CLEAN Resource Hub Implementation Guide
CLEAN Program Pricing

Introduction

A CLEAN (Clean Local Energy Accessible Now) Program is designed for efficient procurement of clean renewable energy by simplifying the process and focusing on local production that can be available without delay. The fundamental feature of a CLEAN Program is a fixed-price, long-term standard contract for small-to-medium scale energy generation projects to sell energy directly to a utility. This type of contract provides revenue certainty for the seller while also providing price certainty to the utility, ratepayers and policymakers.

Determining the appropriate fixed price paid for energy is, arguably, the most important consideration in designing CLEAN Programs. If the price is set too low, there will be insufficient participation and the program goals will not be met. If the price is set too high the buyer will overpay for energy, leading to a "gold rush" of faster and greater development than planned, often followed by a bust as demand is saturated and business dries up.

The basic structure of a CLEAN pricing mechanism is a combination of how initial prices are set at the start of the program and the method for adjusting the price to be offered for future contracts in subsequent stages of the program. Historically, the most widely used mechanisms to set initial energy prices have been administrative approaches focused on the value of projects, the cost to build and develop them, or market price discovery through auctions. However, such prices are only optimal if the price matches actual market requirements. Each approach has advantages and disadvantages, as will be discussed throughout this Guide.

The major pricing approaches are:

- *Development Cost-based Pricing* – Price is set so that the project developer will make enough profit on the project to justify investment.
- *Full Value-based Pricing* – Price is set to the full value that the project and the generated energy provide to buyers and other affected stakeholders.
- *Market-based Pricing* – Price is set at a level determined by sellers' offers in market mechanism such as an auction, market price tracking, or comparable activity.

Regardless of the initial price setting approach, pricing also changes over time, sometimes quite quickly as a market develops. Thus, price adjustment methodologies are at least as important as setting the initial price. Price adjustment refines initial pricing and maintains appropriate pricing as the program moves forward.

The primary types of price adjustment methodologies are:

- *Review and Recalculate* – Prices are reviewed on set time periods and recalculated according to the original pricing approach.

- *Scheduled Degression* – Assuming that the cost of clean local energy should go down over time, the prices offered to successive contracts are reduced on a pre-determined schedule.
- *Market Responsive Pricing (MRP)* – Prices are adjusted (up or down) based on the volume of market response over time.

The choice of pricing mechanism is specific to each situation and is necessarily influenced by regulatory options available, political support or constraints, and the pre-existing market conditions. These factors are explored in the following sections, concluding with general recommendations.

Because procurement programs are major drivers of market demand, the pricing offered will influence the market. Offering the correct price is necessary to ensure that the sufficient supply is made available to meet program goals cost effectively. It also should be kept in mind that value is as important as price, and without full consideration of the value associated with the energy, it will not be possible to determine the net cost and benefits of the CLEAN Program.

Table of Contents

Initial Pricing Approaches

Development Cost-based Pricing

Historically, the most widely used approach to setting CLEAN Program prices has been based on the cost of developing the energy generation projects. The appropriate regulatory agency conducts a process to determine all of the current costs of development and then sets a "reasonable profit" rate for the developer. The resulting revenue amount required for development then determines the fixed price per kWh that is paid to project owners over the length of the contract.

This approach was popularized by the tremendous success of the German feed-in tariff / CLEAN program which deployed gigawatts of clean local energy within a few years. Other examples include the successful procurement programs in Ontario, Canada; Rhode Island; and Gainesville, Florida.

- Ontario, Canada: http://fit.powerauthority.on.ca/
- Rhode Island: https://www.nationalgridus.com/narragansett/business/energyeff/4_dist_gen.asp
- Gainesville, Florida: https://www.gru.com/TabID/3824/Default.aspx

Policy Design Concepts

Development Cost-based Pricing is, in principle, similar to traditional rate setting for an investor owned utility operating as a regulated monopoly, in which a public commission approves operating costs and an allowable investor rate of return. Under a CLEAN procurement program, however, the approved pricing is provided to anyone able to deliver qualifying energy to the utility.

The core philosophy behind this approach is that the citizens want to have a certain amount of clean energy deployed under a CLEAN program in the near term. Thus a price must be offered that is certain to attract investment in new generation projects. The subtext is that in order to make sure clean energy gets deployed and meet societal objectives, ratepayers are willing to pay prices that are potentially "above market" or even above the quantifiable value of the energy.

Deployment certainty is the core justification for implementing this type of pricing. If sufficient political will is present to create a CLEAN Program and there are defined goals for clean energy deployment, it makes little sense to spend the time and resources to launch a program that has a risk of attracting no participation.

However, the primary challenge in implementing this approach is in accurately determining the development cost and resulting price. If the program results in significantly overpaying for energy - in reality or in perception - then the program risks a backlash from ratepayers and policymakers. Stakeholders that are narrowly focused on costs and consumer energy rates will often object to the risk of overpayment. Thus, it can be politically difficult to convince policymakers that there is enough political will to pay "above market" prices to reach clean energy goals. However, these concerns can be allayed with a Market Responsive Pricing mechanism as described below.

It is important to note that where a local market is immature or volatile, policymakers may not be able to discover the optimal price to encourage development without overpaying for the level of procurement proposed. Using Development Cost-based Pricing for a pilot program would be an effective method for market price discovery.

Key Considerations

The following are some key considerations in designing a program around Development Cost-based Pricing.

Procurement Targets

The clean energy procurement goals of the program will impact development costs and thus make it more challenging to determine appropriate pricing. The program size, in MW of capacity for example, relative to the local market potential is a major factor to consider in development costs. A small number of opportunities may exist for unusually low cost generation, but as more MW are sought, more mainstream costs will apply. At the same time, a larger and more robust program attracts more competition, and efficiencies are gained through experience and scale.

Also, when targeting specific market segments, different sizes and types of installations have different costs. Rooftop solar systems under 100 KW, for example, are considerably different than ground mounted multi-MW systems. If not specifically targeted, a "one size fits all" price will drive interest toward only the most profitable option under the program criteria.

Similarly, targeting specific technologies will require pricing that reflects the costs of generating power by that means or from that energy source. Wind, solar, hydro, and biogas each have different costs and different energy value.

Calculation Methodology

The choice of what numbers to include in the cost calculation is critically important. Information on costs can come from a variety of sources, including public databases, academic studies, industry reports, and direct surveys of local developers.

Examples:

- Lawrence Berkeley National Lab
  - "Why are Residntial PV Prices in Germany So Much Lower than in the United States?" http://emp.lbl.gov/sites/all/files/german-us-pv-price-ppt.pdf
  - "An Evaluation of Solar Valuation Methods..." http://emp.lbl.gov/sites/all/files/lbnl-5933e_0.pdf
- California CSI Database: http://www.californiasolarstatistics.ca.gov/current_data_files/
- Rhode Island: https://www.nationalgridus.com/narragansett/business/energyeff/4_dist_gen.asp
- NREL "Innovative Feed-In Tariff Designs that Limit Policy Costs": http://www.nrel.gov/docs/fy11osti/50225.pdf

Regardless of where the data comes from, it is important to have a transparent stakeholder process for making the calculations. Development Cost-based pricing runs a high risk of political backlash if policymakers use "confidential market information" from unnamed sources.

Changing Costs

Since costs change over time and experience, any Development Cost-based system must be prepared to adjust accordingly, as discussed in the following section on Price Adjustment Mechanisms. For relatively small programs and simple calculations, the pricing can be re-calculated administratively, either after a set number of months, or after a set amount of contracted capacity.

For Germany, the program adopted a Scheduled Degression type of adjustment, as described below, after setting the initial price based on Development Cost.

Conclusions

In the US, due to the very common political emphasis on lowest perceived cost, pure Development Cost-based Pricing has fairly limited potential use. In smaller programs, it make be possible to introduce this as the initial approach, often called a "pilot program", in order to kick start the local renewables market and try out a new policy mechanism. The trend in the US is towards the Value-Based and Market-Based approaches. However, using Development Cost-based Pricing for a pilot program can be an effective method for market discovery. Further, this pricing method may be paired with a Market Responsive Pricing method to allay concerns about overpaying for renewable energy.

Full Value-based Pricing

As mentioned above, the political tendency towards lowest perceived cost and eliminating subsidies for renewable energy has spurred interest in Full Value-based Pricing. The core of this approach is that the utility's ratepayers should pay the clean energy producer only as much per kWh as it would have cost to otherwise procure that kWh, including all the attributes of the clean energy. This is often equated with the term "avoided cost" or "marginal avoided cost".

However, "Full Value" pricing is generally meant to include values or avoided costs that have not been traditionally associated with just the physical generation and delivery of the energy. These additional "non-energy" costs and benefits can include factors such as reinvestment of money spent on energy into local economic activity and job creation, or avoiding indirect or "externalized" costs such as environmental impacts, health, and air quality compliance. At a minimum, when considering energy in the context of a Renewable Portfolio Standard or other GHG policy structure, the pricing must account for the value that renewable energy provides in meeting these mandates.

Some notable examples of CLEAN Programs that implement a variant of Full Value-based Pricing include:

- California's AB 1969 (2006) CLEAN Program
    - http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/feedintariffs.htm

- Palo Alto, CA CLEAN Program (2012)
  - http://www.cityofpaloalto.org/gov/depts/utl/business/sustainability/clean.asp
- Minnesota bill H.F. 729 (2013)
  - Omnibus jobs, economic development, housing, commerce, and energy bill
- Los Angeles Dept of Water and Power (LADWP) LA CLEAN Program (2013)
  - https://www.ladwp.com/fit

The term "Value of Solar" tariff or program is commonly used to refer to this type of pricing approach also, whether it applies to a CLEAN Program or another type of procurement mechanism.[1]

Policy Design Concepts

The fundamental principle underlying the Full Value-based Pricing methodology is that developers of new generation facilities receive no more and no less than the actual value provided by their energy production. In this way, ratepayers are not paying more than the value they receive for clean energy, consumers who don't generate their own power are not "subsidizing" those able to generate and sell energy, and broader community benefits can be recognized and incorporated in the price offered.

The first design question is which value factors to include in the definition of Full Value. The factors that are clearly related to cost of the production and delivery of energy are most easily justified and quantified, including:

- Marginal cost of replacement energy
- Time of delivery value
- Renewable Energy Certificates
- Avoided line losses
- Avoided transmission and distribution grid investments
- Supply flexibility
- Local capacity requirements / avoided grid congestion

Additional and potentially more controversial factors are the "societal benefits" or "externalized costs" which have not traditionally been considered in energy supply decisions or included in charges to ratepayers. These include:

- Reduced air pollution
- Reduced environmental (land) impact
- Reduced water usage
- Economic boosts through private investment
- Increased employment
- Increased public revenues (sales, income, and other taxes)

The choice of value factors can also be influenced by the difficulty or complexity in quantifying the value. Each included factor likely needs to be supported with a politically and publicly acceptable calculation methodology that does not require excessive

[1] http://www.rmi.org/Content/Files/eLab-DER_cost_value_Deck_130722.pdf

administrative resources to calculate. Some of these factors can also be specific to a generation facility's location, requiring calculation on a project-by-project basis.

See the Clean Coalition's Locational Value Guide for explanations and examples of how some of these factors are determined.

The primary argument for using a Full Value-based approach is that ratepayers and the public are not overpaying for energy while developers are offered the full value for their energy. This allows the full quantity of cost effective clean energy to be developed, instead of limiting effective procurement by offering producers less than their production is worth. As a result, ratepayers are financially "indifferent" to whether their energy is generated by the clean energy project or traditional energy sources. This matches with the "ratepayer indifference" provision included in some examples of clean energy legislation.[2]

The key risks or threats to this type of approach involve a mismatch between the calculated price and the political will to pay this price. Ratepayers are not held indifferent if, through this methodology, they are now paying for costs that were previously borne by third parties (e.g. societal costs that had been externalized). Also, the full value price might actually be higher than is necessary to attract investment, meaning that the ratepayers would pay more than necessary to attract investment.

On the other hand, the full value price may be insufficient to attract participation in the program. This has been the most common result with the first calculation methodology used in Full Value-Pricing programs, where only traditional direct utility costs or values are considered, and where immature new markets have not had the opportunity to drive production costs down. For example, California's Assembly Bill 1969 CLEAN Program attracted almost no participation in its the first 3 years of existence.

While this approach may be problematic when used to cap prices, Full Value-based Pricing is an effective method for setting a starting price that will be adjusted with a Market Responsive Pricing mechanism. Further, evaluating the full value of CLEAN resources is important, even if the prices are set based on different criteria, for policymakers that are interested in determining a CLEAN Program's likely costs or savings to ratepayers.

Value factors for new generation will likely change over time and the pricing should reflect these changes. Causes of change include:

- *Marginal energy replacement cost* – the most expensive sources of energy are generally the first to be replaced; as less costly energy starts to get replaced, the replacement value decreases.
- *Projected energy costs and hedge value* - conventional fuel and generation costs historically rise over time, but fluctuate unpredictably. The value of future avoided costs must be adjusted accordingly, along with the value of reducing

[2] California Senate Bill 32 (2009) ratepayer indifference provision: "Provides that the price paid by IOUs for electricity from an eligible facility shall be set so that ratepayers that do not receive the payments under this program are indifferent to the tariff rate paid to the generators." - http://legix.info/us-ca/measures;2009-10;sb0032/analysis@2009-07-02;committee

exposure to such price fluctuation through the fixed price long-term CLEAN contracts.

- *Marginal capacity value* – avoiding the need to build new conventional facilities to meet capacity, especially ones used only for peak demand, is generally much more valuable than merely reducing the use of existing facilities. Also, as more energy is deployed in specific locations, the value of new generation capacity in those locations may go down.
- *Renewable energy credits (RECs)* – as renewable energy mandates increase, the demand pushes up the value of credits, and as the requirements are fulfilled, the value of additional RECs will fall.
- *Procurement Targets* – as procurement objectives are met, the value of additional procurement may decrease.

As such, considerable thought should be given to which value factors are dynamic versus the factors that are more static.

Conclusions

In general, Full Value-based pricing is most appropriate in the situations where the political environment requires a "lowest cost possible" approach and where existing energy costs are high. If policymakers are inclined towards being highly conservative regarding ratepayer impact, and there are policy precedents for "ratepayer indifference" and cost caps, then this will likely be the preferred choice. However, the resulting program can only be successful if the calculation of the value factors is relatively straightforward, the state has high energy costs and/or significant renewable energy targets, and enough value factors can be included to provide sufficient compensation to attract developers.

Market-based Pricing

Market-based Pricing refers to using a market discovery process to determine an appropriate fixed price that is offered to all CLEAN Program participants. This is different than a solicitation, or auction, where bidders are paid the price that they bid in to the program. By definition, a solicitation of that sort is not a CLEAN Program because it forfeits the cost-saving efficiency and certainty of offering contracts at an established price that is known ahead of time.

Examples of using market-based mechanism to determine initial price include:

- The Los Angeles Department of Water and Power (LADWP) CLEAN Program used a small auction to discover a market price before adding more value components for the full program launch.
- California's SB 32 Re-MAT program set a starting price based on the average clearing price of a separate auction for renewables.

Policy Design Thinking

A well functioning market will, in theory, establish a price that balances costs and benefits of all parties. However, if a market is not well established, there is uncertainty and volatility in pricing, and markets are subject to distortion from many factors. Market data can be very useful is establishing an appropriate price, but since a utility is often the only buyer, meaningful and accurate data may not be available if the utility has not already been active in offering CLEAN contracts.

Where an active and healthy local market has not yet been established to indicate a current market rate, several approaches for price discovery data are available.

Market Data from Other Regions

Information is widely available on current and forward pricing of energy contracts of various sizes from many regions. This data is informative, but may not reflect the savings realized from the reduced investment risk offered by a CLEAN program, or the higher initial uncertainty and costs for participant typically associated with a new and unproven local market. Likewise, differences in resource availability and allowable project size, siting or technology will impact prices. Each of these factors must be considered when attempting to apply information from other programs to local market pricing.

Requests for Offers (RFOs) or Auctions

Prior bids in response to requests for offers or auctions can provide relevant data, but must be viewed with the same considerations as data from other regions, since the costs associated with RFO project pricing, and the participants in RFO and auction markets, are different than those in CLEAN programs where increased certainty and simplicity support broader participation. This is especially true when looking toward numerous small project opportunities.

When considering creating a new RFO or auction for price discovery aimed at projects targeted by a CLEAN program, there are costs related to the transaction that must be incurred by both parties. This will require significant effort for program staff to carefully define and develop, for market participants to respond to, and for staff to review and process. Since RFOs typically result in contracts for only a fraction of the market participants, the effort of responding to an RFO represents a significant risk that must also be factored into the costs, and will limit participation.

Further, the viability of offers may not be clear until the projects have actually been built, which will often not occur until well after the data is needed by program staff. And unless carefully designed, RFOs can also attract speculative offers that may be unrealistically low, loss leader projects designed just to establish presence or control in the market, or one of a kind situations that can't be replicated.

Key Considerations

The current "market price" may be perceived as too high relative to value, avoided cost, or estimated development cost, especially in an immature market that has yet to find efficiencies through experience and competition. It is important to recognize that the pricing goes down as the market attracts interest, gaining experience and competitive pressures. Well developed CLEAN markets, consistently demonstrate highly successful deployment rates at prices far below their initial offers or the current rates required in less established programs.

Conclusions

Paired with a market-responsive pricing adjustment mechanism, this approach can be appropriate where the political environment requires a "lowest possible cost" approach, and either (a) the value of clean local energy to ratepayers is likely to found to be too low to support investment, or (b) calculating the value of clean local energy to ratepayers will be too complex or time-consuming.

Price Adjustment Mechanisms

For any program that will offer contracts beyond a small one-time allocation, the offered price will likely need to adjust after a determined time period or after a set amount of capacity has been allocated. The price for signed contracts is fixed, but the program will offer a different price for contracts going forward.

Review and Recalculate

The simplest mechanism for adjustment is a manual review process, where every set number of months or pre-defined capacity allocation, the appropriate regulatory authority recalculates the pricing based on the initial pricing methodology. For instance, if the initial price was based on Development Cost-based Pricing, then the agency uses the same methodology to recalculate the price, with the basic assumption that the input factors have changed with the market.

Examples:

- *Rhode Island*: "The Board must set ceiling prices by October 15 for the following calendar year." (DSIRE).
  - Look at RI Statute, Chapter 39-26.2 for longer explanation and quote (link)
- *Hawaii*: "Accordingly, for the reasons stated above, the commission will direct the HECO Companies to adopt FITs in their respective service territories. The FITs should be consistent with the principles described below. Those principles are subject to review, to the extent applicable, at the first periodic examination two years from the effective date of the FIT tariffs." (Hawaii PUC, Docket 2008-0273; pg. 17)
- *Gainesville*: Kept same prices for first two years, then added a third tier while evaluating for 2011 (third program year). GRU subsequently decided to adjust rates annually.
  - SEPA webinar about lessons learned in Gainesville: http://sepa-media-2009-webinars.s3.amazonaws.com/2013/Feb2013FITSlides.pdf
- *Vermont*: The program was enacted and later amended by the legislature. The Vermont PSB publishes a report annually with recommendations, but the initiative to change the program is taken by the legislature.
  - "On May 18, 2012, the Vermont Energy Act of 2012 (ACT 170) was signed into law. Act 170 expands the Standard Offer Program up to 127.5 MW

over the next ten years. The new law also mandates use of a market-based-mechanism to determine pricing for Standard Offer Projects. "On March 1, 2013, the Vermont Public Service Board issued ORDER RE ESTABLISHMENT OF STANDARD-OFFER PRICES AND PROGRAMMATIC CHANGES TO THE STANDARD-OFFER PROGRAM implementing Act 170's changes to the Standard Offer Program. The Board established a Request for Proposal mechanism to solicit new Standard Offer Projects for the Standard Offer Program."

- *California*: AB 1969 Program used a Value-based Pricing mechanism called the "Market Price Referent" (MPR). The MPR was calculated annually by the Public Utilities Commission and thus the offered CLEAN price changed annually.

Conclusions

This method is generally effective only if the calculation methodology is relatively simple and will not take significant resources. If the effort is too large, the agency will likely do the review infrequently, which risks a major disconnect between the calculated price and the "appropriate price" as the market and value factors change. As such, this method is typically used for small programs or "pilot" programs.

Scheduled Degression

One of the most common adjustment mechanisms is scheduled degression, where the price is decreased on a set schedule based on a time period or a capacity allocation (or both). At the time of program launch the amount of decrease and schedule is published such that the market is clearly defined from the start.

Notable examples of this mechanism include:

- Germany's FIT
    - http://www.nrel.gov/docs/fy11osti/50225.pdf (pg. 15)
- Gainesville's Original Program
    - https://www.gru.com/Portals/0/Legacy/Pdf/futurePower/Solar%20Feed%20In%20Tariff%20Discussion%2012-18-08.pdf
- Los Angeles' Department of Water & Power
    - https://www.ladwp.com/ladwp/faces/wcnav_externalId/res-gogreen-FiT-100MW?_adf.ctrl-state=135i7tlar8_4&_afrLoop=128261611030000

Policy Design Concepts

A predictable offered-price provides a clear signal about the reliability of market opportunity and attracts timely participation. At the same time, decreasing prices capture efficiencies achieved with experience and scale, passing the savings on to ratepayers. Transparency and predictability reduces risk for project owners, allowing project owners to accept lower prices while encouraging market investment and development.

The degression schedule can be established for prices to decline at set dates, which provides greater planning certainty for project owners, or whenever a capacity target is filled for each pricing step, providing greater cost certainty for the utility.

Key Considerations

The degression schedule may not match actual price declines experienced by the market, resulting in higher payments than necessary or a drop off in participation.
Without a capacity cap, the market may produce a higher or faster than expected response and oversupply.

In designing the schedule, the following questions should be carefully considered:

- How much deployment is desired in what time frames?
- What is the current ability of the market to respond to the program?
- In what increments should the price adjust?
- Should there be a capacity cap (for a time-based degression) or a time limit (for a capacity-based degression)?

Conclusions

A scheduled degression may be appropriate for a CLEAN Program for the following reasons:

- Simplifies pricing administration
- Addresses uncertainty about the availability of pricing and capacity
- Improves access for risk averse (local) participants

Scheduled price degression has been widely and successfully employed to provide clear signals to the market. However, it has also criticized for being unresponsive to changes in the market, resulting in often much greater or lesser rates of procurement than anticipated. Thus, these clearly established pricing schedules may best be suited for smaller programs targeted at smaller systems, or for just the initial stages of market development in a region.

Market Responsive Pricing (MRP) Adjustment

The essential feature of an MRP mechanism is to adjust prices offered over time based on the market response to the price offered. With high interest in the particular procurement program, the price adjusts downward. With low interest, the price adjusts upward for future PPAs.

MRP is based around Market Response Tiers, which are blocks of generating capacity that can be contracted at a particular price. MRP designers must determine the capacity for each Tier, the magnitude of price adjustments, and the length of the time in each Tier to gauge market response before the price is adjusted.

In each Tier, if very few generators take the price after the predefined period, then price automatically adjusts upwards in the Tier. Conversely, if a full Tier is contracted at the offered price, then the offered price automatically adjusts downward for the next Tier.

The price offered continues to adjust for each Tier until the full capacity of the procurement program is contracted. This market responsiveness allows programs to find and offer the best price for developers and ratepayers, and adjust as market conditions change.

Examples:

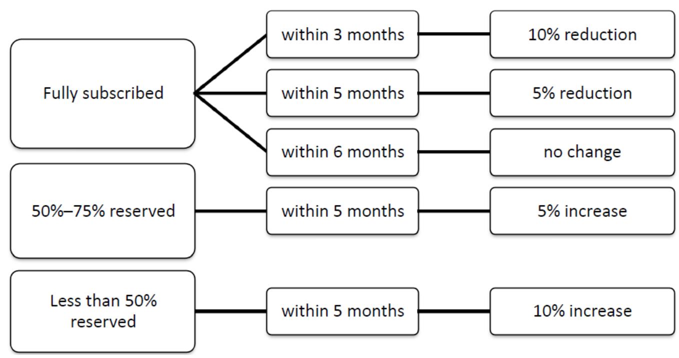
- Oregon's Pilot Program
  - "The Oregon PUC has implemented a rate adjustment mechanism for the VIR net-metering option that adjusts according to developer response. The rate adjustments are based on how quickly each bi-annual capacity allotment is subscribed (See Figure 2). For example, if the program is fully subscribed within three months from the program start date, VIR payments are reduced by 10% for the next six-month period. The following figure demonstrates how rates are changed under the program (dates are evaluated from the program start or from the beginning of a subsequent rate adjustment)," (NREL 2011, pg. 27).
    - 

Figure 2. Payment level adjustments in the Oregon Volumetric Incentive Rate pilot program
  - Original PUC ruling: http://apps.puc.state.or.us/orders/2011ords/11-339.pdf
- California's SB32 Re-MAT will be next to try MRP (starting Oct 1, 2013)
  - http://docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/167679.pdf

Policy Design Concepts

Using MRP means the starting price does not need to be precisely "right". MRP eliminates the risk of over or underpricing by allowing the market to find the lowest viable price to achieve a specific procurement objective in a transparent way. Sustained efficient pricing is found through stable demand.

MRP has emerged as a best practice for accurate price discovery, through ongoing polling of the market, over the duration of an energy procurement program. In Germany, MRP has resulted in the lowest prices in the world, while continuing to provide high rates of deployment. (http://www.clean-coalition.org/site/wp-content/uploads/2013/08/Master_German-CLEAN-Story-12_zf-8-Jan-2013.pptx)

A more complete discussion of MRP can be found in the Clean Coalition's Brief on this topic on the CLEAN Resource Hub Supporting Materials Page: http://www.clean-coalition.org/supporting-materials/

Key Considerations

Program designers should carefully consider the following issues:

- Time periods, Tier sizes and number of Tiers need to be balanced to achieve the desired rate of deployment and market responsiveness.
- Without a price floor and sufficient development guarantees, project developers may skew the program by taking contracts at unviable prices.
- A price ceiling may be necessary to mitigate concerns of runaway costs with upward adjustments.
- Some procurement programs are too small to support MRP
  - With a small program capacity relative to project size, it is difficult to balance the number of Tiers with the size of the Tiers.
- The market price set by MRP may be perceived as too high relative to the value or avoided cost of the procured energy.

Conclusions

Some variation of MRP is recommended for most CLEAN Programs, excepting small pilot programs. Using MRP reduces the pressure to "get it right" with the program's initial price. Instead, the administrative burden is reduced by allowing the program to automatically respond to market volume. This enables programs to find the best price while still achieving the program's deployment objectives.

Finally, an MRP can be customized and tailored to particular program and community objectives. Program designers can target those objectives by fine-tuning the program size, Market Response Tiers, price floors and ceilings, adjustment levels, and adjustment time periods.

Overall Recommendations

Selecting a pricing approach for a CLEAN Program ultimately depends on policy objectives, mandates and political will. Often, enacting a CLEAN program requires combating utility opposition, and utilities tend to prefer prices based on solicitations and auctions rather than development cost or value. Further, when prices are based on value, utilities will typically fight for a low value calculation that may be too low to attract viable projects.

The Clean Coalition recommends that statewide CLEAN Programs, to be implemented by a state's utility regulatory agency, use a Full Value-based Pricing approach for setting initial contract prices. The calculation of the initial value is unlikely to be exhaustively precise as most agencies would find such an analysis to be far too burdensome. So, a reasonable estimate will be sufficient, especially when combined with a Market Responsive Pricing adjustment mechanism.

The recommended MRP design would size the Market Response Tiers such that each Tier could accommodate a significant number of maximum size projects. Especially in the early months of a new program, it is important that the MRP finds a true market price without being skewed by the participation of a few developers.

The MRP should include both a price cap and a price floor. While the renewable energy transition is urgent, it is important to acknowledge the cost concerns of ratepayers. A price cap allows policymakers to calculate the worst-case scenario for costs to ratepayers resulting from the program, which greatly improves the chances that a program will be enacted. A price floor, on the other hand, helps policymakers ensure that the hard work of enacting a bill will not result in a program that has prices that are too low to attract investment.