Parsons Brinckerhoff Associates

Asian Appraisal Company, Inc.
professional business and property consultants

# ASSET VALUATION
# FOR PRIVATELY OWNED DISTRIBUTION UTILITIES
# SUBJECT TO PERFORMANCE BASED REGULATION

FINAL REPORT
**DAGUPAN ELECTRIC COMPANY**
**VALUATION DATE: 30 JUNE, 2006**

**FOR**

***ENERGY REGULATORY COMMISSION***

ENERGY REGULATORY COMMISSION ERC PHILIPPINES

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# 1. EXECUTIVE SUMMARY

## 1.1 SUMMARY OF VALUATION

PB Associates (PBA) and Asian Appraisal Company, Inc. (AACI) have been retained by ***Energy Regulatory Commission (ERC)*** to conduct and prepare an appraisal of the fixed assets exhibited to us as being owned by ***Dagupan Electric Company*** (herein referred to as "DECORP"). We confirm that we have conducted the necessary inspection, made relevant inquiries and obtained such further information available for the purpose of providing you with our opinion of the value of the Fixed Assets.

It is our understanding that this appraisal will be used as support for rate setting and you wish us to render an opinion of the ***Appraisal Values*** of Decorp's Fixed Assets as of ***June 30, 2006.***

The valuation was performed in accordance with the standards issued by the Energy Regulatory Commission under the ERC Asset Valuation Guidelines. The methodology adopted is consistent with the internationally accepted appraisal standards as stated in the Uniform Standards of Professional Appraisal Practice (USPAP) and with the International Valuation Standards, Sixth Edition 2003, issued by the International Valuation Standards Committee in London, United Kingdom.

Premised on the accompanying narrative descriptive information, valuation methodology, and summary of values, our opinion of the Appraisal Values of the existing Fixed Assets as of June 30, 2006 for continued use as part of a going concern, is fairly and reasonably represented as follows:

| | Depreciated Historical Cost | Replacement Cost | Optimised Replacement Cost | Optimised Depreciated Replacement Cost |
|---|---|---|---|---|
| **Totals (Php)** | N.A. | 1,392,826,393 | 1,347,775,859 | 981,990,473 |

Table 1 presents our opinion of the Optimised Depreciated Replacement Cost (ODRC) valuation of the Decorp distribution utility as at June 30, 2006 based on the DHC and ODRC valuation approaches explained within this report.

As per the requirements of clause 4.8 of the DWRG the tables contained in Appendix A of this report present the above values subtotalled by asset category.

## 1.2 OPTIMISED DEPRECIATED REPLACEMENT COST (ODRC)

### 1.2.1 Valuation of Electrical System Fixed Assets

PB Associates employed the following process:

**Step 1** – Determine Information Gaps

PB Associates began with the extraction of the Distribution Utility's (DU's) Fixed Asset Register (FAR). The FAR is an accounting register and must be conformed to an ODRC register based on defined asset subcategories.

PB Associates identified all assets in the DUs FAR as well as the availability of data required to perform an ODRC valuation.

The data required from the FAR was as follows:

1. Asset description;
2. Physical count (assets in use);
3. Historical cost (installed cost);
4. Installation date;
5. Physical location; and
6. Electrical location.

After due examination of financial and technical data repositories, PB Associates concluded the following:

None of the DUs were able to provide the physical or electrical locations without conducting an extensive and time consuming mapping process. The timeframe required for such mapping, to be robust, is years not months. Accordingly it was concluded that adjustment of replacement costs by specific location multipliers was not feasible for this valuation.

Decorp could not provide robust historical cost records. This creates a difficulty in trending historical costs as a basis for setting of replacement costs and for indexation. Accordingly for Decorp's standard assets (those with > 5% materiality) it was decided to use a building block method on major cost components, and to benchmark these components against Meralco and Cepalco costs to arrive at current replacement costs.

**Step 2** – Transform the DU FAR to an ODRC Register

PB Associates guided the development of the DU FAR, working with the DU's commercial and technical staff as they transformed their FAR into a "worked" register suitable for entry into PB Associates ODRC register format.

This process comprised many iterations as the DU FAR's were used for accounting purposes and required a substantial allocation effort to conform to the requirement of the ODRC register.

This step required listing all asset types found in the DU register. A full listing is provided in a companion paper to the ERC Asset Valuation Guidelines – "Proposed Standard Asset Categories, Replacement Costs & Multipliers for Philippines Distribution Utilities".

**Step 3** – Verify the Asset Register data

The ERC Position Paper called for the following approach to asset verification:

***Substation Assets*** – For major and minor substations, the verification was to a 100% inspection standard.

***Repetitive Assets*** – For repetitive assets the verification was to a sampling process. The sampling was based on sampling theory taking into account a finite population correction factor. This approach was used for the 2004 Reproduction Cost New valuation. As there quantity of repetitive assets is very large and physical inspection a costly and time consuming task, only the main sub-categories of assets were inspected to a 99% confidence level. The main categories were poles, overhead conductor, line transformers (below 20kV) and meters.

Furthermore, it is technically impossible to verify the assets inspected in the field because there is no location identifier in the DUs Fixed Asset Registers.

PB Associates adopted a proxy method (described in Section 3.2.2).

The age (or installed date) of repetitive assets is also impossible to verify through field inspections as the assets are not tagged with such details. For verification purposes, PB Associates relied on an examination of age profiles (computed from the ODRC register data) and matched the profile to externalities such as phases of economic growth accompanied by periods of rapid network expansion.

**Step 4** – Determine Standard & Non-Standard Assets (materiality)

Once the 'worked' registers were ready, PB Associates analysed the physical counts and historical costs to determine the common or standard assets according to a 5% materiality threshold. The analysis determined which assets should be given a standard replacement cost (material asset types) and which assets would need to be valued using indexed historical costs or MEA valuation methods.

**Step 5** – Finalise the Replacement Cost Register

The assets in the verified register were classified according to the valuation methodology i.e. assets for RC valuation, assets for indexed historical cost valuation and assets for replacement with Modern Equivalent Assets (MEA).

**Step 6** – Determine Optimisation

The rules pertaining to optimisation are specified in the ERC's Asset Valuation Guidelines. The basis for optimisation of each of the DU's assets is recorded in Appendices A to C of this companion paper.

**Step 7** – Finalise the ODRC Register

This step involves entering the following settings into the register from the Appendices B of the ERC Asset Valuation Guidelines:

- Standard Asset Lives
- Indexation Factors (for Historical Cost valuation)
- Standard Replacement Costs

**Step 8** – Perform the ODRC Valuation

***Step 8a*** – For standard assets, depreciate according to the RC and remaining life to a 5% Optimised Replacement Cost residual value.

***Step 8b*** – For non-standard assets, apply indexation, then depreciate according to the remaining life to a 5% Optimised Replacement Cost residual value.

***Step 8c*** - Optimise the ODRC Register by making adjustments as single line entries in accordance with the recommendations in Appendices A to C of this companion paper.

In practice Steps 8a and 8b are carried out automatically by the logic embedded in the ODRC register.

Step 8c is carried out manually. This is because different techniques are required to optimise assets valued by RC and assets valued using indexed historical costs. In some cases individual line entries are identified for optimisation while in other cases a random selection of assets must be made and this is performed manually.

This completes an explanation of the process employed by PB Associates to value the electrical system fixed assets and non-electrical assets of Decorp.

### 1.2.2 Valuation Settings

Materiality of 5% has been applied during the valuation process.

GST (VAT) has been included in replacement costs as Decorp is not VAT exempt. VAT was also included in the previous valuation.

# 2. DECORP ASSET REGISTERS

In this section we discuss the existing valuation records for Decorp, fixed asset registers, accounting manual, engineering information and other documents which will be used to develop an ODRC register.

## 2.1 FIXED ASSET REGISTERS

### 2.1.1 Background

Decorp maintains a FAR that is built as a spreadsheet in OpenOffice software.

The primary register for valuation purposes is known as a "lapsing schedule". This schedule is prepared to summarize all transactions related to property, plant and equipment.

The schedule contains the following information for 95% of the assets owned by Decorp:

- Date of acquisition / installation
- Reference No
- Description of the assets
- Useful Life (Remaining Life)
- Acquisition / Purchase Cost
- Depreciation for the year
- Accumulated Depreciation
- Net Book Value

Decorp is currently using QuickBooks Accounting Software for preparation of financial reports.

From the lapsing schedule, a monthly journal entry is prepared for depreciation on a per asset category basis and reflected in the QuickBooks.

### 2.1.2 Accounting Manual

Decorp has adopted an accounting classification that is aligned with ERC categories.

Capitalization rules are documented and a copy was provided to PB Associates / AACI.

### 2.1.3 Engineering Information

Decorp has an Automated Mapping / Facilities Management System (AM / FM). Decorp advises that 95% of their assets are recorded against these categories in the AM/FM system, including the repetitive assets.

The AM / FM functionality supports computation of distances between poles and feeder lengths. This information is useful to establish the total kilometres of conductor as well as the total route length of feeders of different voltage level.

Decorp advised that this information is very accurate because it is based on walking the distances, tracked against records.

The AM / FM system captures the number of customers which is a proxy for the number of meters.

While the information in the system is accurate it is not fully complete. Decorp undertook a reconciliation process to determine the difference in physical counts contained within the Fixed Asset Register and AM / FM system. It was explained to PB Associates that the discrepancies were significant as the AM / FM system is under development. There was a 6% discrepancy in pole count and a 14% discrepancy in line transformer count.

# 3. OPTIMISED DEPRECIATED REPLACEMENT COST (ODRC) REGISTER

The ODRC Register was developed from the Decorp Fixed Asset Register data. This approach supports reconciliation between the Cost, Reproduction Costs, New and the ODRC valuation.

## 3.1 ODRC REGISTER DEVELOPMENT

### 3.1.1 Substations

The ODRC register for substation equipment was built from the Fixed Asset Register. The account has a relatively small number of items and the items are identified with standard descriptions.

The installation date of each item was captured during site inspections from equipment nameplate information. Where such information was missing, an estimate was made based on adjacent equipment, taking into account the type and condition of the item of interest.

Taking this approach to register development, the substation equipment fixed asset register account could be readily verified from site inspection. The module counts and composition were verified as part of the site inspection process described in Section 3.2.

### 3.1.2 Repetitive Assets

In the case of the repetitive assets, the ODRC register was developed from the Decorp Fixed Asset Register data using a cleansing and sorting process. This approach was supported by a high degree of uniformity of standard asset descriptions in the repetitive asset accounts.

## 3.2 VERIFICATION OF ODRC REGISTER

PB Associates / AACI have conducted 100% ocular inspection on the following:

- Lands – which are located at 4 sites; and
- Station Equipment – which are located at 2 sites.

The remainder of the fixed assets, which are repetitive in nature, were inspected using Sampling Method.

### 3.2.1 Substations

PB Associates / AACI captured asset details from nameplate data using a systematic inspection process. The data captured included installation dates.

Extensive photographic records were taken and recorded in electronic form for purposes of verification.

The ODRC register was verified using the site inspection information. No adjustments were necessary as the Single Line Diagrams proved to be accurate records of the substation equipment in use.

### 3.2.2 Repetitive Assets

Ocular inspection was carried out for 100% of the Land and Buildings and Structures and Improvements (A1 and A2 categories).

The remaining fixed assets, which are repetitive in nature, were inspected using Sampling Method. PB Associates and AACI used the Decorp AM / FM system and GIS system to develop a physical inspection schedule for the repetitive assets. The sampling percentages adopted considered the factors of location, volume, peso materiality and type of assets.

As the materiality of repetitive asset categories A4, A6, A12 and A16 is very high compared to the other categories, only these sub-categories of assets were inspected to a 99% confidence level. The remaining assets were inspected to a 95% confidence level.

**Table 3: Sampling Statistics**

| Types of Assets | | Total No. of Locations | Sampled Locations (Confidence) |
|---|---|---|---|
| A4 | Towers, Poles and Fixtures | 28,217 | 267 (99%) |
| A6 | Overhead Conductors and Devices | 1,330,670 | 271 (99%) |
| A8 | Underground Conduit | 0 | 0 |
| A10 | Underground Conductors and Devices | 0 | 0 |
| A12 | Line Transformers | 2,158 | 245 (99%) |
| A14 | Power Conditioning Equipment | 163 | 102 (99%) |
| A15 | Services | 3,825,152 | 271 (99%) |
| A16 | Meters, Instruments & Metering Transformers | 76,326 | 271 (99%) |
| A20 | Street Lighting and Signal System | 3,815 | 94 (95%) |
| B3 | Furniture and Office Equipment | 1,395 | 90 (95%) |
| B4 | Transportation Equipment | 66 | 39 (95%) |
| B5 | Stores Equipment | | |
| B6 | Tools, Shop and Equipment | | |
| B7 | Laboratory Equipment | | |
| B8 | Computer Equipment and Peripherals | 412 | 78 (95%) |
| B9 | Power Operated Equipment | | |
| B10 | Communications Equipment | | |
| B11 | Miscellaneous Equipment | 462 | 80 (95%) |

It was not possible to verify the assets inspected in the field because there is no location identifier in the Decorp Fixed Asset Register.

This verification problem is linked to the current maturity of the Decorp fixed asset registers, and can only be addressed over time through a systematic field inspection program. (This approach was taken in New Zealand and Australia in the 1990s. For a small company servicing 180,000 customers, the process took three years to complete; it is a major undertaking that sits outside the scope of this valuation).

Reliance on other records for verification introduces a 'circularity' problem. Purchase vouchers used as the data source for data entry into the fixed asset register cannot be considered as useable – such records verify that the asset

was correctly entered into the fixed asset register, but this is not a sound basis for verifying that the asset exists in the field.

To overcome this problem PB Associates adopted a proxy method.

First, we verified that the physical counts in the Decorp Fixed Asset Registers reconciled to the counts in the ODRC register.

Second, as mentioned above in Section 2.1.3, we examined the physical counts recorded in the Fixed Asset Register against those recorded in the AM / FM system. It was found that the counts did not reconcile to sufficient accuracy to be used as a sound basis for verification. We relied instead on verification against system maps and plans.

The verification of age (or installed date) of repetitive assets is impossible to verify through field inspections as the assets are not tagged with installation dates. Condition assessment in the field through ocular inspection is unreliable as the environmental conditions in the Philippines result in rapid ageing.

However, the installation date records for the majority of repetitive assets are complete as Decorp engineers have already estimated the installation dates of assets (including poles) using feeder maps and local knowledge.

Installation dates for other major subcategories of the repetitive assets are not complete. The installation dates for these assets will need to be estimated by Decorp engineers.

The installation dates were verified by PB Associates / AACI using a random sample, and tracing the process followed by the Decorp planning engineers.

For verification purposes, PB Associates relied on an examination of age profiles (computed from the ODRC register data) and matched the profile to externalities such as phases of economic growth accompanied by periods of rapid network expansion. This process resulted in extensive adjustments to the spread of installed dates used in the ODRC register.

The results of the field inspections of repetitive assets were as follows:

**(i) Decorp Electrical System Assets**

**Table 4: Sampling Results**

| | No of Samples | No of Correct Samples | No Wrong Sample | % Error | % Correct | Comment |
|---|---|---|---|---|---|---|
| Distribution Poles | 148 | 148 | 0 | 0% | 100% | Poles matched pole location and construction type |
| Distribution Overhead Conductor | 14.5km | 14.5km | 0 | 0% | 100% | Conductor matched pole type construction |
| Distribution Transformers | 262 | 257 | 5 | 1.9% | 98.1% | Transformers had been upgraded since field inspection |

| | No of Samples | No of Correct Samples | No Wrong Sample | % Error | % Correct | Comment |
|---|---|---|---|---|---|---|
| Line Capacitors | 11 | 10 | 1 | 9% | 91% | Additional capacitors since field inspection |
| Recloser / Sectionalisers | 5 | 5 | 0 | 0% | 100% | |

No adjustments to the counts were necessary as the inspections revealed a match between the Decorp pole map data and assets in the field.

**Table 5: Condition Assessment**

| Asset Type | Condition Rating |
|---|---|
| Steel Poles | Good |
| Concrete Poles | Good |
| Wood Poles | Fair |
| Conductors | Good / Fair |
| Line Transformers | Good |
| Capacitors | Good |
| Reclosers / Sectionalisers | Good |

### (ii) Decorp Non-Electrical System Assets

**Table 6: Sampling Results (to 95% confidence level)**

| Plant Account | No of Samples | No of Correct Samples | No Wrong Sample | % Error | % Correct |
|---|---|---|---|---|---|
| Furniture & Office Equipment / Communication Equipment | 90 | 90 | 0 | 0% | 100% |
| Machinery & Equipment | 80 | 80 | 0 | 0% | 100% |
| Computer Equipment & Peripherals | 78 | 78 | 0 | 0% | 100% |
| Transportation Equipment | 39 | 39 | 0 | 0% | 100% |

No adjustments were necessary as the inspection data matched with the Fixed Asset Register data.

### 3.2.3 Statement of Verification

On completion of the adjustments, the Consultant considered the Fixed Asset Register to be verified to within a statistical accuracy of 99% for substation equipment and to 95% for repetitive assets.

# 4. RECONCILIATION BETWEEN ODRC & PREVIOUS VALUATIONS

This section describes the previous valuation methodologies that have been applied to the Regulated Entities and how they relate to the ODRC methodology; in particular we highlight the main similarities and differences between the different valuation methods. Reconciliation is performed between the ODRC valuation, Historical Costs and Appraised Values as at December 31, 2002.

## 4.1.1 Background

Asian Appraisal Company Inc (AACI), Philippines, undertook Cost of Reproduction, New and Sound Value/Fair Market Value In Continued Use valuations for the Regulated Entities in 2002 for the purpose of rate setting.

The methodologies adopted were in accordance with the internationally accepted appraisal standards as stated in the Uniform Standards of Professional Appraisal Practice (USPAP).

## 4.1.2 Definitions

For the system fixed assets of the Regulated Entity, the Cost of Reproduction, New and Sound Value valuations were prepared as at the 31 December 2002. The two types of asset valuation approaches are defined below:

**Cost of Reproduction, New:** This value is defined as the estimated amount of money needed to acquire in like kind and in new condition an asset or group of assets, taking into consideration current prices of materials, labour, manufactured equipment, contractor's overhead, profit and fees, and all other attendant costs associated with its acquisition and installation in place, without provision for overtime or bonuses for labour, and premiums for materials.

**Sound Value/FMV in Continued Use: Th**is value is the Cost of Reproduction, New less accrued depreciation as evidenced by the observed condition of assets in comparison with new units of like kind tempered by consideration given to extent, character and utility of the property which is to be continued in its present use as part of a going concern, but without specific reference to earnings.

The Cost of Reproduction, New and the Sound Value/FMV in Continued Use valuations are a useful input into preparing the ODRC valuation, but there are some key differences to note.

## 4.1.3 Comparison with the ODRC

For a point of reference between previous valuations methods and ODRC the Cost of Reproduction, New is similar to the Replacement Cost input to the ODRC and the Sound Value/FMV in Continued Use is similar to the Depreciated Replacement Cost. The major differences being:

- the way the asset depreciation is calculated, and
- the removal of excess network capacity through optimisation.

For the Cost of Reproduction, New valuations prepared as at 31 December 2004, the undepreciated replacement costs were determined on an individual equipment item basis. Functional obsolescence was considered and this

approach is conceptually consistent with the Modern Equivalent Asset (MEA) approach used in the ODRC.

For the Cost of Reproduction, New depreciation is not applied, except for the case of some repetitive assets (everything expect zone substations).

For the Sound Value method, physical wear and tear or condition is included as an input in the valuation and hence the calculation of the depreciation is calculated on the remaining life which had been assessed as part of the valuation process. Assessing the remaining life is not a requirement of the ODRC method whereby asset condition is dealt with by determining a standard asset life. The advantage of using "Standard Asset Lives" under the ODRC method is that there is no subjectivity introduced between different appraisers. For major plant items it is very difficult to determine the condition without conducting an "intrusive" inspection of some type and this is clearly outside the boundaries of a valuation exercise.

## 4.2 LAND & BUILDINGS

For the land and buildings a valuation was prepared as of 31 December 2002.

### 4.2.1 Land

Land was valued on the basis of "Fair Market Value" which is the amount in terms of money which the property would bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and the seller, each acting prudently, knowledgeable and assuming the price is not affected by undue stimulus. As a result the Fair Market Value acknowledges that if the land was not used for network purposes it could be put to an alternative use.

The Market Data Approach method of valuation wherein actual sales and offered listings of properties within the vicinity was compared with the property under appraisal on the factors of location, size, shape of the lot, time element, utilization, improvements, terrain, bargaining allowance and other market constraints.

Historical Cost Indexation was used to arrive at the prevailing market value and was used if there was no available adequate market data on sales and offered listings that could be gathered on the property subject of appraisal.

**AACI has employed the Fair Market Value approach for valuing of land as at June 30, 2006.**

### 4.2.2 Improvements (Buildings and Other Land Improvements)

For the December 31, 2002 valuation, the value of the improvements was estimated by the use of the Cost Approach. Under this approach, an estimate was made on the current Cost of Reproduction, New of the improvements in accordance with the prevailing market prices for materials, labor, and contractor's overhead, profit and fees. Adjustments are then made to reflect depreciation resulting from the observed physical deterioration.

In estimating the Cost of Reproduction, New of the improvements, the Modified Quantity Survey Method was used. This method required an analysis of the improvements by breaking them down into major components such as foundation, columns, beams, floorings, walls, roofing, etc., using workable units

as lineal meter, square meter, cubic meter or other appropriate basic unit. Equally given importance were the interior finishes, i.e. floor finishes, wall finishes, ceiling finishes, etc.

Bills of quantities for each building component were developed on the basis of current costs of materials, labor, plant and equipment prevailing in the locality to arrive at the direct costs of the improvements, whereupon indirect costs such as contractor's profits, overhead, taxes and fees and other related expenses are then added.

**AACI has employed the Cost Approach for valuing of improvements as at June 30, 2006.**

## 4.3 SPECIALISED AND NON-SPECIALISED ASSETS

Non-system assets were listed and classified as either Non-Specialised Assets or Specialised Assets.

- Non-Specialised Assets are those assets that are not specific to the industry and would be readily acquired and disposed of in the ordinary course of business.

- Specialised Assets are those that exist for a purpose which is of particular advantage and may be unique to the industry, and/or those assets which are not normally traded in a secondary market place (except as part of a total entity by reason of their physical characteristics).

The valuation of Non Specialised Assets depends upon the manner in which the assets are acquired. The ERC Asset Valuation Guidelines state that where assets are normally acquired in a secondary market, the price of a second-hand asset is relevant in determining the value. Where assets are not normally acquired in a secondary market, the price of a new asset (adjusted to take account of service potential and the impact of other obsolescence factors) is relevant in determining the value.

For specialised plant, as there is no trading market for such assets, the appropriate value based upon the guidelines is the lower of the current replacement cost and the current reproduction cost. This is consistent with the Optimised Depreciated Replacement Cost method.

Having determined the appropriate classification and categorisation of the assets under the deprival value concept the following approaches were adopted:

**Table 7: Valuation Approach**

| Categorisation | Valuation Approach |
|---|---|
| **Non-Specialised** | Market Comparison Approach or Income Approach or Depreciated Replacement Cost Approach depending on availability of data |
| **Specialised** | Lower of the current replacement cost and current reproduction cost |

These approaches were employed for the December 31, 2002 valuation.

The non-network assets were valued in accordance with the following categorization:

**General Plant (Non-network Assets)**

- Structures and Improvements (non-network related)
- Office Furniture and Equipment
- Transportation Equipment
- Stores Equipment
- Tools, Shop and Garage Equipment
- Laboratory Equipment
- Information systems equipment (non-network related)
- Power-operated Equipment
- Communication Plant and Equipment
- Miscellaneous Equipment

## 4.4 RECONCILIATION

The following Table contains a comparison of the ODRC valuation as at June 30, 2006 and the Reproduction, New and Sound Value valuations as at December 31, 2003.

**Table 8: Reconciliation**

| | Valuation Method | Dec 31, 2003 Php Million | Valuation Method | Jun 30, 2006 Php Million |
|---|---|---|---|---|
| Distribution Plant | Reproduction Cost, New | 814 | Replacement Cost | 1,243 |
| | Sound Value | 518 | ODRC | 900 |

| | Valuation Method | Dec 31, 2003 Php Million | Valuation Method | Jun 30, 2006 Php Million |
|---|---|---|---|---|
| General Plant | Reproduction Cost, New | 193 | Replacement Cost | 150 |
| | Sound Value | 163 | ODRC | 82 |
| Total | Reproduction Cost, New | 1,007 | Replacement Cost | 1,393 |
| | Sound Value | 681 | ODRC | 982 |

Table 8 contains values reported as at Dec 31, 2005. In the course of analysing the previous valuation it was determined that the Reproduction Cost, New value computed to be Php980 Million. It is this figure that is appropriate when making comparisons with the 2006 Replacement Cost and the comparisons in Section 4.4.1 are computed against this amount.

### 4.4.1 Distribution Plant Assets

In total the Distribution Plant asset valuation has increased by **26.8%** (RC / RCN Values) and **73.8%** (ODRC / Sound Value).

In the Philippines, CPI increases have averaged around 8% per annum, so it is to be expected that the increase between Dec, 2004 and June, 2006 could be as high as **20%** (~Php196M).

As discussed in Section 3.3 of the Replacement Costs report (refer Appendix B), commodity metals prices have increased substantially in the 12 months from mid 2005. PB Associates has not passed this price increase through to 2006 replacement costs in full, but has allowed an escalation in keeping with CPI.

Decorp invested ~ Php100Million per annum in 2005. Accordingly, we would expect to see an increase in value of the Reproduction Cost, New of more than Php200Million.

In total we would expect to see an RCN to RC increase of Php400Million or **41%**. The actual increase is **26.8%** or **14.2%** below expectation. Clearly escalation has not been a significant factor in the increase in replacement costs during the last 2 ½ years.

### 4.4.2 General Plant Assets

In total the General Plant asset valuation has decreased by **22%** (RC / RCN Values) and **49.7%** (ODRC / Sound Value). These decreases show that Decorp has not been investing in general plant assets during the last two and a half years and that the weighted average age of the assets has been increasing. In general the remaining life of General Plant assets can be seen to be much lower than the standard life.

### 4.4.3 Overall Considerations

#### a) Depreciation Allowance - 5% residual on ORC

We estimate that this new depreciation allowance has added a total value of approximately Php50 Million.

This residual was not applied for the 2004 valuation. It is meant to ensure that assets with service potential are not retired at the expiry of their economic life, in which case the DU would need to invest new capital.

**b) Longer Asset Lives**

Some asset lives have been lengthened, but this has not had a material impact on the valuation total. Note that the Sound Value is an appraised value that takes into account observed condition; it has the effect of adjusting depreciation such that it is no longer a straight line approach. The increase in appraised values (lower depreciation) demonstrate that the asset lives used for the 2004 valuation (tax lives) were considered shorter than the economic lives.

## APPENDIX A
## DWRG – APPENDIX G

| | | Depreciated Historical Cost | HC Weighted Average Age of Asset Category | Replacement Cost | Optimised Replacement Cost | Optimised Depreciated Replacement Cost | HC Weighted Average Asset Life (Tax Purpose) | ODRC Weighted Average Age of Asset Category | ODRC Weighted Average Asset Life (Regulatory Purpose) |
|---|---|---|---|---|---|---|---|---|---|
| **A.** | **Distribution Plant** | | | | | | | | |
| A1 | Land and Land Rights (Distribution Purpose) | | 10.89 | 46,825,000 | 46,825,000 | 46,825,000 | 30.00 | 11.62 | |
| A2 | Structures and Improvements (Distribution Purpose) | | 9.65 | 6,851,000 | 6,851,000 | 4,594,831 | 40.00 | 9.45 | 40.00 |
| **A3** | **Station Equipment** | | | | | | | | |
| A3A | Power transformers | | | 85,758,100 | 85,758,100 | 69,329,030 | | 8.09 | 45.00 |
| A3B | Switchgear | | | 46,014,400 | 46,014,400 | 36,281,127 | | 5.89 | 30.00 |
| A3C | Protective equipment | | | 45,355,515 | 45,355,515 | 38,196,533 | | 4.46 | 30.00 |
| A3D | Metering & control equipment | | | 0 | 0 | 0 | | | |
| A3E | Communications equipment | | | 19,198,862 | 19,198,862 | 15,690,602 | | 2.74 | 15.00 |
| A3F | Other station equipment | | 4.28 | 14,681,491 | 14,681,491 | 11,077,134 | 30.00 | 6.89 | 30.00 |
| A4 | Poles, Towers and Fixtures - Distribution | | | 322,178,530 | 322,178,530 | 235,432,305 | | 5.46 | 36.67 |
| A5 | Poles, Towers and Fixtures - Customer | | | 0 | 0 | 0 | | | |
| A6 | Overhead Conductors and Devices - Distribution | | | 187,902,291 | 165,204,891 | 138,898,187 | | 4.98 | 35.00 |
| A7 | Overhead Conductors and Devices - Customer | | | 0 | 0 | 0 | | | |
| A8 | Underground Conduits - Distribution | | | 0 | 0 | 0 | | | |
| A9 | Underground Conduits - Customer | | | 0 | 0 | 0 | | | |
| A10 | Underground Conductors and Devices - Distribution | | | 0 | 0 | 0 | | | |
| A11 | Underground Conductors and Devices - Customer | | | 0 | 0 | 0 | | | |
| A12 | Line Transformers - Distribution | | | 180,825,710 | 158,472,575 | 108,266,032 | | 6.66 | 30.00 |
| A13 | Line Transformers - Customer | | | 0 | 0 | 0 | | | |

| | | Depreciated Historical Cost | HC Weighted Average Age of Asset Category | Replacement Cost | Optimised Replacement Cost | Optimised Depreciated Replacement Cost | HC Weighted Average Asset Life (Tax Purpose) | ODRC Weighted Average Age of Asset Category | ODRC Weighted Average Asset Life (Regulatory Purpose) |
|---|---|---|---|---|---|---|---|---|---|
| A14 | Power Conditioning Equipment | | | 37,766,880 | 37,766,880 | 30,751,622 | | 6.13 | 35.00 |
| A15 | Services | | | 26,927,554 | 26,927,554 | 20,816,409 | | 5.66 | 30.00 |
| A16 | Meters, Instruments & Metering Transformers-distribution | | | 215,022,116 | 215,022,116 | 137,563,113 | | 6.66 | 25.00 |
| A17 | Meters, Instruments & Metering Transformers - customer | | | 0 | 0 | 0 | | | |
| A18 | Information technology equipment (distribution) | | | 0 | 0 | 0 | | | |
| A19 | Regulated Entity Property on Consumers' Premises | | | 0 | 0 | 0 | | | |
| A20 | Street Lights and Signal Systems | | | 7,099,344 | 7,099,344 | 6,097,170 | | 4.04 | 30.00 |
| A21 | Submarine Cables | | | 0 | 0 | 0 | | | |
| | **General Plant** | | | | | | | | |
| B1 | Land and Land Rights (non-network) | | 37.04 | 42,986,000 | 42,986,000 | 42,986,000 | 30.00 | 27.36 | |
| B2 | Structures and Improvements (non-network) | | 9.77 | 36,452,000 | 36,452,000 | 15,056,765 | 40.00 | 16.55 | 40.00 |
| B3 | Office Furniture and Equipment | | 4.16 | 12,774,600 | 12,774,600 | 4,616,055 | 10.00 | 4.48 | 10.00 |
| B4 | Transportation Equipment | | 4.27 | 38,131,000 | 38,131,000 | 11,530,610 | 8.70 | 3.99 | 8.73 |
| B5 | Stores Equipment | | | 0 | 0 | 0 | | | |
| B6 | Tools, Shop and Garage Equipment | | 4.42 | 11,680,800 | 11,680,800 | 5,879,274 | 20.00 | 5.49 | 20.00 |
| B7 | Laboratory Equipment | | | 0 | 0 | 0 | | | |
| B8 | Information systems equipment (non-network) | | 2.93 | 8,395,200 | 8,395,200 | 2,102,674 | 5.00 | 2.18 | 5.00 |
| B9 | Power-operated Equipment | | | 0 | 0 | 0 | | | |
| B10 | Communication Plant and Equipment | | | 0 | 0 | 0 | | | |
| B11 | Miscellaneous Equipment | | | 0 | 0 | | | | |
| C. | **Materials and Supplies (including spares)** | | | 0 | 0 | 0 | | | |

| | | Depreciated Historical Cost | HC Weighted Average Age of Asset Category | Replacement Cost | Optimised Replacement Cost | Optimised Depreciated Replacement Cost | HC Weighted Average Asset Life (Tax Purpose) | ODRC Weighted Average Age of Asset Category | ODRC Weighted Average Asset Life (Regulatory Purpose) |
|---|---|---|---|---|---|---|---|---|---|
| D. | Transferred subtransmission assets | | | 0 | 0 | 0 | | | |
| E. | Allocated Overheads Capitalized | | | 0 | 0 | 0 | | | |
| | Totals | N.A. | | 1,392,826,393 | 1,347,775,859 | 981,990,473 | | | |

## APPENDIX B
## DECORP REPLACEMENT COST REPORT

## APPENDIX C
## DECORP OPTIMISATION REPORT