Stakeholder Consultations for "Macroeconomic and analytic study focusing on benefits from Nepal- India electricity trade"

Under the South Asia Regional Initiative for Energy Integration (SARI/EI)

Location: Kathmandu Nepal

Dates: 18 - 19nd January 2016

Stakeholder Workshop 1: Focussing on TIMES model on Nepal Electricity Sector

Target Participants: Primarily officials from NEA and WECS Nepal, and stakeholders having interest in Nepal hydro/electricity sector.

Description of TIMES Modelling: TIMES is a technology rich, bottom-up model generator, which uses linear-programming to produce a least-cost energy system, optimized according to a number of user constraints, over medium to long-term time horizons. Further TIMES is used for the exploration of possible energy futures based on contrasted scenarios.

Agenda: This workshop will primarily focus on consultation with the stakeholders to undertake the following:

1) Consultation on Key Inputs to Nepal TIMES Model (electricity): The stakeholder consultation will include vetting of the key inputs by the industry experts. The key inputs into the Nepal TIMES model includes the following:

- Annual Electricity demand (2012 to 2042) and hourly load curve for 8760 hours (for base year 2012)
- Discount rate for model horizon
- **Inputs for Hydro Power Plants**
  - Segregation of Existing Hydro Power Plants into Run-Off-River (ROR), Pondage ROR (PROR) and Storage based power plants
  - Variation in generation from various types of hydro power plants (plant load factor)- monthly and daily variation (ROR, PROR and Storage)
  - Fixed Operation and Maintenance cost for all types of hydro power plants (ROR, PROR and Storage)
  - Capex for different types of upcoming power plants (ROR, PROR and Storage)
  - Expected plant life of different types of hydro power plants
  - Expected upcoming new hydro capacities (ROR, PROR and Storage) in future time periods
  - Share of Nepal in upcoming export oriented hydro power plants (including generation pattern of the export oriented power plants)
- **Inputs for Thermal Power Plants**:
  - Cost and Quantity of imported High Speed Diesel (HSD) and Furnace Oil (FO) consumed by thermal power plants
  - Efficiency and plant load factor of thermal power plants
  - Fixed Operation and Maintenance Cost and Capital Cost
  - Expected plant life of existing plants and plans for capacity addition in future
- **Inputs for Renewable Power Plants- Solar and Wind**
  - Grid Connected Solar and Wind Potential in Nepal
  - Variation in generation from various types of renewable plants (plant load factor)- monthly and daily variation

    - Capex and O&M for grid connected wind and solar power plants
    - Government plans for harnessing Solar and Wind potential in Nepal
- Dispatch characteristics of various type of power generation technologies in Nepal

2) Consultation on Results from Preliminary Work: Preliminary results such as energy generation, trade and shortages will be shared with the participants. Supply curve that highlights the potential of various technologies at various export prices also to be discussed during the workshop.

3) Inputs of Experts on Scenarios: For building various scenarios for Nepal Model, expert advice will be taken through the stakeholder consultation.