



November 27, 2007

**Comments on the Economic and Technology Advancement  
Advisory Committee's (ETAAC's) Discussion Draft –  
November 15, 2007**

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I thank the members of ETAAC for providing this initial overview of a wide range of proposed measures to reduce greenhouse gases (GHG). These comments respond to ETAAC's opinions concerning the Market Advisory Committee's report in June 2007, as given in Section 8 of ETAAC's discussion draft report.

In addition, I have attached a VHC working paper, [A Comparison of Three Cap and Trade Market Designs and Incentives for New Technologies to Reduce Greenhouse Gases](#), which addresses the market design issues in more detail and compares incentives for the development and deployment of new technologies under each of three potential California market designs.<sup>1</sup>

These comments respond to the following areas covered in Section 8 of ETAAC's draft report:

- Scope of the Carbon Cap
- Point of Electricity Regulation
- Allowance Allocation Method
- Use of Auction Revenues
- Offsets
- Banking
- Borrowing
- Cost Containment Mechanisms.

**Scope of the Carbon Cap**

The draft ETAAC report states that some "buyers of credits may escape the pressure to innovate by purchasing GHG emission reduction credits, while sellers may profit from innovations resulting in excess GHG emission reductions." Given that significant

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<sup>1</sup> Van Horn, Andy and Ed Remedios. [A Comparison of Three Cap and Trade Market Designs and Incentives for New Technologies to Reduce Greenhouse Gases](#), VHC Working Paper. November 15, 2007.  
[www.vhcenergy.com](http://www.vhcenergy.com)

cumulative global reductions are necessary and that achieving the desired GHG reductions will be costly, it is altogether appropriate that verified GHG emission reduction credits are purchased, wherever and whenever it is cost-effective to do so.

Not all buyers are capable of innovating and not all potential sellers will be successful. However, creating a market for the purchase and sale of credits should not be viewed as escaping the pressure to innovate. Indeed, the broader the scale of the market, including innovations and offsets from overseas, the more likely that innovation will occur and help to solve this global problem. Moreover, the more commercial contact that California businesses and industries have with entities in other states or countries, the more likely we are to build markets for selling California's products and services, as well as benefiting from lower costs of GHG compliance.

Clear price signals and market liquidity are also more likely in a broad-based market, where a greater diversity of reduction measures can be applied and more capital will be attracted to develop new technologies.

### **Point of Electricity Regulation**

The point of electricity regulation is the basic, critical element of market design. The attached VHC working paper considers how well each cap and trade design would meet several basic objectives of environmental markets, including the capability to provide the incentives needed for the development, deployment and utilization of new and innovative technologies. The paper specifically addresses the question: ***Which cap and trade market design will provide the best incentives to develop and utilize advanced technologies?***

In the paper the basic objectives of a cap and trade market are identified. Then, the capabilities to satisfy each objective are compared for three potential cap and trade designs: source-based, load-based and first-seller. ***These comparisons show that new technologies would realize higher values under source-based and first-seller/deliverer market designs than under a load-based system. The comparisons also show that a load-based regulatory system would be more complex, costly and inaccurate than either a source-based or a first-seller system. A further conclusion of the analysis is that the adoption of an integrated, source-based market design covering many sources in many states will provide the greatest opportunities for the innovation and advancement of new technologies, as well as for the success of a regulated cap and trade market for greenhouse gases.***

In order to encourage innovation, it is necessary to send proper market signals to consumers and other market participants. Proper market signals should internalize the costs of GHG control, and such market signals can best be generated under a source-based market design and under the first-seller design, not under a load-based design. Moreover, neither utilities nor their regulators are noted for innovation and technology development, apart from the Electric Power Research Institute, which is an industry collaboration focused on research. Hence, California should select a

market design that could actually behave like a market, i.e., a tried-and-tested source-based design or, alternatively, a first-seller design, instead of a load-based design that would be micro-managed by regulatory bodies and does not send clear market signals.<sup>2</sup> Finally, there is no doubt that making the transition to a national source-based market from either a source-based or first-seller market design would be faster and less costly than undoing a complex and unwieldy load-based approach.<sup>3</sup>

### **Allowance Allocations**

There are pros and cons to all allocation methods, which have not been thoroughly analyzed for affected California entities. Many factors, not discussed in the ETAAC draft, should be considered in devising an allocation method.

### **Use of Auction Revenues**

As ETAAC indicates, there are a variety of useful ways to utilize auction revenues. Here again, there has been little or no analysis comparing the effects of applying California's auction revenues in different ways to the development and deployment of new technologies.

### **Offsets**

Offsets should be an integral part of California's response to the global GHG problem. Contrary to the assertions by ETAAC, the use of offsets and the support of other GHG markets in the U.S. and abroad will not "weaken price signals for would be innovators." In fact, the development of projects to generate offsets will expand the markets for California technologies and services and create stronger price signals. At the same time, offsets will reduce the initial costs of GHG reductions and provide time to develop new technologies. Limits on offsets will only inhibit market functions, and, ultimately, slow global GHG reductions and lessen the size of potential markets for California entrepreneurs. Placing geographic limits on offsets will not enhance California's economic growth nor should the lack of arbitrary limits discourage viable offset projects in California.

The following points summarize the important role of offsets in reducing GHG:

- 1) All cost-effective global reductions will be needed, regardless of location, to stabilize global CO<sub>2</sub> concentrations at ~450 ppmv. This global problem requires a global solution.

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<sup>2</sup> Van Horn, Andy and Ed Remedios. A Comparison of Three Cap and Trade Market Designs and Incentives for New Technologies to Reduce Greenhouse Gases, VHC Working Paper, November 15, 2007. [www.vhcenergy.com](http://www.vhcenergy.com)

<sup>3</sup> The experience of Great Britain demonstrated the problems in making the transition from a load-based approach to the source-based European Union Emissions Trading Scheme.

- 2) The net present value of GHG reduction costs will be minimized if the lowest-cost options are taken first.
- 3) Offsets will encourage broader participation and acceptance of GHG reduction programs.
- 4) Private capital and innovation will respond best to increased market opportunities.
- 5) Only markets can effectively cross national boundaries.
- 6) Commercial arrangements concerning offsets will increase California's contacts in foreign markets, broadening the customer base for California technologies and products.
- 7) Trading **certified** emission allowances from projects providing "offsets" will
  - a. Expand the number of GHG market participants,
  - b. Achieve greater global GHG reductions,
  - c. Stimulate innovation in non-controlled sectors,
  - d. Increase international economic cooperation,
  - e. Encourage global development of new technologies,
  - f. Reduce the premature retirement of existing assets, giving time to develop better technologies,
  - g. Provide market flexibility with a larger pool of available allowances,
  - h. Lower the costs of compliance for Californians,
  - i. Avoid locking-in too much of today's current best technologies,
  - j. Need compatible market designs in different regions,
  - k. Send a global market price signal, creating roles for brokers and middlemen,
  - l. Demonstrate California's leadership in a positive manner,
  - m. Open new markets for California products & clean technologies, adding jobs for Californians,
  - n. Incentivize entrepreneurs, and
  - o. Terminate the huge growth in GHG emissions from developing nations.
- 8) Offsets should be a good example of "thinking globally and acting globally."

## **Banking**

Banking should be part of California's market design. The time periods for compliance and the uses of banked allowances should be analyzed quantitatively, but to date, they have not been analyzed in a quantitative fashion. Particularly important is the effect of several sequential years with low hydro power production. The role that banking can play in smoothing compliance costs and reducing market volatility should be examined under alternative future market conditions.

## **Borrowing**

ETAAC points out that borrowing might allow capped entities to delay compliance. The need for borrowing should also be analyzed in the context of future market conditions and the likely availability of new technologies to meet declining emission caps between now and 2050. The relationship of the compliance period and the possible need to borrow should be better understood, particularly in the early years of a GHG reduction program, when allowance banks have not been built up.

## **Cost Containment Mechanisms**

In general, market rules must be simple and well-understood. Creating fixed safety valves or artificial price ceilings could inhibit investment and innovation. The role of ETAAC's proposed California Carbon Trust, as well as other cost containment mechanisms, should be evaluated under different market scenarios and circumstances, before determining whether or not such mechanisms will be harmful or beneficial.

## **Concluding Remarks**

This draft report provides California with a running start toward the research, development, demonstration and commercialization of new and innovative technologies. The honing of these initial concepts and ideas and, ultimately, the commercialization and sale of new technologies is a challenge that California is uniquely qualified to undertake.