

# Draft Electric Resource Plan 2009 – 2018 Technical Workshop



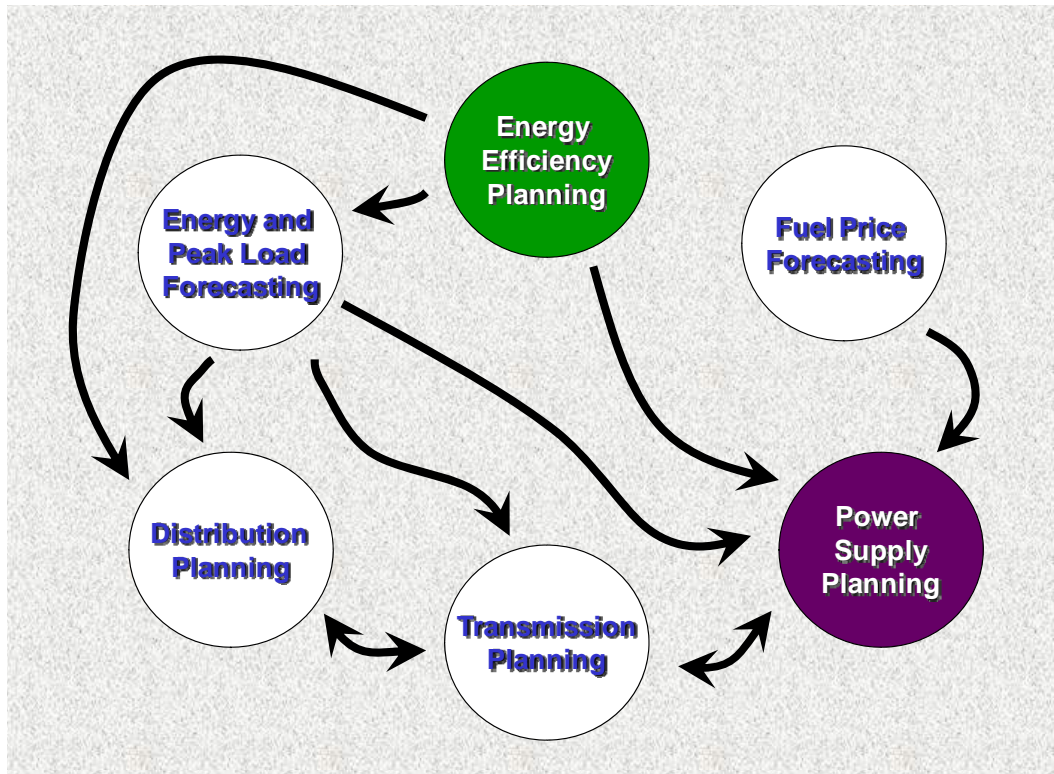
## Planning Process & Assumptions

**June 15, 2009**

# Planning Process & Assumptions

## Planning Process Overview

- The process is driven by a number of elements or sub-processes, including; energy and peak load forecasting, fuel price forecasting, power supply planning, demand planning, transmission planning, and distribution planning.



# Planning Process Overview

## T&D Planning Process

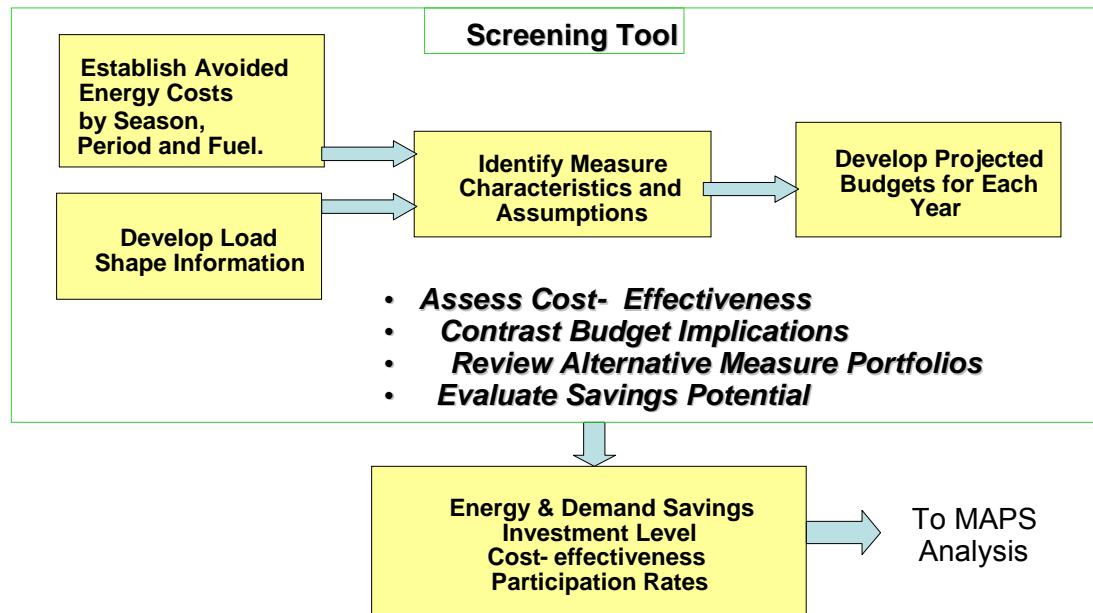
- The planning process for the T&D System begins with the load forecast. The load forecast at the system level is based on econometric models, and is developed as described earlier.
- Load forecasts are also developed for specific load areas using system load data acquired by the Energy Management System (EMS) and other systems in National Grid's T&D Operations.
- Underlying the aforementioned system and load area forecasts, is the development of a three year normalized load forecast for each distribution substation and circuit on the LIPA System.
- The resultant load forecasts are utilized in three types of planning studies which assess the ability of the T&D system to meet future customer load requirements. These are:
  - ▶ Long-range transmission studies - are completed for the 5 to 20 year forecast time frame and address the bulk transmission system and the underlying sub-transmission system.
  - ▶ Area studies - are generally for a 3 to 10 year forecast time frame and address specific load areas, including the area transmission system, substations and distribution feeders. Both of these types of studies are designed primarily to assess the ability of the system to deliver power to load centers and to serve customer load.
  - ▶ Interconnection studies - are designed to determine the required interconnection facilities and system reinforcements required for specific generation and transmission projects.

# Planning Process Overview

## Energy Efficiency Planning Process

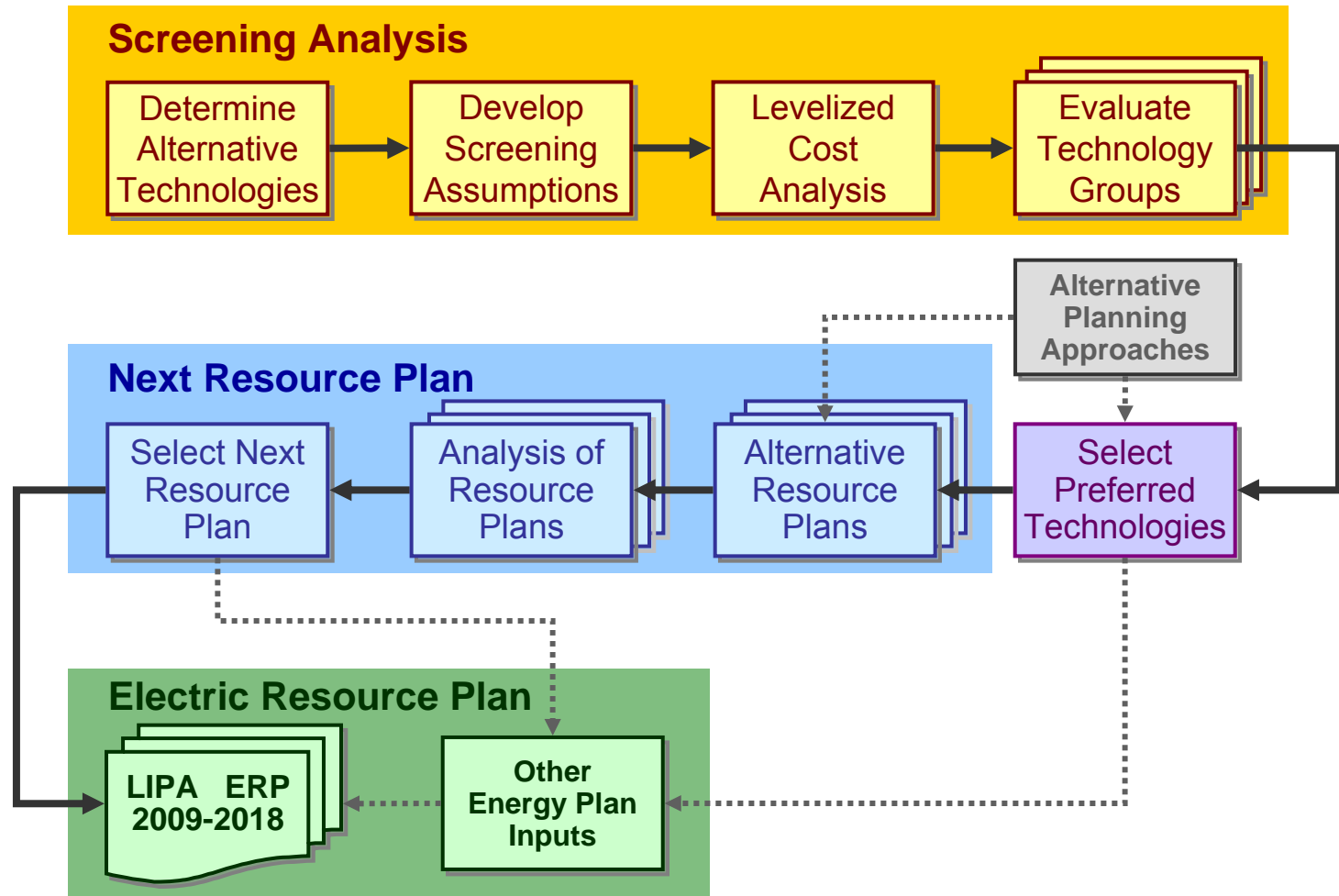
- LIPA's energy efficiency plan was developed to provide lower cost resources to serve customer needs. The efficiency plan has been developed through a review of LIPA's load shape to identify appropriate preferred solutions.

### Energy Efficiency Planning Framework



# Planning Process Overview

## Power Supply Process Flow Chart



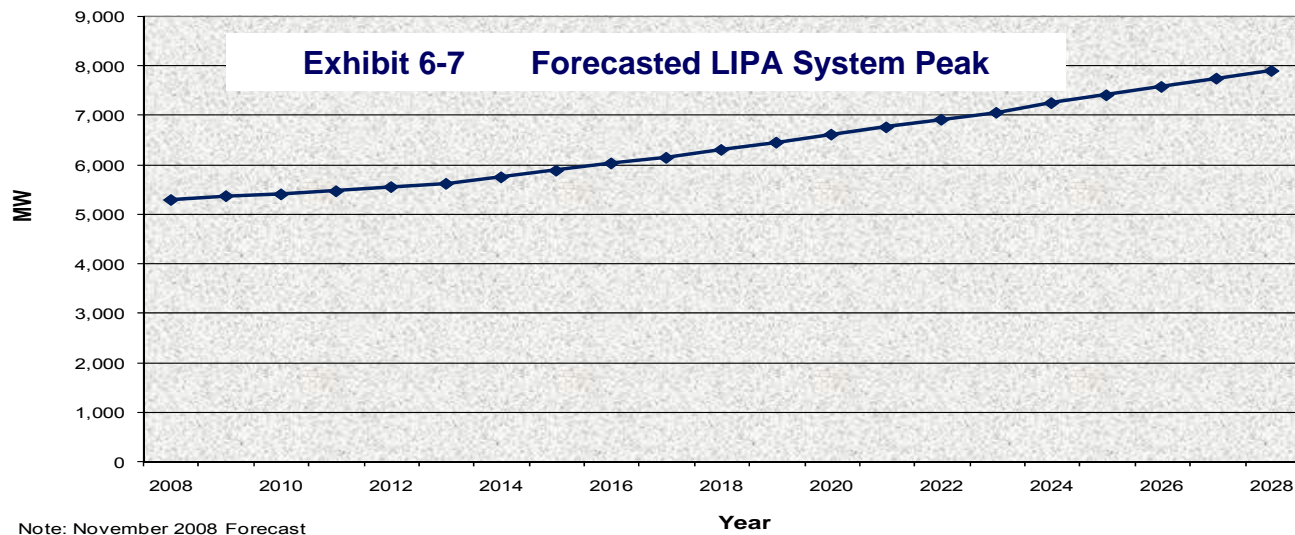
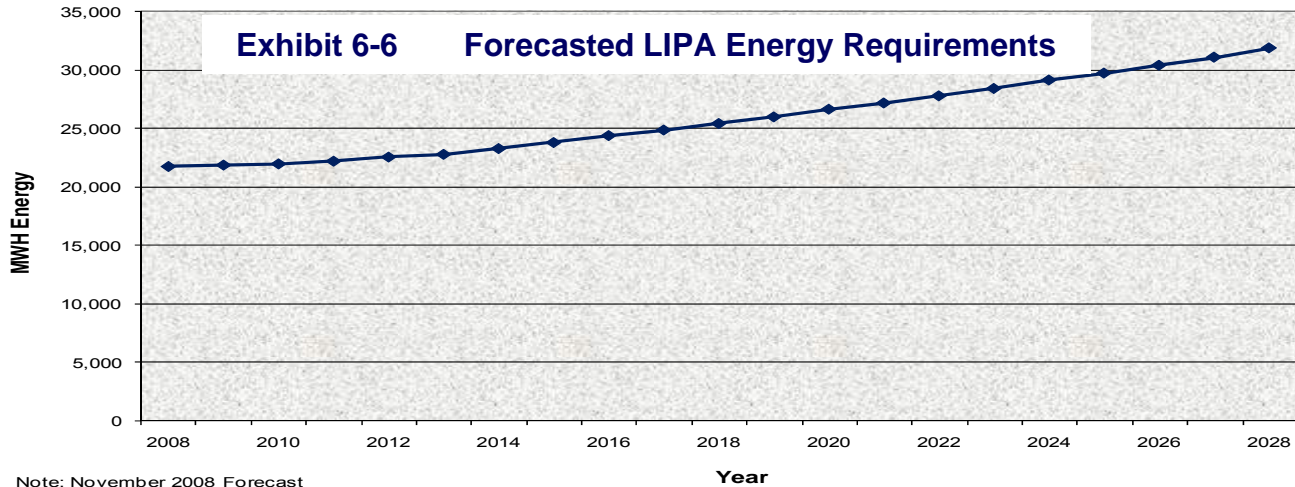
# Planning Assumptions

## Energy & Peak Load Forecast

- LIPA's 2009 – 2018 Electric Resource Plan used two forecasts in its development:
  - ▶ The “Comparison of Alternative Plans” was based on the November 2007 Load Forecast
  - ▶ The “Assessment of Need” was based on the November 2008 Load Forecast
- While the same methodologies were used to develop both forecasts, updated data available in 2008 resulted in a different forecast.
- Appendix A provides data and information regarding the forecasts prepared in November 2008 which is depicted in the following Exhibits 6-6 & 6-7. Exhibit 6-9 provides the results of the November 2007 forecast.

# Planning Assumptions

## Energy & Peak Load Forecast – Nov. 2008



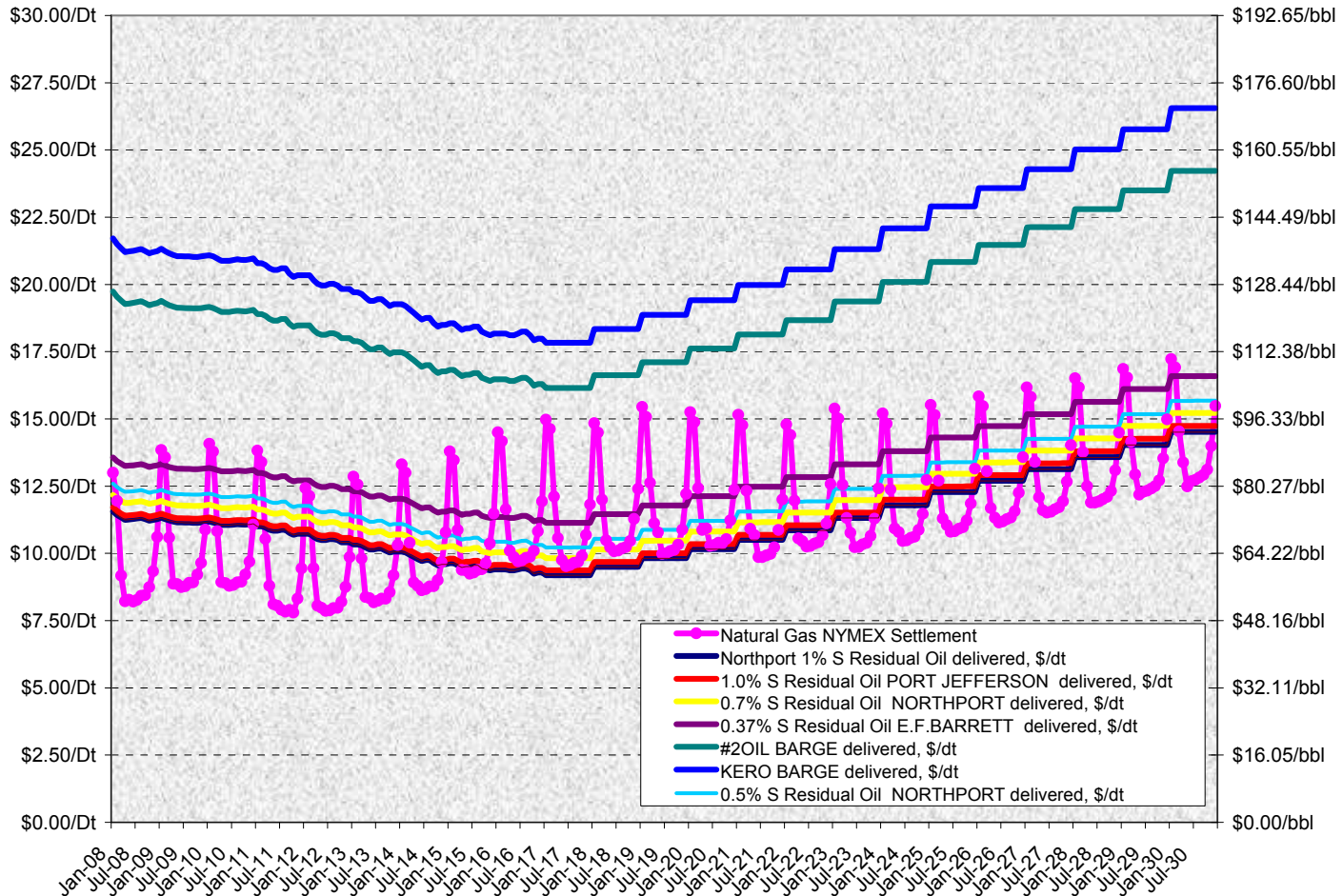
# Planning Assumptions

## Fuel Forecast



### Exhibit 6-3 NY Citygate Fuel Price Forecast

Natural Gas prices delivered to the NY Citygate and Residual Oil prices delivered to the plant using the NYMEX settlement values and Residual Oil Swap prices for December 27, 2007, the 2007 NG forecast and long term residual oil forecast Residual Oil Prices Revised by LIPA.

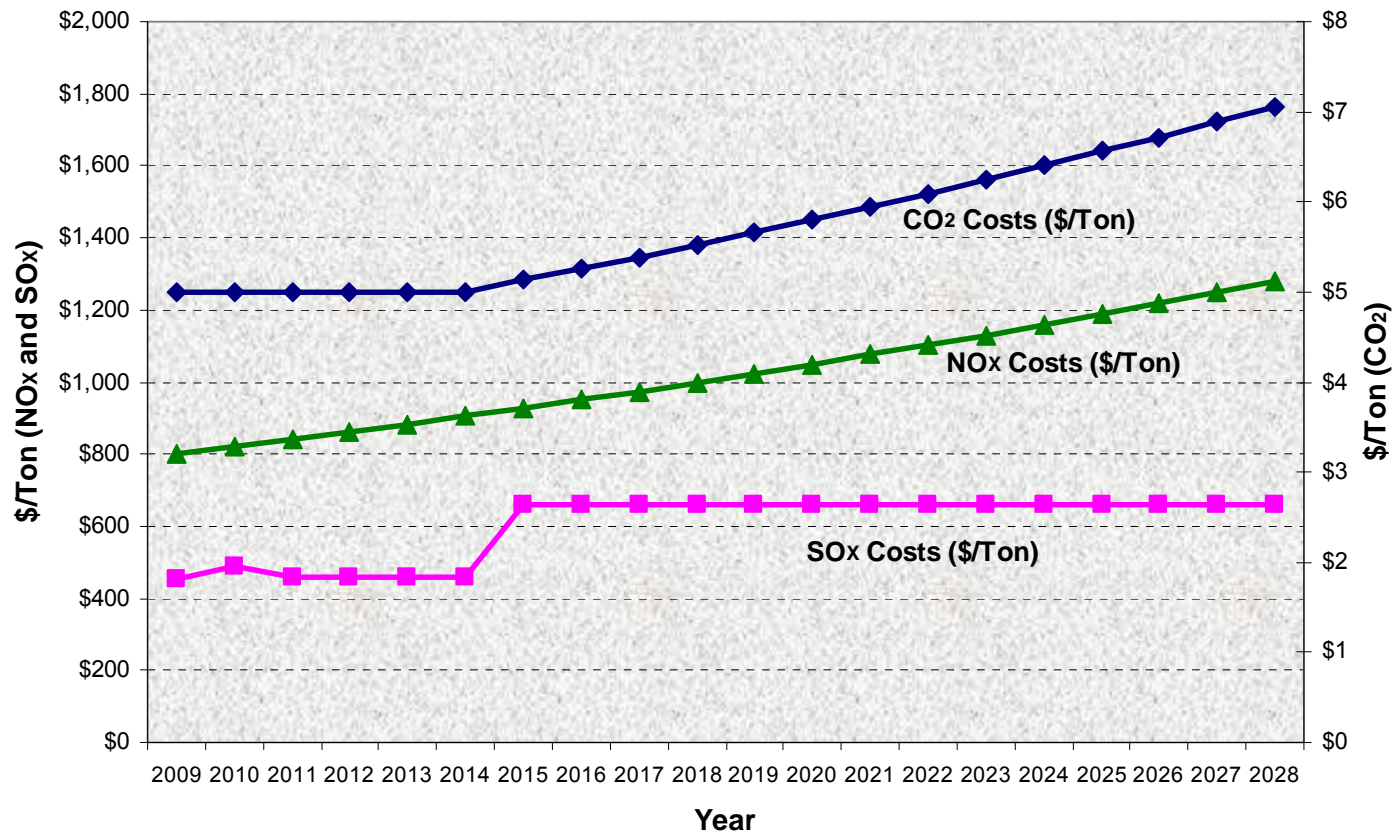


# Planning Assumptions

## Emissions Cost

LIPA incorporates projected costs associated with environmental emissions of sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>) and carbon dioxide (CO<sub>2</sub>).

Exhibit 6-4 Emission Cost Forecast



# End of Presentation

## Discussion

Target Completion Time **11:15 am**

- Discussion on Planning Process & Assumptions
- Process Check

## Next Up

- Opening Remarks
- Overview of Workshop Format
- Overview of Electric Resource Plan
- *Break*
- Review of Modeling System and Assumptions
- **Energy Efficiency**
- **Need Analysis**
- *Lunch*
- **Technology Screening**
- **Alternative Plan Analysis**
- *Break*
- **Action Plan**
- **Policy Input**
- **Input on Workshop Approach**

# Planning Assumptions

## Other Escalation Rates

Exhibit 6-5 Projected Annual Percentage Cost Escalation Rates

