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BLACK & VEATCH



Renewable Energy Transmission Initiative Phase 1A Work Group Meeting 2

Black & Veatch

Phase 1A Work Group

February 7, 2008

Agenda

- Actions Taken Last Meeting
- Feedback on Wednesday's Generator Meeting
- Introduction to Assumptions
- Introduction to Methodologies

Actions Taken Last Meeting

- Reviewed work group objectives
- Reviewed Phase 1A scope of work
- Reviewed direction for Phase 1B
- Schedule agreed to: Thursdays, 9-10:30
 - Materials provided for review prior Tuesday
- Mike DeAngelis agreed to as spokesperson



Feedback on Wednesday's Generator Meeting

RETI Phase 1A – Scope of Work

 Literature review (delivered Jan. 22)

 Assumptions

 Methodology

 Resource screening by geographic region



Task 2. Assumptions

Task 2. Assumptions

- Financial assumptions for use in modeling
- Renewable energy incentives
- Renewable energy demand
- Transmission
- Economic assumptions to support resource valuation
- Renewable technology-specific assumptions

**We will expect general stakeholder buy-in
on all assumptions in Phase 1A**

Assumptions – Financial assumptions for use in modeling

- For each technology -
 - Ownership structure (IOU ownership, PPA, etc.)
 - Inflation
 - Debt to equity ratio
 - Debt interest rate
 - Equity return rate
 - Debt term
 - Tax rate
 - Project economic life
 - Discount rate

Example of the Form of Financial Assumptions

CONCEPTUAL – FOR EXAMPLE ONLY

Technology	Ownership	Project Life	Percent Debt	Percent Equity	Debt Term	Interest Rate	Cost of Equity	WACC	Tax Life	Tax Rate
Biomass Digester	IPP	15	70.0%	30.0%	10	8.0%	15.0%	10.1%	12	40.0%
Biomass Landfill Gas	IPP	15	70.0%	30.0%	10	8.0%	15.0%	10.1%	12	40.0%
Biomass Cofiring	Utility	20	70.0%	30.0%	20	7.5%	11.0%	8.6%	20	40.0%
Biomass Direct	IPP	20	70.0%	30.0%	15	8.0%	15.0%	10.1%	5	40.0%
Geothermal	IPP	20	70.0%	30.0%	15	8.0%	15.0%	10.1%	5	40.0%
Hydro	IPP	30	70.0%	30.0%	15	8.0%	15.0%	10.1%	20	40.0%
Solar Photovoltaic	Commercial	20	70.0%	30.0%	20	7.5%	11.0%	8.6%	5	40.0%
Solar Dish	IPP	20	70.0%	30.0%	15	8.0%	15.0%	10.1%	5	40.0%
Solar Trough	IPP	20	70.0%	30.0%	15	8.0%	15.0%	10.1%	5	40.0%
Concentrating Solar Photovoltaic	IPP	20	70.0%	30.0%	15	8.0%	15.0%	10.1%	5	40.0%
Transmission	Utility	20	70.0%	30.0%	15	8.0%	15.0%	10.1%	15	40.0%
Wind Offshore	IPP	20	70.0%	30.0%	15	8.0%	15.0%	10.1%	5	40.0%
Wind Onshore	IPP	20	70.0%	30.0%	15	8.0%	15.0%	10.1%	5	40.0%

Important to distinguish differences in technologies. For example, financing for wind projects is relatively mature and competitive

(Not yet reflected in table above)

Assumptions – Financial assumptions for use in modeling

- **Tasks**

-  **Working Group: Consensus on generation ownership assumption (TODAY)**

- IPP Ownership, except special cases (biomass cofiring, upgrading existing hydro, pre-existing projects, etc.)

-  Black & Veatch: Propose study-specific financial assumptions

-  Working Group: Brief review of financial assumptions

-  SSC Representatives: Technology-specific assumptions reviewed by appropriate stakeholders

Assumptions – Renewable energy incentives

- Federal production tax credit
- Federal investment tax credit
- Federal accelerated depreciation
- Substantive state-level incentives

Assumptions – Renewable energy incentives

- **Tasks**

-  **Working Group: Consensus on treatment of federal tax credits (TODAY)**

- Expire end 2008?
 - Expire end 2012?
 - Never expire?

-  **Black & Veatch: Identify and document substantive state-level incentives**

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Thank You!

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