

# Performance Based Regulation of Philippines Electricity Distribution Companies

## REGULATORY TRAINING COURSE

Cebu – November 5 & 6, 2007  
Baguio – November 8 & 9, 2007

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### SESSION 4C : OPERATIONS AND MAINTENANCE EXPENDITURE FORECASTING



# Overview

This presentation will consider:

- Types of expenditure that can be included as OPEX in the revenue application;
- Preparation of the OPEX forecast;
- Justification of forecast OPEX;
- The expenditure review process;
- Issues that arose at the first entry point including:
  - residential meter testing costs;
  - expenditure on related business activities;
  - WESM costs; and
  - transitional timing issues.
- Taxes (other than corporate income tax), levies & duties

# Regulated and Unregulated Expenditure

- Expenditure can be categorized as:
  - Regulated or unregulated;
  - Capex or opex.
- For the purposes of the PBR process, regulated expenditure includes **ONLY** expenditure that:
  - is required for the *efficient* provision of regulated distribution services; *and*
  - cannot be legally recovered from any source other than through the regulated distribution wheeling rate.
- Only regulated expenditure can be included in the ARR forecast.
  - An important component of the expenditure review is ensuring that any unregulated expenditure is removed from the forecast.
  - This applies to OPEX as well as CAPEX.

# OPEX

- OPEX is regulated expenditure that relates to the day-to-day provision of regulated distribution services, which does not involve creation of assets.
- For the purposes of a revenue application OPEX includes:
  - Costs associated with operations and maintenance of the distribution system;
  - Customer management costs – meter reading, billing etc;
  - Overhead costs but only to the extent that they relate to the provision of regulated services and are not allocated to capex; and
  - WESM costs, but only to the extent that these costs cannot legally be recovered from another source.
- In the ERC's regulatory model, OPEX expenditure is fully recovered in the year in which it is forecast to occur.
- Some OPEX expenditure, including customer management and WESM costs, do not relate directly to the provision of distribution services but can be included in a revenue application because there is no other source through which these costs may be recovered.

# Costs that may be included in the OPEX forecast

## Distribution System Operations:

- Planning, management and supervision of system operations;
- Network development and planning (excluding detailed design and engineering work that follows the allocation of funds for the creation of a new system asset);
- Load dispatching and control room operations;
- Operation of field assets;
- Installation, testing and removal of customer metering and maintenance of metering asset database;
- Provision of services to consumers, including inspection, connection and disconnection, and maintenance of consumer connection assets (but only to the extent that is work cannot be recovered directly from the consumer or other sources);
- Rental of property used in connection with the distribution system;
- Operation and management of geographic information systems, asset databases, fault monitoring and recording, and network performance data records;
- Miscellaneous operational costs – including the management of distribution system records.

## Costs that may be included in the OPEX forecast (cont'd)

### Distribution System Maintenance

- Maintenance supervision and engineering;
  - Maintenance of distribution system assets;
  - Maintenance of the IT systems directly associated with the management of the distribution network;
  - Maintenance and repair of consumer meters;
  - Maintenance of distribution plant.
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- As a general rule, all costs directly associated with the maintenance of existing network assets should be classified as maintenance. All other costs directly associated with the management of the distribution network should be classified as operations.

# Costs that may be included in the OPEX forecast (cont'd)

## Consumer Management

- Supervision of consumer accounting and collection;
- Meter reading;
- Maintenance of billing system and other account related IT systems;
- Costs associated with the general management of consumer accounts;
- Losses due to uncollectable accounts;
- Informational and instructional advertising costs;
- Miscellaneous consumer management costs.

# Costs that may be included in the OPEX forecast (cont'd)

## Administration and General

- Administrative and general salaries;
- Office supplies and expenses;
- Management and operation of IT systems such as payroll and personnel;
- Outside services employed;
- Property insurance;
- Injuries and damages;
- Employee pensions and benefits;
- Regulatory liaison and compliance (excluding costs included in levies);
- Rents (except for property directly associated with distribution system operations and maintenance);
- Officers allowance and benefits;
- Travel expenses;
- Training expenses;
- Miscellaneous general expenses.

Admin & general expenses generally include overhead costs for provision of regulated distribution services that cannot be directly attributed to distribution system operations and maintenance or to consumer management.

# Costs that may be included in the OPEX forecast (cont'd)

## WESM Costs

- Market fees – only where approved by ERC and payable directly to the market operator. (See P 103 of DWRG Position Paper);

## Bad Debts

- Costs associated with the collection of bad debts (excluding the actual write-offs, which are charged to uncollectable accounts under consumer management expenses).

# Issues with OPEX Costs

- OPEX forecasts are generally based on a top-down projection of actual or historic costs rather than bottom up estimates.
  - Hence for accurate forecasting, actual or historic costs must be correctly allocated.
  - Appendix C of the Position Paper gives cost allocation rules.
- OPEX costs largely comprise salary, wages, and other personnel related costs.
- If the OPEX forecast is to be consistent with cost allocations in accordance with Appendix C of the Position Paper, then salary and wages costs need to be allocated accordingly.
  - It is not clear to us that this always happens.

# Issues with OPEX Costs (cont'd)

## Examples:

- Are salary and wage costs charged directly to the correct account in accordance with Appendix C of the Position Paper?
  - Administrative and general salary and wages can be charged to a single bucket account.
  - However salary and wages associated with distribution network operation and maintenance, and consumer account management must be disaggregated according to the actual activity being performed.
  - If the utility's financial system does not do this directly, then how have the actual costs provided in the application been derived? How accurate are these costs?
- How are the costs associated with in-house staff undertaking the detailed design or installation of new assets allocated?
  - These costs should be capitalised. However, we understand that many utilities allocate ALL in-house staff costs to OPEX accounts.

## Comments on OPEX Costs (cont'd)

- How are the costs of external contractors allocated?
  - Are contractor costs associated with the creation of new assets charged to CAPEX or OPEX accounts?
  - Are contractor costs associated with distribution systems operations and maintenance charged to a distribution system account or to the “Outside Services Employed” account in the Admin and General Category?
- How are the costs of running the store been allocated?
  - If all costs associated with managing the store are charged to OPEX accounts then storage costs should not be included in the replacement costs used for valuing the regulatory asset base.
- How are the costs associated with network development and planning allocated?
  - These costs are not adequately covered in the account descriptions in Appendix C of the Position Paper.
  - Are the costs of staff involved in detailed design separated out and charged to CAPEX accounts

## Issues with Opex forecasts provided to date

- We had some concerns about the accuracy of the OPEX forecasts provided with the first entry point revenue applications.
- We suspected that the OPEX forecasts included costs that were also included in the CAPEX forecasts.
  - These costs were installation costs rather than equipment costs.
- We had difficulty getting satisfactory information from the utilities on these issues.
  - We believe that this was not because the utilities were trying to hide anything but because of the constraints imposed by the evidential requirements of the legal process.

# Preparation of OPEX Forecasts

Our suggested process for developing an OPEX forecast is as follows:

1. Prepare a schedule of actual costs for a base year in accordance with the template breakdown and the cost descriptions in Appendix C of the Position paper.
  - This should exclude all CAPEX costs.
  - Utilities should be prepared to answer questions during review on the process used to derive this schedule from the information in its financial accounting system.
  - Utilities should also be able to explain any significant deviations from historic trends.
  
2. For each line item specify the major cost driver(s) and the escalation factor reflecting the sensitivity of the cost to each driver.
  - Line items comprising largely fixed costs will have a low sensitivity and those with largely variable costs a higher sensitivity.
  - Sensitivities should generally be  $<1$ . See clause 4.13.3 of the RDWR.

# Preparation of OPEX Forecasts (cont'd)

## Example of Cost Driver and Escalation Factor

### Consumer Accounts Expenses

Account	Cost Driver	Escalation Factor	Comment
Sepervision	Customer numbers	0.40	Some economies of scale
Meter Reading	Customer numbers	0.95	Limited scope for efficiencies.
Information Technology	-	0.00	Cost fixed unless new systems introduced.
Consumer Records and A/C Collection	Customer numbers	0.85	Some scope for process improvement
Uncollectable Accounts	Energy sales	1.10	Uncollectable accounts may rise with increased rates.
Informaitonal and Instructional Advertising	-	0.00	Fixed cost
Miscellaneous Expenses	Customer numbers	0.85	Some scope for process improvement
Consumer Prompt Payment Discount.	Energy Sales	0.80	Prompt payment discounts reduce with increased rates

## Preparation of OPEX Forecasts (cont'd)

3. Escalate each line applying the formula:

$$F_n = F_{n-1} \times (1 + D_n/D_{n-1} \times EF)$$

where:

$F_n$  = Forecast for year (n)

$F_{n-1}$  = Forecast for year (n-1)

$D_n$  = Value of driver in year (n)

$D_{n-1}$  = Value of driver in year n-1

EF = Escalation factor

## Preparation of OPEX Forecasts (cont'd)

4. If *real* changes in the unit costs of labor and materials are anticipated a further adjustment to each line item is necessary.
  - Disaggregate each line item forecast in step 3 into labor and materials
  - Escalate each component in accordance with its relevant cost escalation factor.
  - Reaggregate.
  - In the first entry point review, ERC allowed a cost escalation factor of 1% for materials. No labor cost escalation factor was allowed.
5. Repeat this process for all line items to produce a base opex forecast in real PhP.
6. Add any additional forecast expenses to the base forecast.
  - Additional expenses are those which are not included in the actual base year costs.
  - These expenses will need to be separately identified and justified in the revenue application.

# Justification of OPEX Forecast

We suggest the justification for the OPEX forecast include:

- A discussion of the base year forecast. This should demonstrate that the forecast is efficient, comparable with historic costs (after adjustment for inflation) and that it does not include costs that should be capitalised.
- A table showing the cost drivers and escalation factors used for each line item.
- Where appropriate, a justification for the cost drivers and escalation factors used for the different line items.
- A detailed justification for any material or labor cost escalation factors.
- A detailed discussion of any additional expenditures included in the forecast.

# OPEX Expenditure Review - Objective

- The OPEX review is intended to ensure that the operations and maintenance expenditure forecast:
  - includes only *regulated* expenditure;
  - includes only expenditure *necessary* for the provision of regulated distribution services of a quality that meets customer expectations and the requirements of the Philippines Distribution Code;
  - Is reasonably efficient and reflects appropriate efficiency improvements over the course of the second regulatory period; and
  - does not include costs that are also provided for in the CAPEX forecast.

# OPEX Expenditure Review

- For the first entry point utilities the review process used by PB for two of the three utilities reflected the lack of information provided and the lack of confidence in the utility forecast. The process involved:
  - A efficiency review of the base year. CY 2006 budget was taken as the base year in both cases.
  - Escalation of the base year costs using PB's own model. PB made its own judgement as to appropriate cost drivers and efficiency factors.
  - Modelling was undertaken at a category rather than line item level.
  - A materials cost escalation factor of 1% was allowed. No labor cost escalation was applied.
  - Additional expenditures proposed by each utility and were assessed and added in manually to the PB derived base forecast to the extent considered appropriate.
- The third utility provided us with the model that it used to derive its OPEX forecast and this was reviewed in detail. In this case the PB model was not used for the review.

## OPEX Expenditure Review (cont'd)

- Cost drivers for some line items are likely to relate to the size of the asset base rather than customer numbers or electricity sales.
  - In such cases the review is likely to adjust the OPEX forecast to take account of changes to the asset base size resulting from any differences between the CAPEX forecast and the allowed capital expenditure.
- If the basis for the OPEX forecast provided in a revenue application was transparent, PB is unlikely to rely on its own modelling in preference to that of the utility.
  - This would not preclude PB from using its own model as a “sanity check” on the reasonableness of the modelling undertaken by the utility.

# Residential Meter Testing

- Section 2 of the Rules and Regulations of RA 7282 (the Anti-pilferage Act) requires biannual testing of residential customer meters. To date this requirement has not been enforced.
- All utilities submitted forecast costs associated with complying with this requirement as an additional expenditure (although one proposed 5-yearly testing). The additional costs were a significant component of the total OPEX requirement.
- In its final determination ERC allowed no costs associated with Anti-pilferage Act compliance testing on the basis that the testing requirement is currently under review.
- Should this review result in a modified requirement that the ERC decides to enforce then we would expect any additional expenditure required to comply with the new requirement to be treated as a pass through.

# Related Businesses Activities

- Related business activities refer to work undertaken by the regulated distribution business where costs are recovered through sources other than the regulated wheeling rate.
- These activities fall into two categories:
  - Activities unrelated to electricity distribution, but which use regulated business assets. Examples include rental of pole space to communication businesses.
  - Regulated distribution activities where the costs can be recovered from a third party, such as the customer benefitting from the activity. An example is customer connection and disconnection.
- Historically there has been no provision for utilities to recover regulated distribution costs directly from customers. However with the progressive implementation of DSOAR utilities are able to apply to ERC to charge customers for such services. Some utilities have already applied to the ERC for approval to recover some distribution costs directly from customers.

## Related Businesses Activities (cont'd)

- If the revenue requirement is calculated on the basis that all such services are funded from the wheeling rate, and ERC subsequently allowed customers to be charged directly, utilities will be paid twice for the same work.
- To avoid this situation arising, distribution operation and maintenance opex was reduced by 1% of the forecast requirement in Year 1, rising to 4% in Year 4.
- This should also give utilities an incentive to proactively prepare for the implementation of DSOAR.

## WESM Costs

- Appendix C of the Position Paper provides for certain WESM costs to be recovered through the distribution wheeling rate.
- These costs were intended to allow utilities to recover costs the distributor was required to pay the market operator and were specifically limited to amounts approved by the ERC.
- During the review ERC clarified the WESM related costs that could be legitimately included in a revenue application. This decision essentially limited the recoverable costs to the WESM registration fees.
- Costs associated with the provision of security cannot be included in the forecast as security deposits earn interest, which is passed through to participants.

## WESM Costs (cont'd)

- Billing and settlement costs cannot be included as these costs are charged to generators rather than distributors
- The definition in Appendix C of the Position Paper could be revised to avoid possible confusion.
- This does not preclude a utility including internal costs driven by WESM operation in the forecast as an additional expense. However it would need to show that:
  - The relevant costs were not included in the base year;
  - Additional expenditure was *actually* being incurred. WESM purchases replace electricity previously procured from other sources so Related internal costs are not necessarily “additional”.
  - The costs cannot legitimately be recovered from another source.

# Transitional Timing Issues

- The fact that a regulatory year may not align with a calendar year can complicate the review.
- For the first entry point the utilities financial year ended on 31 December 2006 but the second regulatory period did not begin until 1 July 2007. Utilities were required to provide the following separate forecasts:
  - CY 2006 (year to 31 December 2006),
  - RY 2007 (year to 30 June 2007)
  - CY 2007 (year to 31 December 2007)
  - RY 2008 (year to 30 June 2008).
- The six month overlap between RY2007 and CY 2007 was problematic as expenditure between 1 July 2006 and 31 December 2007 were reported in two different periods.
- The expenditure templates will be amended to report as follows (using for this example the First Entry Group dates):
  - CY 2006
  - 6 months to 1 July 2007
  - RY 2007

# Taxes, levies & duties

- Expenses related to taxes (other than corporate income tax), levies & duties can be recovered under the RDWR
- The approach to justify this expenditure is similar to that discussed before for the Opex
  - Expenditure will generally be justified based on an efficient base year and applying cost drivers and escalation factors
  - Special/unusual expenditure should be separately indicated & justified

## Taxes, levies & duties – some issues

- Cost for the regulatory reset process should be included as a levy
  - This includes the estimates for the overall entry process costs
  - Full details of this will be provided by the ERC
- Franchise duties or taxes cannot be recovered under distribution rates
- Taxes, levies or duties still in dispute, cannot be included in the expenditure forecasts
  - If these eventuate and are material, mechanisms exist for inclusion

# Thank You

Any more questions?

