

Appendix 1: Staff Proposal for 15-day Changes to Address Electricity Sector Allowance Allocation

The Initial Statement of Reasons (ISOR) included the following discussion of issues related to allocation of allowances within the electricity sector:

This diversity of resources and emissions-reduction opportunities across utilities creates challenges for defining an allowance allocation method that provides proper incentives, is affordable for all utilities, and is considered equitable. Approaches proposed by stakeholders, the California Public Utilities Commission (CPUC), and the California Energy Commission (CEC)¹ have suggested balancing historical emissions and electricity sales to allocate allowances. By considering historical emissions, allocation can recognize the diversity of generating resources across utilities. Recent investments to reduce emissions can also be rewarded by using historical emissions that, for example, preceded the enactment of AB 32. By considering retail sales, allocation can reflect differences in the amount of electricity delivered by each retail provider. The sales metric would reward utilities that achieve lower emissions intensities, consistent with the long-term goal of reducing GHG emissions from the sector overall.

To date, staff's analyses of options based on historical emissions and sales have not identified an allocation method that provides appropriate incentives for emissions reductions and is considered affordable and effective for all utilities. The contracts for high-emitting resources pose a particular challenge. Some contracts expire as soon as 2016, providing substantial opportunity for emissions reduction prior to 2020. Other commitments run past 2020, limiting the opportunity to reduce emissions from the existing resource in the next 10 years, even as substantial investments are made to acquire new low-emitting resources. Simply considering historical emissions and sales does not adequately reflect these divergent circumstances. Also, the allocation method must avoid inadvertently providing an incentive to continue using high-emitting resources, but rather must provide incentives to ensure that all cost-effective efforts are undertaken to achieve necessary emissions reductions.

Staff is continuing to examine options and obtain feedback. With input from stakeholders, staff's analysis is examining additional factors that could be considered beyond historical emissions and sales, including, among other things, the dates of contract expirations, the rate of achievement of renewable and other low-emitting resources, incentives for early reductions in commitments for high-emitting resources, and other program design features. Staff will continue to work with stakeholders and will review comments received during the comment period on this proposal. Staff may bring a more detailed proposal to the Board based on this ongoing effort, and will circulate any such proposal for review in a subsequent 15-day comment period. [ISOR, pp. II 34-35]

¹ The California Public Utilities Commission and the California Energy Commission presented recommendations to ARB about the design of a cap-and-trade program for the electricity sector in October 2008. Those recommendations are included as Appendix M of the ISOR.

Since publishing the ISOR, staff has discussed the issue of how to allocate allowances within the electricity sector with stakeholders, including intensive discussions with an informal electricity distribution utility working group, the Joint Utility Group (JUG). Based on analyses of emissions reporting data and considering the overall allowance allocation approach for the program, staff has developed a recommendation for the policy objectives for the electricity sector allowance allocation. Also, using preliminary data, staff has evaluated a range of methods for allocating allowances to achieve the recommended policy objectives. Based on this evaluation, staff has identified multiple methods that show particular promise for satisfying the proposed policy objectives. Staff finds that these methods, described below, provide a basis for finalizing the allocation of allowances within the electricity sector. The details of the final allocation system will be developed following additional data review and analysis.

Policy Objectives

California's energy and climate policies have helped keep the state's GHG emissions from the electricity sector significantly below the national average, and continued implementation of energy efficiency, renewable electricity, combined heat and power, distributed generation, and the emissions performance standard will lead to further decreases in emissions from the sector through 2020.² As shown in Figure 1, the statewide average emissions intensity of electricity supplied to California (including imports) are forecast to decline substantially by 2020 based on these existing energy and climate policies.

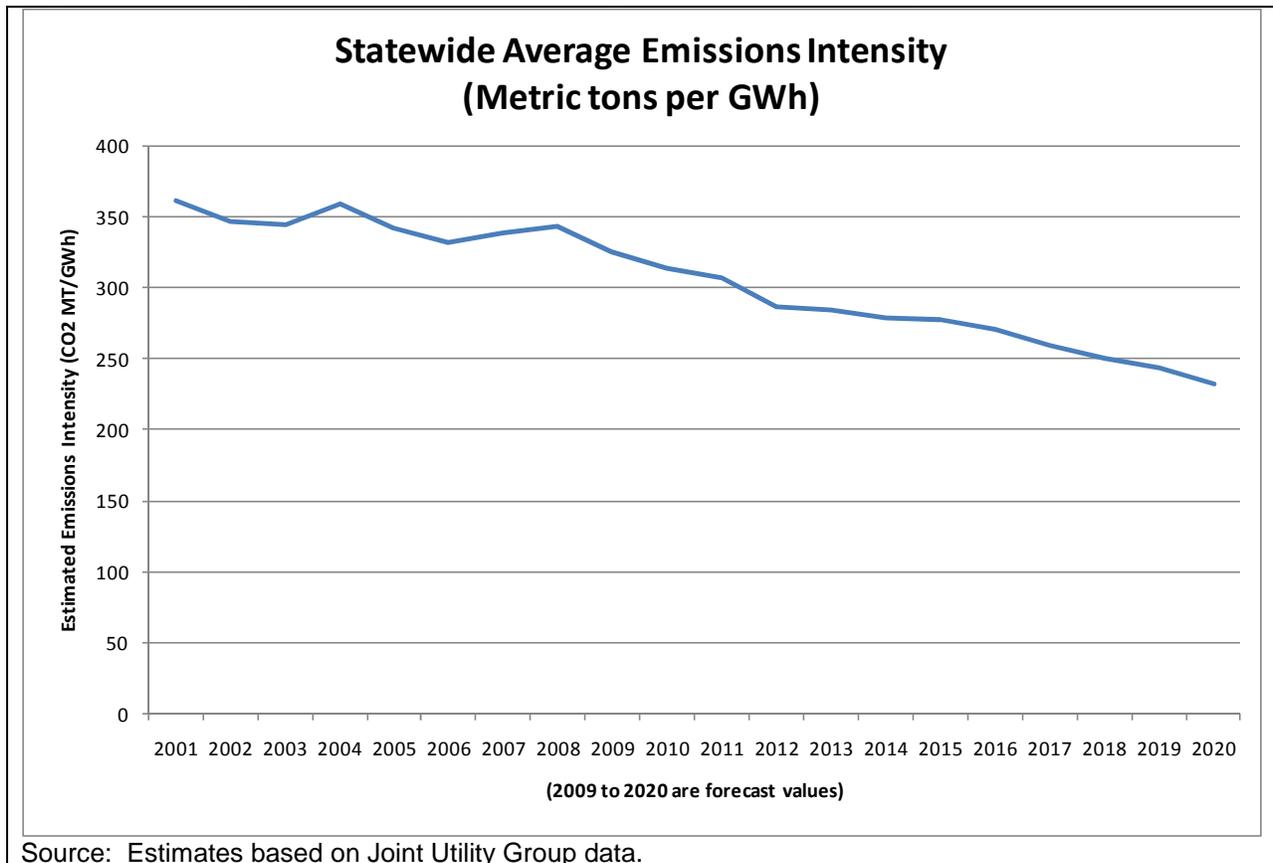
Staff proposes an allocation system that builds on these policies, and that will provide further incentives to the distribution utilities to meet or exceed the emissions reductions they expect to achieve through implementation of these policies. The proposed allocation system helps reinforce the emission reductions associated with those other policies.

As discussed in the ISOR, staff has proposed providing free allowances to the electricity sector for two primary reasons: to support policies and programs that are reducing GHG emissions from the electricity sector; and to ensure that electricity ratepayers do not experience sudden increases in their electricity bills associated with the pricing of carbon emissions in the cap-and-trade program. To support these two purposes for free allocation, staff recommends the following policy objectives for the allocation of allowances within the electricity sector:

- reflect the expected ratepayer "cost burden" associated with the cap-and-trade program emissions costs that is anticipated to be borne by the ratepayers for each distribution utility;
- incorporate the expected benefits of energy efficiency investments, so that energy efficiency accomplishments are rewarded; and
- recognize early action by incorporating the use of State-defined eligible renewable energy from 2007 to 2011.

² A summary of California's energy and climate policies is presented in *California's Clean Energy Future. An Overview on Meeting California's Energy and Environmental Goals in the Electric Power Sector in 2020 and Beyond*, California Energy Commission Report CEC-100-2010-002, September 2010, at: <http://www.climatechange.ca.gov/energy/index.html>.

Figure 1: Anticipated Reductions in Average Emissions Intensity



Source: Estimates based on Joint Utility Group data.

The proper assessment of ratepayer “cost burden” that is being offset through the allocation is clearly an important aspect of the approach. Staff proposes that the estimate of the ratepayer cost burden include the full range of costs expected to be passed through to electricity ratepayers as a result of the pricing of GHG emissions in the cap-and-trade program, including the emissions costs for the following:

- Emissions from owned/committed coal-fired resources.
- Equivalent emissions price premium from non-emitting resources priced at market.
- Anticipated emissions costs for Qualified Facilities (QF) fossil fuel resources purchased under the terms of the pending PUC settlement.
- Emissions from gas-fired generation, residual purchases (evaluated as gas fired), and unspecified imports.

Each component has associated with it a cost for GHG emissions. By reflecting the ratepayer cost burden in the allocation method, the allowance allocation can be designed with the goal of ensuring that the each utility’s allowance allocation is sufficient to offset the ratepayer cost burden for the ratepayers of each utility in each compliance period.

Preliminary Evaluation

ARB staff evaluated the ability of a range of allowance allocation methods to achieve the recommended policy objectives. These evaluations used preliminary data to demonstrate how

the key components could be estimated, including: ratepayer cost burden; energy efficiency; and early action.

The starting point for determining the ratepayer burden was the resource plans each utility filed with the California Energy Commission as part of the 2009 Integrated Energy Policy Report proceeding.³ The resource plans were adjusted to reflect achieving a 33% renewable energy mix by 2020 for each utility.⁴ The ratepayer cost burden, as described above, was developed based on these adjusted resource plans for each year through 2020.

The evaluation of energy efficiency achievements was based on the past performance and expected execution of aggressive energy efficiency programs by each utility.

ARB staff examined a range of methods for recognizing early action. Understanding that the concept of “early action” can be interpreted in various ways, ARB staff identified investments in qualifying renewable resources as the preferred metric of early action. Furthermore, ARB staff focused on recent investments in these resources, examining recent and planned investments from 2007 to 2011. By focusing the early action metric on these investments during this period, the approach is designed to reward action taken specifically to reduce GHG emissions from the electricity sector.

ARB staff acknowledge that there are differing opinions regarding how to measure early action. In particular, some distribution utilities have substantial portfolios of non-emitting hydro-electric and nuclear resources that have been developed over many years. ARB staff concluded that these resources do not themselves indicate early action taken in response to AB 32. Also, recognition of these resources does not contribute to the other policy objectives of the allowance allocation. Consequently, these resources are not recommended as part of the early action metric.

Using preliminary data, ARB staff found that multiple methods can achieve the policy objectives, including the ability to allocate sufficient allowances to cover the expected ratepayer cost burden. The energy efficiency and early action metrics enabled the allocation to recognize these efforts as well. Figure 2 shows the preliminary estimates of allowance allocations for two methods based on the initial evaluations. The evaluation also showed that the allocation results can vary based on the precise metric used to recognize early action (i.e., the small differences between the two methods shown in the figure, labeled as Method 5R and Method 6). Consequently, ARB staff recommends that prior to defining the final allocation algorithm, the final dataset be developed for all the utilities and the most promising candidate methods be evaluated using the final data.

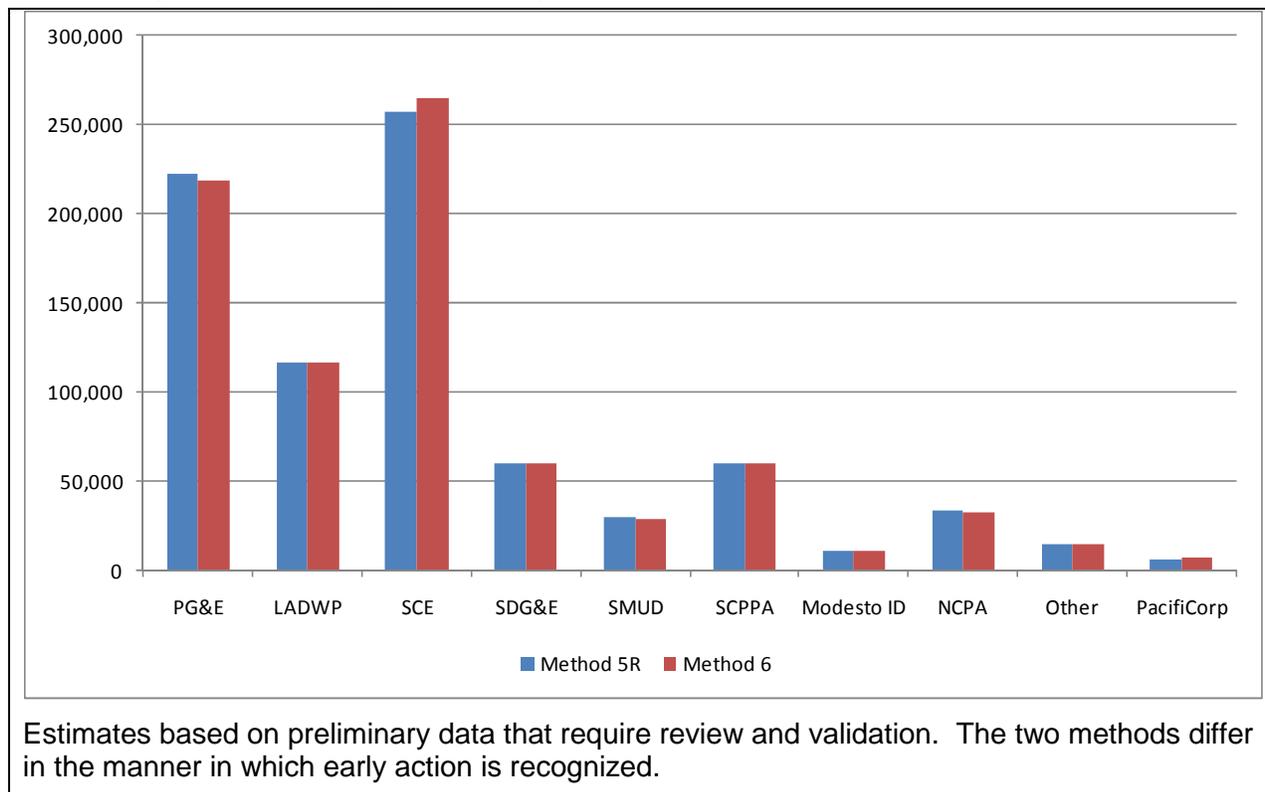
While developing this proposed approach to allocating allowances to the electricity sector, ARB staff have been mindful that Congress may again consider developing a cap-and-trade program to reduce U.S. GHG emissions. The allowance allocation method proposed here may be examined as a model for national allocation. ARB staff considers it important that the appropriate lessons be taken from the proposed method. In particular, the proposed policy objectives and methods rely on a comprehensive suite of electricity sector policies to achieve the goals of AB 32. All the California utilities and their ratepayers are expected to achieve the full suite of requirements. Applying these concepts nationally must start with requiring all

³ The smaller distribution utilities in the State are not required to submit these data to the Energy Commission. ARB staff are working with the smaller utilities to develop the data needed to apply the methods to those utilities.

⁴ The data used in evaluating different allocation options were developed and checked by the members of the JUG. Before the final allocation method and numbers are developed, ARB staff will collect and review the data and evaluate the allocation methods against the final data.

utilities to achieve similar stringent requirements, so that early action by California utilities is protected and rewarded. Allowance allocation at the national level can then be used to reinforce the full suite of stringent requirements.

Figure 2: Preliminary Allowance Allocation Estimates for Two Example Allocation Methods (000 Metric Tons, 2012-2020)



Recommendation

ARB staff recommends the following steps to finalize the allowance allocation method for the electricity sector.

Data: ARB staff recommends working with stakeholders to verify the data needed to evaluate and execute the allowance allocation methods. ARB staff recommends that the dataset developed by the JUG be the starting point for the data work, but that ARB staff independently validate the data and their sources.

Sector Allocation: The ISOR recommends that a set number of allowances are set aside each year for the electricity sector, starting with the 2012 allocation at 90% of 2008 electricity sector emissions and declining linearly to 85% of that value by 2020. Using the mandatory reporting data, the 2008 emissions from electric generating facilities and imports were 98.9 million metric tons (MMT), so that 90% would be 89 MMT. Additionally, a portion of the electricity produced at facilities that identified themselves as cogeneration facilities was purchased by electricity distribution utilities. Using publicly filed data for 2008 and a heat rate based on the pending PUC QF settlement, the estimated equivalent emissions from QF purchases is 9.67 MMT, so that 90% of this value is 8.7 MMT. The recommended 2012 allowance allocation to the electric sector is therefore 97.7 MMT (89 MMT plus 8.7 MMT). The recommended sector allocation declines linearly to 83 MMT in 2020.

Utility Allocation: ARB staff recommends that the promising allocation methods developed based on the evaluation using preliminary data be refined and evaluated using the final data developed by ARB staff. ARB staff recommends that the method incorporate the three main elements discussed above: ratepayer cost burden; energy efficiency accomplishment; and early action as measured by investments in qualifying renewable resources.

Updating: ARB staff recommends that allowances be allocated to individual utilities at the start of the program for 2012 to 2020. The allocation will not be automatically updated, so that each utility would know its allocation for the nine year period and could plan accordingly. If needed, the periodic program review could recommend adjustments to the allocation during the program.

Public Process: ARB staff recommends that the process for developing the final method for allocating emission allowances to electricity distribution utilities include at least one public workshop at which the data and methods are reviewed and public comment is received.