

## ETAAC's "Themes" – Consolidated, Version 3

### 1. Funding for innovation

- a. Incubation efforts to spur innovation and commercialization (Energy sector); statewide nonprofit for innovation and incubation (Bicker)
- b. CA advanced energy technology demonstration fund (Weyant)
- c. "CalCEF +" (Weyant)
- d. Revolving fund for technology demonstration projects (Rothrock)
- e. Support first MW installations that prove technical feasibility and enable project financing for emerging technologies (Bicker)
- f. Reorganize and recalibrate current subsidy programs to measure and incent GHG reductions (Bicker)
- g. Develop a California Carbon Trust ala UK's Carbon Trust: non-profit set up by gov't to support low-carbon technologies (Farrell)
- h. Partnership for New Generation of Energy Technologies in CA (Weyant)
- i. Technology certification: certify carbon reduction potential of new technologies (Hawley)
- j. Public funding for RD&D, including demonstration finance for "first megawatt" installations (Bicker)
- k. Leverage and provide coordination among California's many centers of innovation (Bicker)

*Closely related ideas:*

*- a,b,f,j,k,l (Energy Sector, Bicker, Weyant)*

### 2. Consumer participation

- a. Green fuels labeling (Farrell)
- b. Green biofuels index for biomass (Tuttle)
- c. California-grown program for wood products (Tuttle)
- d. California Carbon Star certification (Epstein)
- e. Carbon accounting for commercial and consumer purchasing and decision-making (Kammen)
- f. Energy Savings Accounts to support low-greenhouse gas investments (Kammen)
- g. Embodied GHG allowances for imported primary products (Lloyd)

*Closely related ideas:*

*- Green fuels labeling: a,b (Farrell, Tuttle)*

### 3. Better information about GHG reductions for business

- a. Educate small businesses about benefits of LED (Energy sector)
- b. State online directory of green building technology and service providers (Rothrock)
- c. Create and encourage "Do It Green" industry collaboratives (like "Build it Green.") (Farrell)
- d. Collection of climate data and development of software for climate-smart building design (Rothrock)
- e. Software for energy investments (Weyant)
- f. Training for building officials (Rothrock)
- g. Integrated Waste Management Board and air districts should educate stakeholders on potential for reduced emissions and increased energy production from landfills (Rothrock)

*Closely related ideas:*

*- software for energy investments / green building: d,e (Rothrock, Weyant)*

4. Facilitating energy efficiency implementation
  - a. Expand energy efficiency credit beyond three-year timeframe (Energy sector)
  - b. On-bill financing for energy efficiency projects (Rothrock)
  - c. Incentives and technical assistance for tenants and building owners to retrofit leased space for energy efficiency (Rothrock)
  - d. Green building fast-track permitting (Rothrock)
  - e. Improve policies to support Combined Heat and Power (Rothrock)
  - f. Fertilizer use and efficiency (Cory)
  - g. Industry/government partnership to improve industrial energy intensity (Rothrock)
  - h. Reduce emissions from cement production and encourage use of reformulated cement (Rothrock)
  - i. "California Climate Feebate Program," expanded from vehicles to other equipment and appliances (Lloyd)
  
5. Financial structures for Carbon Market
  - a. California Carbon Trust to fund "Carbon Moyer" style programs (Epstein)
  - b. Auction GHG allowances or tax GHG emissions (Farrell)
  - c. Price floor for carbon (Energy Sector)
  - d. Market CA carbon credits out of state as revenue source (Farrell)
  - e. Carbon valuation for early action (Energy Sector)
  
6. Financial structures for cleantech
  - a. Municipal Assessment Districts to reduce end-user up-front costs (Kammen)
  - b. Incentives and rebates to lower costs to municipalities for switching to LEDs (Energy sector)
  - c. Provide utilities with rate-based reimbursement for all R&D expenditures on emerging CO2 technologies (Energy sector)
  - d. California Clean Tech manufacturing incentive, including provision for worker training (Hawley)
  - e. Small business "greentech" tax incentives (Rothrock)
  - f. Extend the production tax credit and investment tax credit (Energy sector)
  - g. Rebates for load reduction using non-generation technologies (Rothrock)
  
7. Revolutionize the transportation sector (and fuels)
  - a. Prize competition (like CalSTEP proposal) as incentive to develop advanced biofuels (Hawley)
  - b. Incentives for rollout of alternative fueling infrastructure (Hawley)
  - c. Advanced biofuels incentives, including per-gallon incentives and revenue neutral "febate" (Hawley)
  - d. Revenue-neutral carbon-based fuel taxes (Lloyd)
  - e. "Fee-bate" to benefit purchasers of PHEVs funded by highly polluting automobile sales (Energy sector)
  - f. "California Climate Feebate Program," starting with vehicles (Lloyd)
  - g. Sell credits generated by sale of electricity as fuel to petroleum distributors; funds distributed to EV customers or utilities (Energy sector)

- h. Begin to Develop a *Sustainable Fuel Standard* (Kammen)
- i. Shift freight shipments to electric rail (Farrell)
- j. Roll back warranty requirements on batteries for PHEVs/EVs (Energy sector)
- k. Task force for vehicle batteries (Energy sector)
- l. Lignocellulosic technologies (plant residues, dedicated energy crops and waste materials) (BP)
- m. GHG performance standard for government and corporate vehicle fleets (Lloyd)
- n. Congestion mitigation pricing (Lloyd)
- o. Labor Laws: relax CA laws governing overtime pay to allow compressed workweeks and reduce commute times (Rothrock)
- p. Combination of feebate and government fleet targets aimed at creating demand for electric drive technologies (Lloyd)

*Somewhat related ideas:*

- *feebates for fuel: c,d (Hawley, Lloyd)*

- 8. Dramatically Increased Renewable electricity generation
  - a. GHG credit beyond RPS: Expand RPS to Environmental Portfolio Standard / Clean Energy Supply Standard (Energy sector)
  - b. Feed-in tariffs for renewable energy (Kammen)
  - c. Energy parks (Epstein)
  - d. Renewable Resource Zones / (Energy Sector)
  - e. Simplify permitting process for renewable energy generation projects (Energy sector)
  - f. Siting of energy parks should consider biomass availability (Tuttle)
  - g. Link biomass objectives with wildfire risk management (Tuttle)
  - h. Biomass and biofuels (Cory)
  - i. Continued scale-up of solar power deployment on new and existing homes, businesses and state structures (BP)
  - j. Dairy digesters (Cory)
  - k. Change gasification law to support waste diversion (Energy sector)
  - l. Waste conversion permitting and siting (Rothrock)
  - m. Improvement of regulatory processes and standards for landfills to increase capture and utilization of gases (Rothrock)

*Closely related ideas:*

- *Renewable Resource Zones / Energy Parks (Energy Sector, Epstein); could also include Tuttle comments about siting of energy parks*

- 9. Improving Energy grid/transmission
  - a. Green grid /community power (BP)
  - b. Information sharing for smartening the energy grid; smart grid as enabling technology (Energy sector)
  - c. Investigate needed upgrades to distribution infrastructure due to DG and PHEV penetration, and accelerate ratemaking (Energy sector)
  - d. Improve transmission for renewable energy (Energy sector)

*Related ideas:*

- *smart grid / green grid: a,b,c (Energy Sector, BP)*

- 10. More Energy storage
  - a. Large-scale pumped hydroelectric storage facilities (Energy sector)

- b. Utilities commit to purchase electricity storage capacity on annual basis (Energy sector)
- c. Plug-in Hybrids as storage (Energy Sector)

#### 11. Carbon storage

- a. Air capture of CO<sub>2</sub> (assumes CO<sub>2</sub> storage available) (Farrell)
- b. CCS (Energy sector)
- c. CCS (Cory)
- d. CCS for natural gas and biomass (Epstein)
- e. Reforestation and riparian habitat (Cory)
- f. Forest management, Reforestation, Avoided Deforestation (Tuttle)
- g. CCS Deployment strategy (BP)
- h. More funding to LLNL and UC research projects on CCS (Energy sector)
- i. Insurance/liability risk for CCS (Energy sector)
- j. Use of algae to make biofuels as carbon storage strategy (Energy sector)
- k. Support “capture-ready” requirements for all new generation facilities (Energy sector)

#### *Related ideas:*

- CCS: *b,c,d,g,i* (Energy Sector, Cory, Epstein, BP) “Capture-ready” requirements could be included as well (*k*)

- Forest management, reforestation, avoided deforestation, riparian habitat (Cory, Tuttle)

#### 12. Land use

- a. Policy collaborative, like CalFED (Farrell)
- b. Smart growth: Link state infrastructure spending to regional smart growth plans (Hawley)
- c. Counter trend towards forest conversion by bundling carbon value with other incentive programs to keep landowners on the land (Tuttle)
- d. Account for forest loss as an emission (Tuttle)
- e. Account for carbon “embedded” in water in planning processes or directly via pricing (Kammen)
- f. Adopt established forest carbon metrics and carbon stock accounting principles (Tuttle)

#### 13. Other

- a. Broad state participation to achieve GHG emission reduction goals: State agencies commit to reduce GHGs and report every 6 months (Rothrock)
- b. Improved analytical basis for planning: establish GHG inter-agency regulatory task force and GHG Policy Institute (Rothrock)
- c. Climate Adaptation Roundtable: Master planning and coordination for climate change adaptation to facilitate discussion and debate (Rothrock)
- d. Use carbon credits from Demonstration State Forests to offset CDF mobile equipment emissions (Tuttle)