

## Stranded Costs in the Philippines - Electric Ratepayer Perspectives

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Exactly what stranded costs are future electricity ratepayers in the Philippines going to be asked to pay for upon privatization of the National Power Corporation (Napocor)?

The electric stranded cost discussions are sometimes focused on the difference between the expected market value of Napocor assets (i.e. the price at which the assets will be sold) and the current liabilities of Napocor associated with the assets. In some cases, the discussion has focused on the difference in market value and the value carried on Napocor books for ratemaking purposes.

Are either of these an appropriate method for identifying stranded costs? If you have been paying for Napocor electricity over the past 15-20 years, you might say no and this paper examines why.

### ***Book Value Approach***

Let us take the ratebase or book valuation first – a situation, by the way, which has no parallels with the U.S. or U.K. situation and is unique to developing country situations.

Investors (the Philippine national government, in this case) in fixed assets like electric generating plant do not recover their investment in one year through prices – it takes many years. Therefore they seek not only a *return of* their investment, they seek a *return on* the amount of investment that is not yet recovered from ratepayers and is still tied up in the asset investment. It's not unlike consumer credit. If you borrow P10,000 for ten years, you may be asked to pay P1,000 per year for ten years plus you pay interest on the amount you have not paid off yet – the remaining balance each year. The P1,000 a year is the *return of* capital and the interest is the *return on* capital.

The Energy Regulatory Board (ERB) sets electric prices in the Philippines using a *return on rate base* methodology. In this methodology, consumers pay an annual depreciation (the return of Napocor's invested capital) plus a return on rate base (essentially return on

capital). Rate base is essentially the un-recovered (that is, not yet recovered through depreciation) investment.

However, the Philippines employs a concept sometimes referred to as *price level depreciation*. In this method, the rate base, instead of being tracked at original cost, is revalued each year to current price levels. It is a *revalued rate base*.

Price level accounting is commonly employed by electric utilities in developing countries, particularly where there are relatively high rates of local currency inflation. Under price level accounting, the utility will recover, through depreciation, an amount not equal to its original investment but rather an amount equal to the original investment adjusted for inflation. Part of the rationale for this is that it provides enough funds to replace the asset after it is retired. Without going into any further discussion of the flaws or benefits of this, we will just state that this is the method currently used in the Philippines.

The following table demonstrates how Napocor recovers capital costs for a 20-year asset costing P10,000.

**National Power Corporation Price Level Accounting**

Period	Index	RCN	Depreciation Reserve (revalued)	Depreciation	Rate Base or RCNLD	Purchasing Power of Depreciation	Return on Rate Base @ 8%	Depreciation + Return
1	1.00	10,000	500	500	9,500	500	760	1,260
2	1.06	10,600	1,060	530	9,540	500	763	1,293
3	1.12	11,236	1,685	562	9,551	500	764	1,326
4	1.19	11,910	2,382	596	9,528	500	762	1,358
5	1.26	12,625	3,156	631	9,469	500	757	1,389
6	1.34	13,382	4,015	669	9,368	500	749	1,419
7	1.42	14,185	4,965	709	9,220	500	738	1,447
8	1.50	15,036	6,015	752	9,022	500	722	1,474
9	1.59	15,938	7,172	797	8,766	500	701	1,498
10	1.69	16,895	8,447	845	8,447	500	676	1,521
11	1.79	17,908	9,850	895	8,059	500	645	1,540
12	1.90	18,983	11,390	949	7,593	500	607	1,557
13	2.01	20,122	13,079	1,006	7,043	500	563	1,570
14	2.13	21,329	14,930	1,066	6,399	500	512	1,578
15	2.26	22,609	16,957	1,130	5,652	500	452	1,583
16	2.40	23,966	19,172	1,198	4,793	500	383	1,582
17	2.54	25,404	21,593	1,270	3,811	500	305	1,575
18	2.69	26,928	24,235	1,346	2,693	500	215	1,562
19	2.85	28,543	27,116	1,427	1,427	500	114	1,541
20	3.03	30,256	30,256	1,513	-	500	-	1,513
				18,393		10,000		

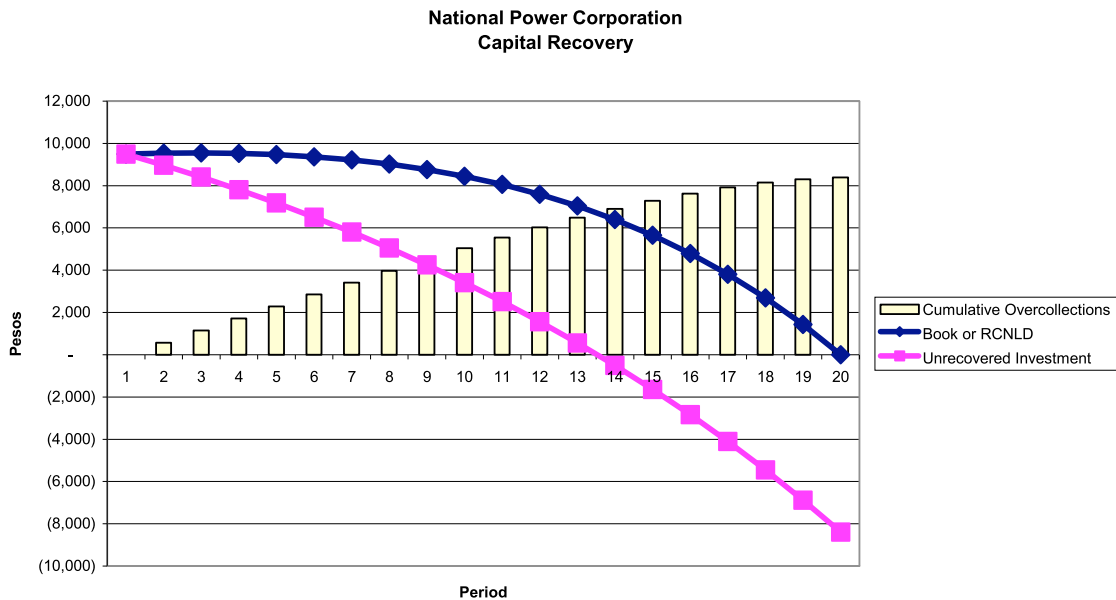
The table shows the annual inflation index and the Replacement Cost New (RCN) of the asset. RCN is the revalued original cost of the plant. This table also shows the annual

depreciation amount<sup>1</sup>. The rate base is essentially the *replacement cost new less accumulated depreciation* (RCNLD) - Napocor and ERB refer to this as Sound Value.

As shown, the total amount collected through depreciation is P18,393, although Napocor’s purchasing power of the depreciation expense (in real pesos) indeed totals P10,000. Nevertheless, ratepayers will repay Napocor P18,393 for a P10,000 investment. Also note that in this method, not only is the original cost and the annual depreciation adjusted each year for inflation, but so is the Depreciation Reserve.

The most important point relative to the stranded cost issue, however, is that at any point in time, the RCNLD or book cost of the asset overstates the actual un-recovered investment.

The following chart plots the Book Value (or RCNLD) Value of the asset, the unrecovered amount of its original investment (P10,000 less cumulative depreciation), and the difference between the two which reflects cumulative over-collection. At some point around year 14, Napocor has already recovered its original P10,000 investment, but continues charging ratepayers a depreciation expense (and a return).



What does Napocor do with this excess collection? It uses it for internal cash generation, thereby reducing its cost of capital (without it, it may require a return on rate base in excess of 8%, for example). Therefore, the ratepayers, on an on-going basis, are indeed reaping benefits from the accelerated depreciation recovery they are paying.

But what happens when Napocor sells all of its assets, ceases to exist (cost of capital becomes irrelevant) and its time to true-up the books with the ratepayers and the government?

Let us assume that Napocor is privatized at a time when our example asset is in year 12 of its life and that the asset sells for P4,000. Are there stranded costs that should be recovered from future electricity users?

Napocor is showing a book value of P7,593. Compared with the sales price of P4,000, this leads to a book loss, one interpretation of stranded cost, of P3,593.

However, the ratepayers might say “Hey, I’ve already contributed P8,435 through 12 years of depreciation expense.” In this interpretation, Napocor is making a gain of P2,435: P10,000 less P8,435 recovered from ratepayers less P4,000 recovered from asset sale. From the consumer point of view, this is not a stranded cost.

### ***Net Liabilities Approach***

Now let us look at the stranded asset interpretation that considers the difference between sale price and Napocor net liabilities. Napocor’s liabilities, after all, are what they are.

Here is where the other shoe falls with price level accounting. Plus, we have to dig up that lost portion of the right hand side of the balance sheet – proprietary capital. If the left hand side of the balance sheet consists of assets, the right hand side consists of both liabilities and equities. There is, indeed, equity on NPC books, and its not insubstantial.

Recalling our earlier discussion of price level accounting, the rate base is revalued up each year, creating an increase to Napocor assets on its balance sheet. The offsetting entry is an increase in proprietary capital of Napocor. It shows up on the right hand side under equity and its labeled Appraisal Capital. The 1998 Annual Report of Napocor shows this balance as almost P100 billion.

The assets, therefore, are offset not only by liabilities but also by equity. But equity is, after all, a liability of the corporation to its owners – in this case the national government. However, in the case of liquidation of the assets where electric consumers are going to be asked to pay for the difference is sales prices and net liabilities, ratepayers may question whether the Appraisal Capital (arising out of price level accounting) represents their equity or the national government's.

### ***Conclusion***

Electric ratepayers understand, in most cases, that transition to competition may require that they pay for historical costs incurred on their behalf and which they otherwise would pay for anyway if the transition did not take place. It is the quantification of these costs, however, that is at the heart of the debate.

A simple comparison of the market value of assets to book costs or to net liabilities, in the Philippine instance, may not be precisely fair to ratepayers who have been paying for the existing assets over the past years. This paper raises certain issues for investigation in the final determination.