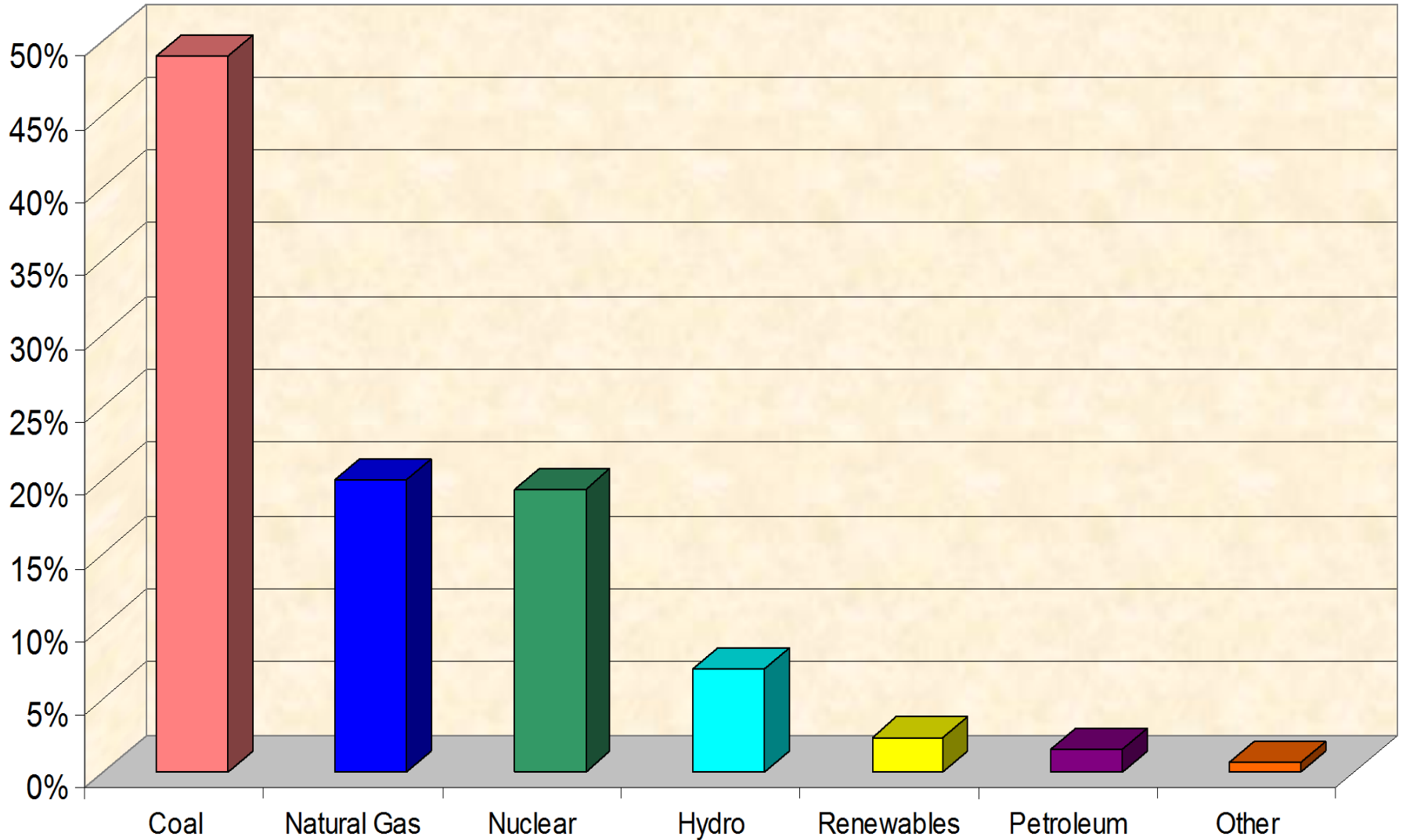
Regulations

- IC-engines
 - New 1110.2 (SCAQMD)
 - CARB 2007 - new installations
 - More frequent testing (source testing & portable analyzer)
- Electricity buyback tariff
- AB32 (state law)
 - 30% reduction GHG by 2020
- American Clean Energy and Security Act (HR 2454)
 - Cap and trade program (tax)
 - 17% reduction GHG by 2020

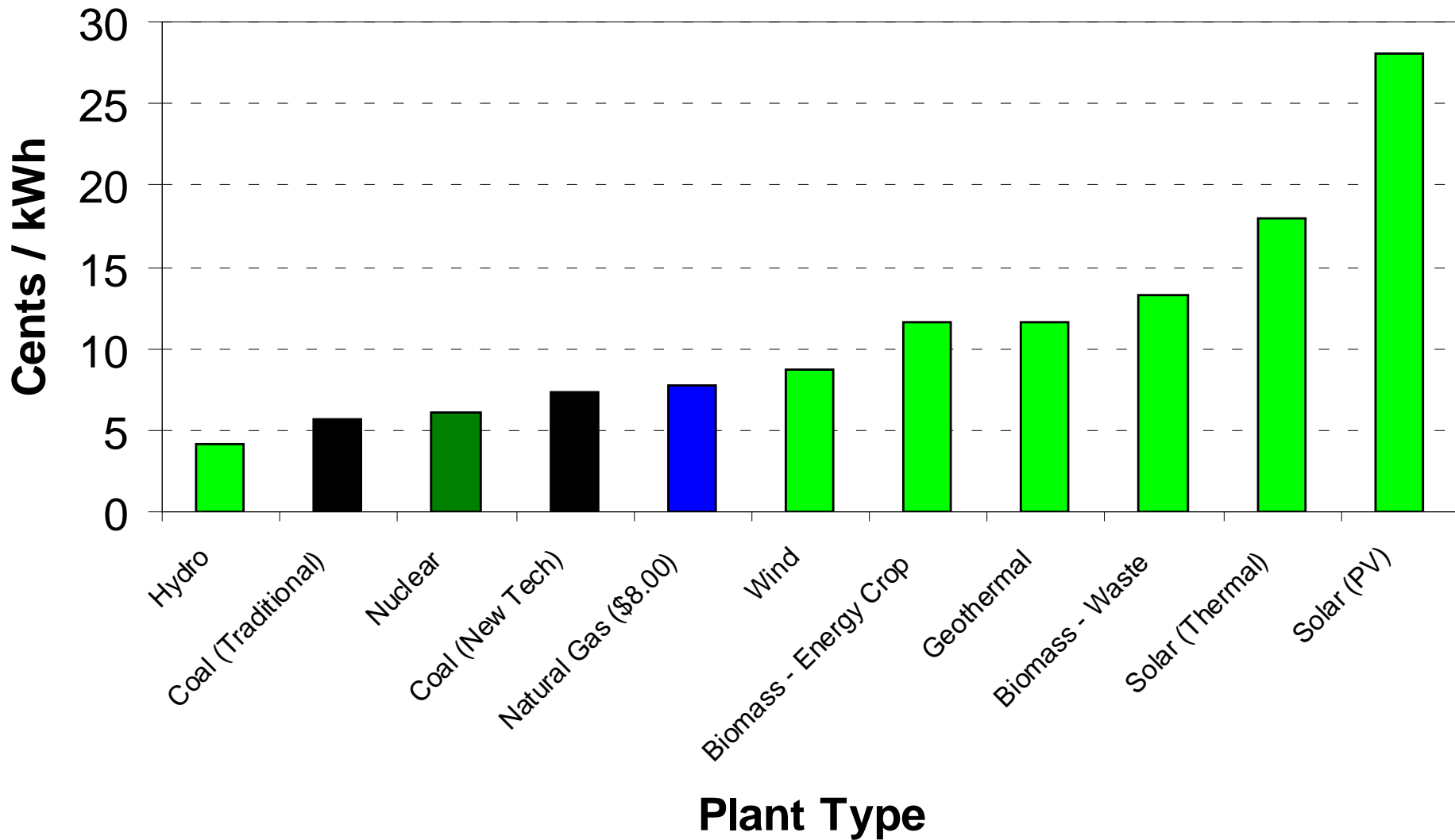
Sources of California Electricity



Sources of Electricity, USA



Technologies and Generating Costs





Questions or Comments?





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<http://www.socalgas.com/business/PowerGeneration/>