# <u>Tracking Renewable Energy and Energy Efficiency Investments in IFC</u> (Revised November 2008)

# **Basic Definitions:**

# <u>Energy Efficiency (EE)</u>

Energy Efficiency refers to investments in equipment, systems, and services which result in a reduced use of energy per unit of product or service generated.

This can include investments in processes which reduce the energy used by specific devices and systems, typically without affecting the services provided, or which expand the services provided wherein less energy is used per unit of service provided.

Typically, this might include

- i. investments in energy efficient equipment or processes;
- ii. investments in energy efficiency businesses and financing mechanisms (including ESCOs); and
- iii. investment to rehabilitate equipment and systems such as to improve energy efficiency of existing equipment or processes.

## Renewable Energy (RE)

Renewable Energy is defined as investments in equipment, systems and services which enable the productive use of energy from renewable resources.

Examples include energy from wind, solar, geothermal, biomass, and hydropower.

# Basic Methodology Used

- Review IFC commitments for the time period under consideration; CES investment support specialists or investment department industry specialists and IOs identify committed investment projects which included a renewable energy/ energy efficiency component.
- Conduct subjective review of those projects identified in order to determine what percentage of the full investment cost of each project directly supported the RE/EE component:
  - Depending on the detail of knowledge required and ease of review, the determination is made with the assistance of the E&S specialist, the engineer, or the investment officer on the project, as well as a review of available project documents.

- Calculate the level of RE/EE investment as a share of the total project costs for all projects with RE/EE component. This is based on the aggregation of the RE/EE investment valuations associated with the <u>RE/EE project weightings</u> for each project.
- Calculate a proxy amount of <u>direct</u> *IFC investment* in EE and RE by pro-rating the total amount of EE and RE investment by the percentage of total project cost represented by amount of IFC's direct investment (A+C loans + equity) commitment in the project.

Example of Pro-rating

Total Project Cost= \$ 100The cost of the EE component= \$ 30IFC A Loan for the Project= \$ 40

Percent of EE component to project cost = (30/100) x 100 = 30% Therefore IFC prorated investment in this EE component = = 30% of \$40 = \$12

• Adopt conservative estimates and assumptions, with the view that these numbers are fully defensible.

# **RE/EE** Weightings

Note:

- The values reflect the amount invested in RE/EE component.
- Weightings do not reflect how much energy was saved.
- They only refer to how much money was directly used for the portion of the project which generates energy savings or the portion of the project which generates energy from renewable resources.

# A. EE/RE for inclusion in the projections in the Business Program template:

## **Renewable Projects**

# Renewable Energy Generation Projects:

The investment made for energy generation using renewable sources such as Hydro, Wind, Solar, Tide, Geothermal etc will be counted as full or 100% weighting for the investment.

In the event that the project costs include components in addition to that of developing a renewable energy project, the 100% weighting is attributed only to value of the identified project component for wind farm/ hydropower development.

#### Energy Generation through Bio-Mass:

Bio-Mass projects are counted as Renewable Energy projects, weightings will be calculated on a project by project basis following consultations to determine the percentage of the total project cost attributed to these biomass measures.

For example, a project focuses on capturing methane from pig farms associated with decomposition of manure; however, only 5% of the installations to date have made productive use of the methane – the remainder simply flare the gas. While 100% of the sites yield GHG emissions reductions, only 5% were counted as renewables. If all the methane was productively used then 100% weighting would have been given.

## **Bio-fuels:**

Bio-fuel use in transport are viewed to be RE and get full weightings

Bio-fuel production will be have to be assessed according to the sustainability of the bio-fuel production. This is due to the fact that net benefits of biofuels production vary by market, technology, and fuel feedstock. These projects will be reviewed carefully on a case by case basis to ensure that projects are being implemented in a way that results in a net decrease in GHG emissions, at which point they can be included as renewable energy projects.

## **Energy Efficiency Projects**

## Increase in Process Efficiency

Investment in projects which will make the process more energy efficient, this will include examples like furnace technology change in Soviet era steel mill, upgrading and retrofitting a cement plant, retiring of old less efficient technology & replacement by new.

The weightings for these projects will dealt with on a case by case basis, the general principle in assigning weight for the EE component will be the percentage of project cost required to install the new technology. For example, a new furnace cost \$30 million and the total project cost is \$120 million (which includes other things aside from the furnace change) then the weight for the process efficiency will be 25% i.e. (30/120).

#### Industrial Process Change

Industrial Process Change is where plant of a higher production capacity but higher efficiency replaces an existing production line (with old units being retired) the weighting to be allocated in the proportion of old capacity to new capacity. e.g. company producing 40 widgets increases production to 70 widgets. Investment costs for EE to be apportioned 40/70 x total investment cost.

#### Facility Replacement

If a new facility replaces an old facility – regardless of location of the old facility – and the closing of the old facility can be documented as linked strategically by the sponsor to the new facility, then that new facility shall be treated for purposes of this exercise as an Industrial Process Change. The weightings described above shall be valid for this as well.

## Electricity/Gas - Generation and Distribution Efficiency:

For investments in replacement of gas/electricity distribution equipment or renovation of existing equipment, thus *reducing system losses and improving system efficiency*, a 100% weighting is attributed to that share of the project cost earmarked for this purpose.

The project appraisal documentation for these investments should note the substantial *leakages/losses* that are addressed by these gas/electrical system renovations, as well as the energy savings associated with equipment renovation such increase in transformer efficiency, pump and motor efficiency.

For investments in new gas/electricity distribution or expansion of existing distribution infrastructure to include more customers will not be counted as EE.

# **RE/EE Hybrids:**

## **Cogeneration:**

The investment made for installing and expanding Cogeneration or Combined Heat and Power (CHP) will be counted in full. The weightings will be assigned as the rule stated above, wherein only the component cost of the CHP will be recognized.

But categorizing the investment in terms of RE or EE will depend on the fuel/thermal source. For example if the fuel is biomass, sustainable biofuel, biogas etc then it will be counted as RE, but if the fuel is Natural Gas, flared gas, waste heat recovery then it will be counted as EE

#### **RE/EE** Financing through FIs and Funds

IFC's investments in dedicated RE/RE funds which are executed by financial intermediaries are captured. These amounts are attributed to "direct IFC investment in RE/EE". In this case the amount that is earmarked for RE/EE will be counted for the exercise. For example, a credit line was approved for a

Sustainable Credit line with a partner. The sustainable credit line deals with everything from energy to biodiversity, but it was seen that \$30 million was earmarked for EE and \$30million was earmarked for RE. Therefore, only \$60 million was counted

IFC does not currently capture the level of RE/EE mobilized through the IFC's commitment in managed funds. Neither do we capture the RE/EE project investments financed by financial intermediaries (and the associated co-financing of these "sub-projects") to whom IFC has provided financing or guarantees.

# **B:** Additional Climate Change categories for inclusion in the Strategy template or <u>annex:</u>

#### **Greenfield EE projects**

As mentioned above all the project included for EE are projects brownfield in which the energy performance is being improved from its present state of operation. The present energy consumption is used as the baseline to qualify the project as EE. In the case of a Greenfield projects this baseline does not exist, thus making it difficult to assess its claim for EE. At the present this lack of baseline has been the main reason that Greenfield projects have not been included.

Therefore, if the Greenfield project can establish a baseline (via country study) then it could be recognized as a category. For example, a baseline study shows that the average energy efficiency of similar projects in the country or region is X%, but the IFC project will be installed with a energy efficiency performance greater than X% then it could be counted.

#### **RE Technology Manufacturers:**

Investments in companies that produce RE equipment can be recorded as a separate Renewable Energy category. The weighting attributed to the project investment will be need to be decided on an case to case basis, depending on how the funds are allocated within the manufacturing process.

For example, an investment in a company producing exclusively Solar PV will get 100% weighting, while on the other hand if a company produces bio-mass boilers as well as fossil boilers, then the weighting will have to be assessed according to the actual or planned production volume of the Renewable component, therefore the weighting will be less than 100% of the project cost.

#### **EE Technology Manufacturers:**

Investments in companies that produce EE equipment like energy efficient motors, CFLs, Low-E glass etc. can be recorded as a separate Energy Efficiency

category. The weighting attributed to the project investment will be need to be decided on an case to case basis, depending on how the funds are allocated within the manufacturing process.

The same principle of production volumes, as stated RE Technology Manufacturers will be used for the assigning the weightings.

## **Other GHG emission reduction projects**

This may include carbon deals (purchase and sale of credits, Carbon delivery guarantee), methane reduction, sustainable forestry, etc.

# Departments' and Investment Officers' Responsibility

The projects are the responsibility of the departments and respective IOs, the inclusion or exclusion of project are also their responsibility and not that of CESCL. CESCL is only responsible for gathering the information and reporting it.

Therefore, the departments and IOs need to

- Document the RE/EE component of the project from its inception
- Make sure the environment specialist are kept in the loop about these RE/EE components
- Define the RE/EE component in both the board paper as well as PDS-commitment
- Attach additional information such as baseline study either in iDesk or in the documents listed above and,
- Consult with CESCL