

Review of Comments on the Draft 2019 Energy Efficiency Forecast



Energy Efficiency Forecast Working Group

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SYSTEM PLANNING



Summary of Comments

- The ISO has a history of underestimating savings
- The graduated production cost escalator of 2.75% yields production costs that are too high and savings that are too low
- An increased graduated production cost escalator runs counter to the recent trend of falling production costs



Overview of the EE Forecast

- The ISO's EE forecast is designed to forecast energy and demand savings that result from state sponsored energy efficiency programs
- The ISO's EE forecast is not intended to be a forecast production costs
 - Production cost estimates are used to facilitate the calculation of savings
 - The escalation of production costs over the forecast horizon is a mechanism to ensure the EE forecast reflects uncertainty that grows with time



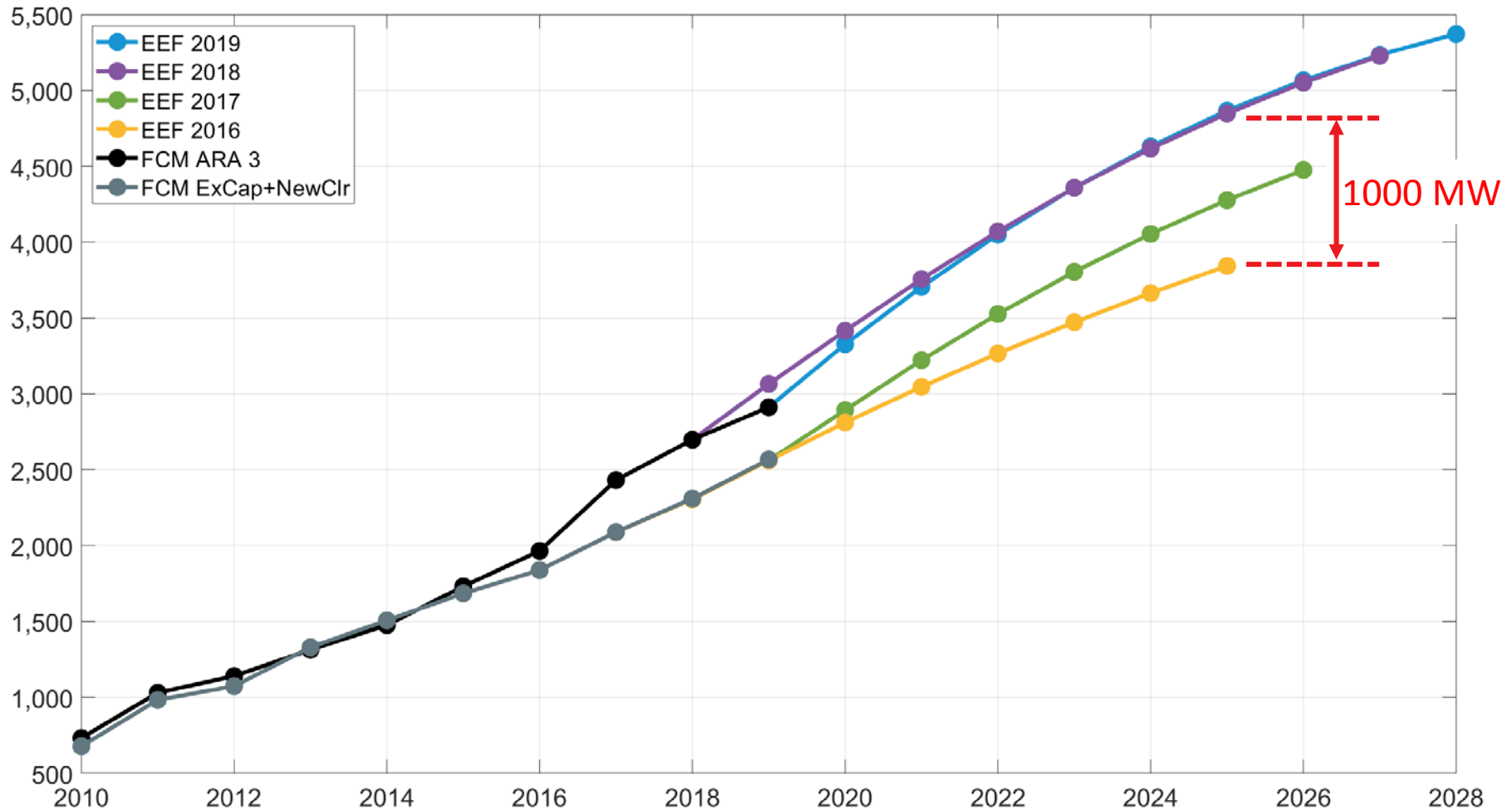
History of Updates to the EE Forecast

- 2016 EE Forecast
 - Starting point for the forecast based the sum of Existing Qualified Capacity and New Cleared resulting from the primary FCA
 - Years 1-4 of forecast were based on FCM values, forecast begins in year 5
 - Production costs escalated at static annual rate of 5%
- 2017 EE Forecast
 - Introduction of a graduated production cost escalator of 1.25% per year that accumulates over the forecast horizon
- 2018 EE Forecast
 - Starting point for the forecast becomes qualification at ARA 3
 - Year 1 of forecast based on FCM values, forecast begins in year 2
- 2019 Draft EE Forecast
 - Production costs escalated at a graduated rate of 2.75% per year, that accumulates over the forecast horizon
- The changes implemented since 2017 have resulted in significantly higher EE forecast
 - The 2019 EE forecast is approximately 1000 MW higher than the 2016 forecast



Historical EE forecasts

2016 EE Forecast - 2019 EE Forecast

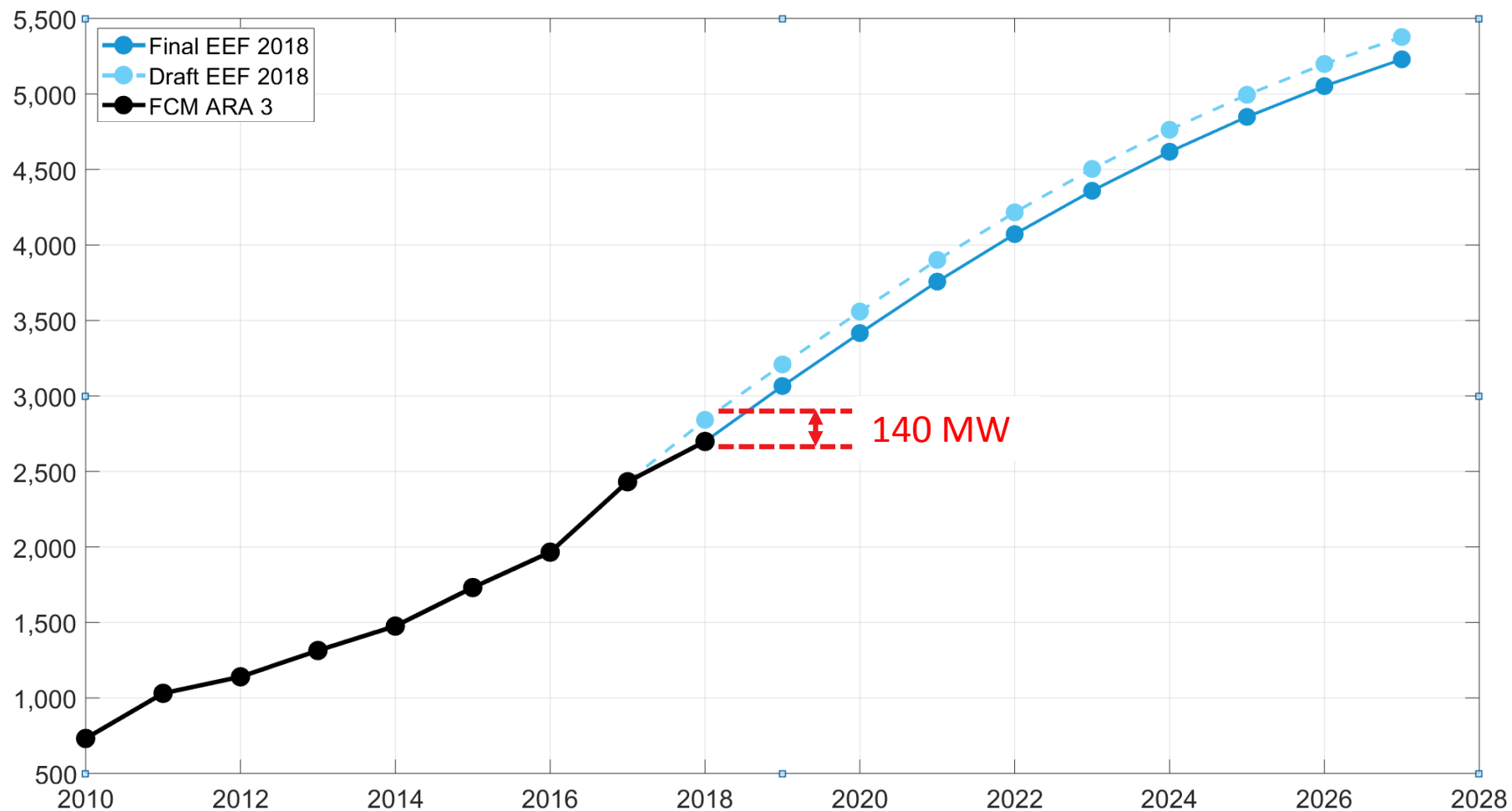


EE Forecast Performance

- Year 1 of the *draft forecast* is a forecast value
- Year 1 of the *final forecast* reflects observed qualification at ARA 3
 - The most recent ARA 3 qualification value is released in mid February
- Comparing each year's draft and final forecast provides insight into how well the model is performing
 - This comparison for the 2018 and 2019 forecasts suggests that the current model is over estimating savings in the near term

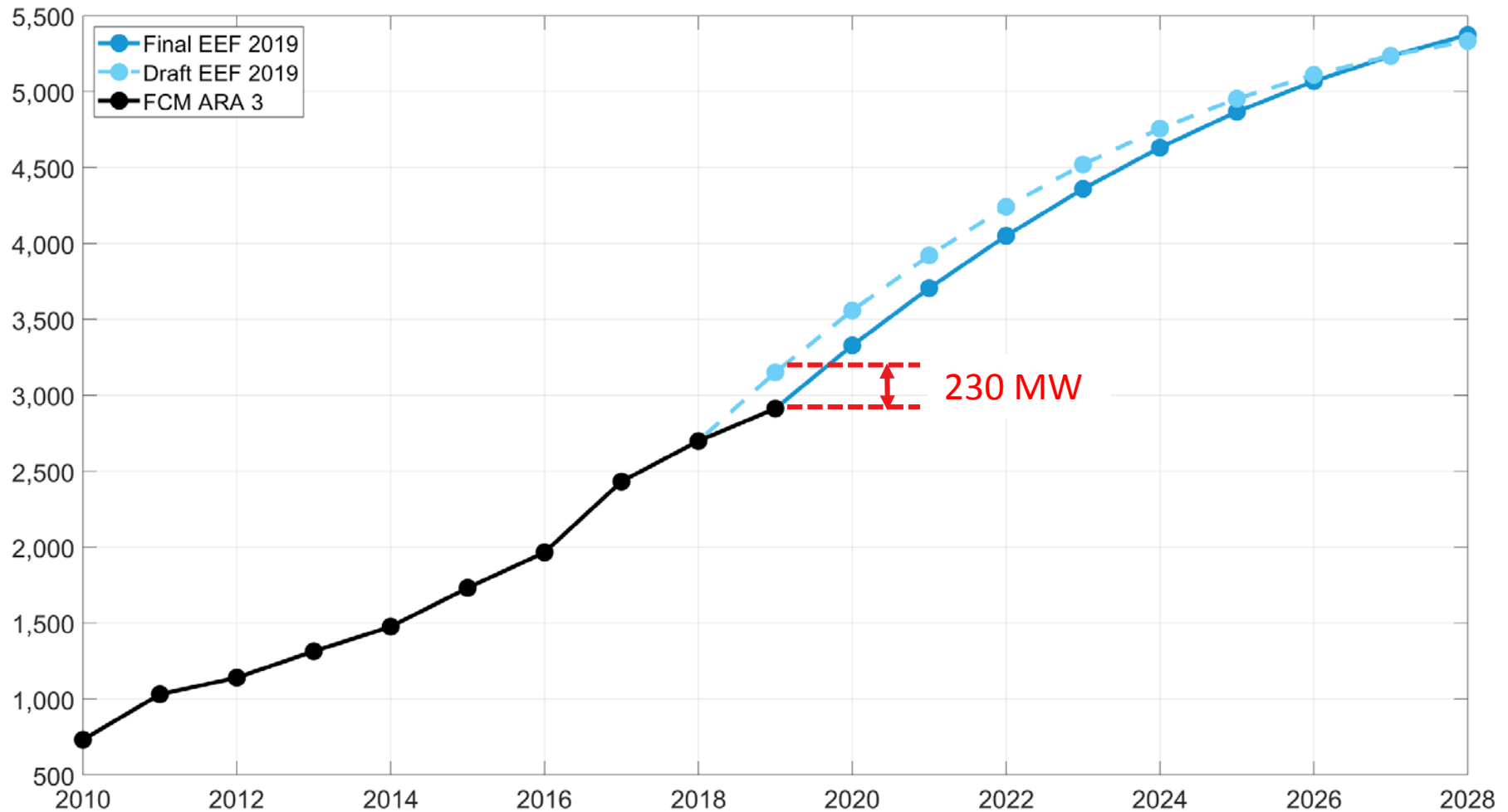
EE Forecast Performance

2018 EE Forecast: Final Vs Draft



EE Forecast Performance

2019 EE Forecast: Final Vs Draft



Role of Production Costs in the ISO EE Forecast

- Although forward looking production costs are computed within the EE forecast framework, the **ISO's EE forecast is not intended to be a forecast of production costs**
- Within the EE forecast model, production costs are a construct that allow for the inclusion of a variety of factors that could influence the realization of future energy and demand savings
- Growing production costs are a mechanism to reflect significant uncertainty due to a variety of factors including, but not limited to:
 - The impact of measures expiring out the EE stack
 - Uncertainty in future EE budgets
 - Limits in the remaining technical potential of various measures
 - Limits to operationalizing existing technical potential
 - Rising baselines due to market transformation and standards
 - Increased cost to develop savings
 - Uncertainty in the persistence of active demand savings over the forecast horizon

The Need for an Increased Production Cost Escalator

- With the current EE forecast methodology, a reduction in recent historical production costs results in an increased forecast
 - Drop in 2017 production costs alone (using the 1.25% graduated production cost escalator) caused the forecast to increase by approximately 500 MW in the later years of the forecast
 - There is insufficient data to support such a significant increase to the forecast
 - Recent benchmarking suggests the forecast may be too high
 - An increased production cost escalator was used to mitigate uncertain increases in the forecast due solely to a drop in recent historical production costs
- Uncertainty is greatest in later years of the forecast
 - While the production costs listed in the forecast are some indicator of actual costs, this becomes less true as you move out along the forecast horizon
 - In later years production costs are primarily used as a way to reflect uncertainty in the attainment of savings

Active Demand as EE Savings

- Current EE forecast methodology
 - Energy savings are estimated from production costs and state budgets
 - Demand savings are derived using static peak to energy ratios
 - Savings accumulate over the forecast horizon
- There are signs that “active” measures may become a significant portion of future EE portfolios
 - MA has >50% of annual savings originating from “active” measures by 2021
- Active demand as energy efficiency
 - Energy savings may be minimal or even negative
 - Accumulating active demand savings over the forecast horizon may not be appropriate
- For these reasons, current EE forecast methodology may not appropriately account for active savings

Response to Comments

- Comment: The ISO has a history of underestimating savings
 - Updates since 2017 have increase the EE forecast by more than 1,000 MW (refer to slides 4-5)
 - Recent benchmarking shows the EE forecast has been consistently overestimating savings (refer to slides 6-8)
- Comment: The graduated production cost escalator of 2.75% yields production costs that are too high and savings that are too low
 - The EE forecast is not a forecast of production costs
 - Production costs are a mechanism to reflect numerous sources of uncertainty that grow in later years of the forecast
 - Near term production costs and savings line up with state expectations
 - Benchmarking suggests the forecast may be over estimating savings
 - The graduated production cost escalator will be updated to 2% in the final forecast

Response to Comments

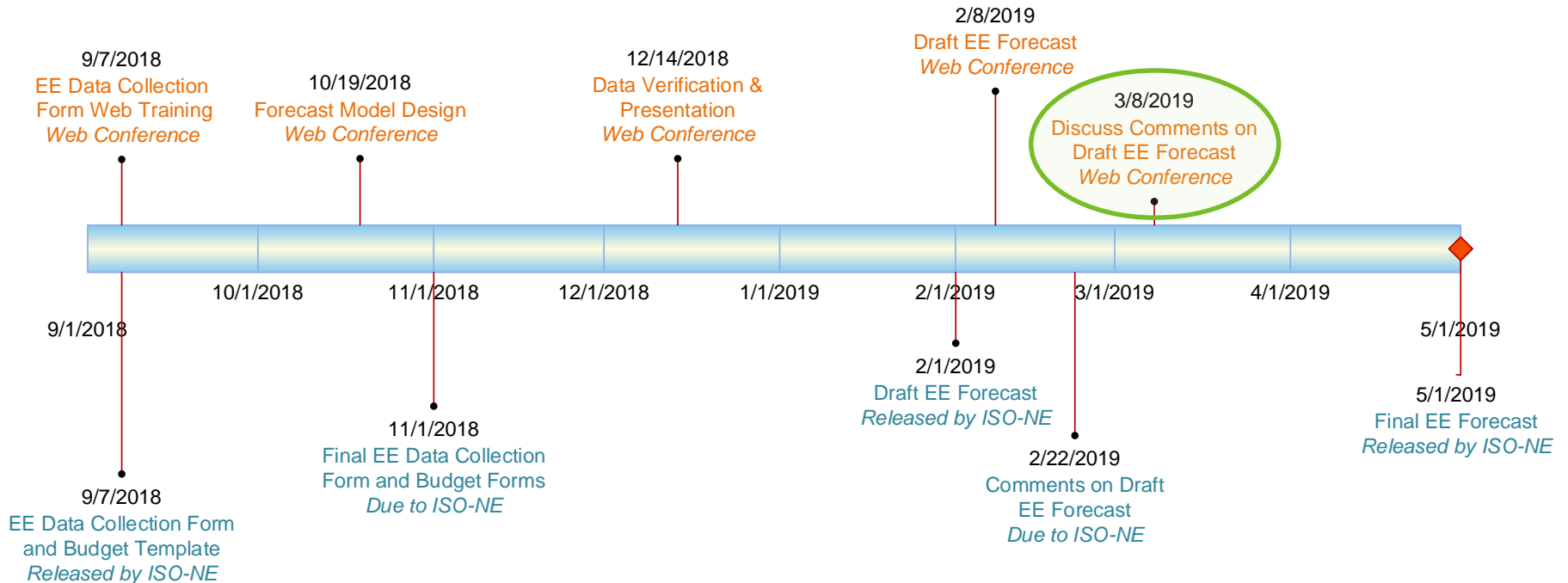
- Comment: An increased graduated production cost escalator runs counter to the recent trend of falling production costs
 - The ISO recognizes that production costs have been falling in recent history, and expects this trend may continue in the near term
 - Starting production costs used in the EE forecast are lagged nearly 3 years behind the first forecast value
 - i.e. the 2019 EE forecast uses production costs through 2017 to produce forecast values beginning in 2020
 - The current EE forecast methodology translates a drops starting production costs directly into increases in the forecast
 - An increased graduated production cost escalator is required to ensure that the appropriate level of uncertainty is reflected in the forecast

Looking Forward

- The EE landscape in New England is undergoing significant changes
- The ISO is working to develop necessary improvements to its methodology to address both the near-term tendency to over-forecast indicated by recent benchmarking results, as well as longer-term sources of uncertainty
- The ISO looks forward to working with stakeholders to gain further insight into the expected outlook on the evolving EE landscape

2019 Energy Efficiency Forecast Schedule

Meetings



Milestones

Effective: 08-03-2018
(Schedule subject to change)

Questions

