Merging Load Forecasts

Energy Planning Load Forecasting and MTEP20 Futures Workshop

April 8, 2019

Merging Forecasts

- QA/QC check
- Ensure all forecasts are on a consistent basis (apples to apples)
- Identify gaps and use SUFG forecast to fill them
- Preliminary base reference forecast
  - prior to modification for near-term EE and load modifiers

QA/QC Checks

- We checked the submitted forecasts both visually (graphs) and analytically to flag issues that required follow up
  - significant changes in forecast mid-stream
  - inconsistencies between peak demand and energy forecasts
  - long-term constant values or constant growth
  - missing information

Consistency

- In order to merge the forecasts, it is necessary to place all forecasts on a consistent basis
  - transmission and distribution losses included
  - peak demands coincident with MISO system peak

Follow Up

- We contacted survey respondents to get additional information or confirmation/correction to the submitted information

- No forecasts provided by utilities were changed without us contacting the source
  - changes generally involved consistency in terms of coincidence and T&D losses, did not change the substance of the forecast

Merging Forecasts

- Determine fractions of LRZ energy and peak demand not covered by utility forecasts for each month of the year

- Use year-to-year percent growth in SUFG LRZ-level forecast for those fractions

  – This represents the sum of non-responding utilities in that LRZ

- Add to the provided forecasts

Toy Example

- Suppose 3 forecasts are provided for a specific LRZ, covering certain fractions of peak demand and energy in a given month

	Peak Demand		Energy	
	% of total	CAGR	% of total	CAGR
ABC	40%	0.5%	44%	0.4%
JKL	20%	1.0%	18%	0.9%
XYZ	10%	0.2%	10%	0.3%
SUFG	?	0.7%	?	0.7%

CAGR = Compound Annual Growth Rate

Peak Demand

- SUFG forecast is used to cover the 30% gap
- Merged forecast has a CAGR of 0.64%

Monthly Peak Demand (MW)
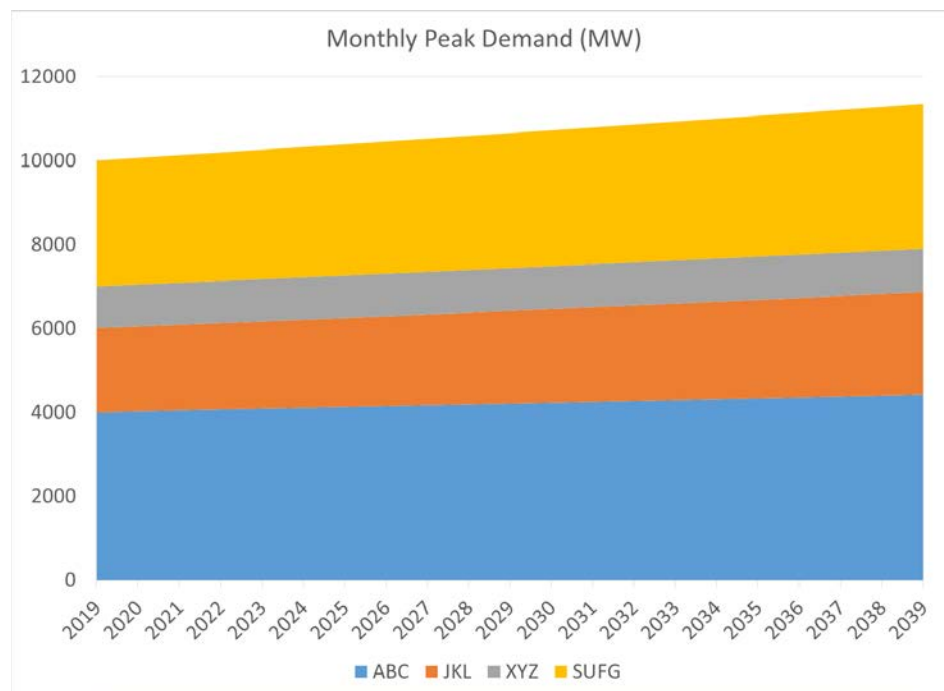
Energy

- SUFG forecast is used to cover the 28% gap

- Merged forecast has a CAGR of 0.57%

Monthly Energy (GWh)
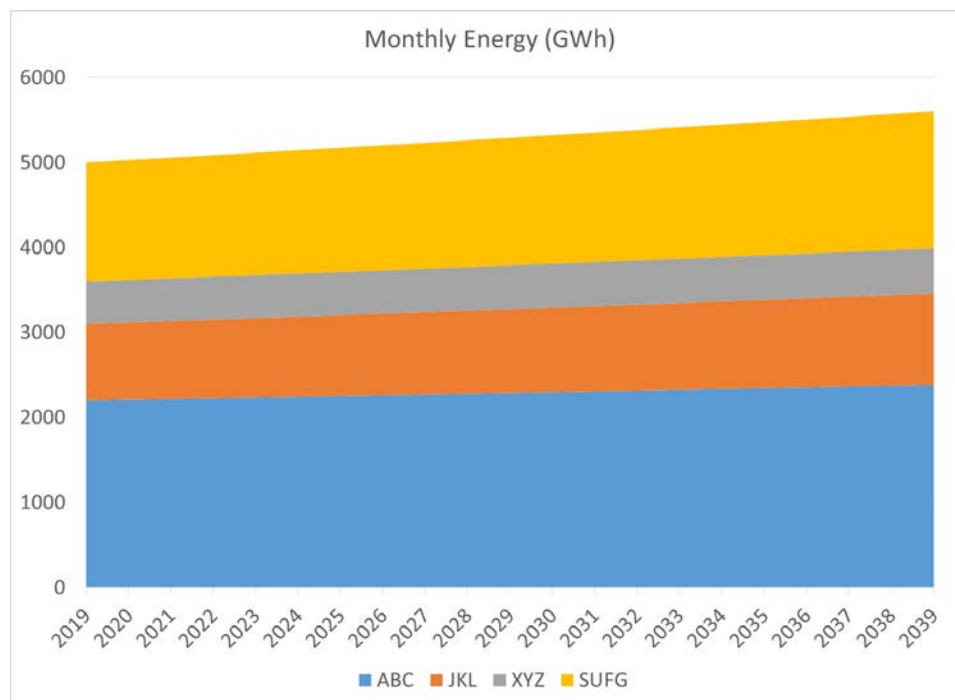
Merging Forecasts

- Repeat the process for other months of the year

  – Load shares and peak shares will vary by month

- Repeat for other LRZs

- Result is the baseline reference forecast (without adjustments for energy efficiency and load modifiers)

Draft Preliminary Baseline Reference Forecast

- The results shown here have not been finalized and are subject to revision

- We are waiting for a couple of survey respondents to answer questions

- We expect the final version to be close, but not exactly equal to, the results shown here

Draft Annual Energy Forecast

LRZ	CAGR
1	0.54%
2	0.94%
3	0.77%
4	0.49%
5	0.38%

LRZ	CAGR
6	0.70%
7	0.41%
8	0.63%
9	0.62%
10	0.39%

MISO System   0.60%

Draft July Peak Demand Forecast

LRZ	CAGR
1	0.65%
2	0.92%
3	0.65%
4	0.48%
5	0.38%

LRZ	CAGR
6	0.65%
7	0.28%
8	0.47%
9	0.54%
10	0.34%

MISO System   0.55%