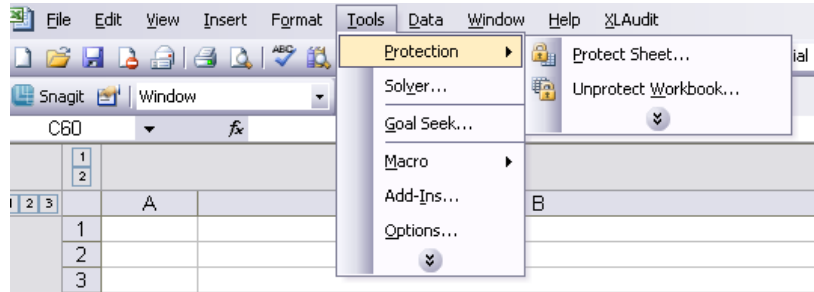


Customer Prepay Impact Model

Instructions for Use

Inputs

- To use this model, you will need to unprotect the workbook, by going to



Select “Unprotect Workbook”, and enter the password “bpa”.

- The Input Tab, as shown below, allows users to modify certain assumptions relevant to the customer decision to participate, or not, in the Prepayment for power program offered in conjunction with the BP-14 rate case.

Regional Participation Effects		
Enter the annual dollar amount of revenue financing, and/or additional O&M expenses due to capital cuts in lieu of revenue financing, which would be necessary for BP-14 rate case if BPA does not succeed in finding additional sources of capital:		
Enter the two-year amount of dollars achieved in the 2014 Prepay offering from other utilities than input in the customer section:		
Once Above Two Values are entered, please run the "Update Rate Base"		Update Rate Base
Customer Participation Effects		
Customer Name		Kona Electric
		This customer can bid at most 2 Blocks
Prepay Limit (number of blocks)		2
Desired Level of Participation		
Enter the # of Blocks		2
Enter Assumed Financing Rate		3.25%
Enter Assumed Incentive Rate		2.00%
Savings Rate on Cash/Alternative Investment Rate		1.00%
Discount Rate for NPV Calculations		3.25%
BPA Implied Cost of Capital for Prepay		5.25%
Enter Amount Financed with Cash (cannot exceed \$12,620,032)		\$ 5,000,000
Remaining Amount to be Financed		\$ 7,620,032
Total Amount of Prepay		\$ 12,620,032

3. There are two input areas – shaded Gold (on hidden rows), and Purple. Utilities running the model **should only modify the 7 purple cells** on the “Input” tab. There are many hidden rows and a hidden column, it is recommended to leave them hidden to avoid inadvertently changing a critical number or calculation since all other modifications will result in **unsupportable results**.
4. Regional Participation Inputs are provided as a convenient way to assess the impact on BPA’s rates based on your assumptions of the participation level of other customers and the costs BPA might include in the rate case for capital and O&M activities for the hydro projects. The default values are \$0 for O&M costs and \$0 participation in cells C5 and C7, respectively. Testing the impacts of revenue financing, O&M and/or negative monetary impacts of lost hydro capability requires entering those assumptions into these cells.

Note: the assumptions and results in the Regional Participation Effects and Customer Participation Effects sections on the “Input” tab **are not independent**; therefore, the results obtained from one section are impacted by the assumptions of the other section. Therefore, any additional amounts of Prepay dollars from the Customer section are added to the assumption in cell C7 for overall Prepay participation.

The two Regional Participation Effects inputs are:

- a. assumed annual dollars in rate case for hydro projects (\$0 to \$250 million) ~ C5,
- b. assumed regional participation in the program, dollars received in this 2014/15 offering for Prepay (\$0 to \$500 million for the two year period) ~ C7,

Updating the model’s results, when changing assumptions in the Regional Participation Effects section, requires running the “Update Rate Base” macro. **If this macro is not run immediately after changing one or both assumptions, the output is invalid.** Upon clicking the “Update Regional Participation Effects” button to start the macro, you will need to enter the following password, “**bpa**” and click “**OK**” twice. At the end of the macro routine re-enter “**bpa**” and click “**OK**” twice before proceeding. If the assumptions are not changed it is not necessary to run this macro.

5. AE provided inputs:
 - a. customer name ~ C33, and
 - b. input for the Block limit per net billing requirements, provided by your AE when you are sent the model ~ C35,
6. Customer Inputs are inputs unique to your situation. These inputs include:
 - a. the number of blocks to purchase, not to exceed the limit defined in C34, is entered in C38,
 - b. assumed interest rate of borrowed funds (add some small additional interest amount to account for credit acquisition costs) in C42,

- c. assumed additional interest incentive required for participation in C43,
 - d. opportunity cost of capital or the interest rate anticipated for invested funds (consider this as the lower limit) in C44,
 - e. the discount rate relevant to the Net Present Value calculations from each customer's perspective in C45, and
 - f. the amount of cash (as opposed to borrowed funds) planned to be used in C48.
7. The example illustrated above includes the following assumptions:
- a. number of blocks to be purchased 2 in C34,
 - b. assumed finance and imbedded credit acquisition cost have an effective rate of 3.25% in C42,
 - c. assumed incentive interest rate is 2.00% in C43,
 - d. assumed opportunity cost of capital is 1.00% in C44,
 - e. the assumed discount rate is 3.25% in C45, and
 - f. assumed use of cash is \$5 million in C48.

These assumptions indicate Kona Electric would offer to purchase \$18.4 million of power credits (2 blocks x \$50,000/ month-block x 184 months) for \$12,620,032 (\$6,310,016/block), making an undiscounted return of \$12,047,734. If this offer established the Market Clearing Price, BPA's implied cost of capital would be 5.25% (computation for BPA's implied cost of capital is in cell C46).

8. We therefore enter in the following rates: Assumed level of Financing" is 3.25%, "Assumed Level of Incentive" is 2%, and the "Opportunity Cost of Capital" is 1%. Assuming Kona is interested in testing its participation, where it finances about $\frac{2}{3}$ of the Prepay, and use \$5 million of its cash for Prepay (since they would get, at the very least, 5.25% on this money compared to 1% in the bank if they participate). Enter 5,000,000 into the "Amount Financed with Cash" cell to assess the impact.

Outputs

- The “Outputs” sheet provides computations specific to Kona Electric, under the input assumptions above about Kona’s participation in the program. The output sheet is shown below.

For Illustrative Purposes Only - Subject to Change.

Kona Electric						
Number of Block Purchased		2				
Total Value of Credits to be Returned	\$	18,400,000				
Bid to Prepay	\$	12,620,032				
Assumed Financing Rate		3.25%				
Assumed Incentive Rate		2.00%				
If NO USE of CASH						
Undiscounted Aggregate Incentive	\$	2,358,651				
NPV of Incentive @ 3.25% discount rate	\$	393,328				
Monthly Average Return on Investment		15%				
If USE of Cash Levelized						
Assumed Cash Used	\$	5,000,000				
Undiscounted Aggregate Incentive	\$	3,318,957				
NPV of Incentive @ 3.25% discount rate	\$	553,466				
Monthly Average Return on Investment		34%				
If USE of Cash with Rapid Repayment						
Assumed Cash Used	\$	5,000,000				
Principal Repayment deferred through		Nov-18				
Amount of Cash Repaid by this time	\$	5,000,000				
Monthly Average Return on Investment after this time		55%				
Monthly Average Return on Investment over the full term		36%				
Rate Effects Due to Program Participation		2012	2013	2014	2015	2016
Kona Electric Revenues	\$	2,072,684	\$ 2,081,902	\$ 2,481,102	\$ 2,492,271	\$ 2,595,608
Loads in MWh (combined)		74,954	75,082	75,406	75,748	76,298
Incentive (\$)						
If NO USE of CASH	\$	-	\$ 51,275	\$ 153,825	\$ 153,825	\$ 153,825
If USE of Cash Levelized	\$	-	\$ 72,151	\$ 216,454	\$ 216,454	\$ 216,454
Is USE Cash with Rapid Repayment	\$	-	\$ 16,290	\$ 42,827	\$ 33,690	\$ 24,461
Rate Deltas (\$/MWh)						
Avoided Rate Impact Assuming \$12,620,032 of Prepayments and \$0,000 Revenue Financing and/or Higher O&M Costs Imbedded in Rates	\$	-	\$ -	\$ -	\$ -	\$ -
<i>Additional Rate Benefit if Incentive Applied to Customer Power Rates</i>						
If NO USE of CASH	\$	-	\$ (0.68)	\$ (2.04)	\$ (2.03)	\$ (2.02)
If USE of Cash Levelized	\$	-	\$ (0.96)	\$ (2.87)	\$ (2.86)	\$ (2.84)
Is USE Cash with Rapid Repayment	\$	-	\$ (0.22)	\$ (0.57)	\$ (0.44)	\$ (0.32)

- Some basic information is provided at the top of this sheet: a) The Number of Blocks Purchased, b) the Total Value of Credits to be Returned, c) Bid to Prepay, d) Assumed Financing Rate, and e) Assumed Incentive Rate. These can be explained as follows. The number of blocks purchased is the assumed amount entered by the user. The Total Value of Credits to be returned is simply the sum of the monthly credits across 15 + years associated with the assumed amount of blocks purchased. The bid to prepay is the dollar amount this utility is bidding, under these assumptions, to give BPA up front, in exchange for the monthly stream of credits. Note that this is the highest amount that Kona would actually pay – if the Market Clearing Price (MCP) is lower than this amount, they will be selected for participation, and pay the lower MCP. If the MCP is higher than this amount, they will not be selected to participate. If the MCP is equal to Kona’s bid, they will pay this amount. Finally, the last two pieces of information in this section are the implied cost of service and the implied incentive. The Financing Rate is the assumed rate that the customer can finance the prepay at (regardless of use of cash), and the incentive rate is the sweetener (above the cost of service) that the utility demands (through this bid) to participate in Prepay.

3. Three scenarios are evaluated under these assumptions: If the utility does not bring cash to the table, and finances the whole Prepay amount paid to BPA upfront, with third-party borrowing. This is the “If NO USE of Cash” case. For a utility which wishes to use cash (at the level input on the Input Tab), but is not concerned about recouping this cash as quickly as possible, the “If USE of Cash is Levelized” scenario is presented. Finally, the third scenario “If USE of Cash with Rapid Replacement.” Under this scenario, a utility deducts the forgone interest on the cash used to participate in the program from the credits they receive for Prepayment, and stockpile the rest to recoup their cash balance as quickly as possible. They borrow for the remainder of their Prepayment amount, but defer payments (except interest) until such time that their cash balance is replenished. They then make payments on the third-party financing balance using accrued interest and using the credit stream after this time.
4. Finally, Rate Effects are presented under alternative scenarios: a) whatever user inputs were entered assuming the cost to BPA and rate payers of failing to find alternative sources of capital or gain additional borrowing authority, b) rate benefits to the utility of the incentive amounts as applied on its monthly BPA bill, in \$/MWh, under the three scenarios..

Terms on Output Sheet

Undiscounted Aggregate Incentive – This is the dollar incentive each month (the amount that the monthly credit exceeds the customer’s debt service to finance the initial payment) added up over the 15 + years.

NPV of Incentive @ 0.01 discount rate – Net present value of the incentives as describe above over the 15 + year term. Compounded monthly. Discount rate is the Opportunity cost of capital as input on the input sheet.

Monthly Average Return on Investment – the amount that the credit exceeds the cost of debt service as a percentage of the cost of debt service each month.

Assumed Cash Used – Amount of cash entered into the Input sheet for this utility restated.

Principal Repayment deferred through – Shows the period through which the cash brought to the prepay transaction is being repaid, net of a) interest on issued debt, and b) opportunity cost on cash balance yet to be repaid.

Amount of Cash Repaid by this time – shows the repayment of the initial cash used.