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Modeling EE in Indiana IRPs

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Evolution of EE Modeling in Indiana

- Predetermined level of savings fixed in IRP modeling
- Now EE is a selectable resource
- Grouping of that EE happens by cost, load shape, value, or portfolio
  - Indiana Code § 8-1-8.5-10(j) requires that a DSM Plan "be consistent with…the electricity supplier's most recent long range integrated resource plan submitted to the commission."
  - Achieving consistency is only possible if the DSM inputs to the IRP are also consistent with the manner in which a DSM portfolio is constructed and delivered.
  - Grouping DSM inputs into value-based bins is inconsistent with DSM portfolios that include a diverse set of programs, measures, and customer types with varying degrees of cost effectiveness.

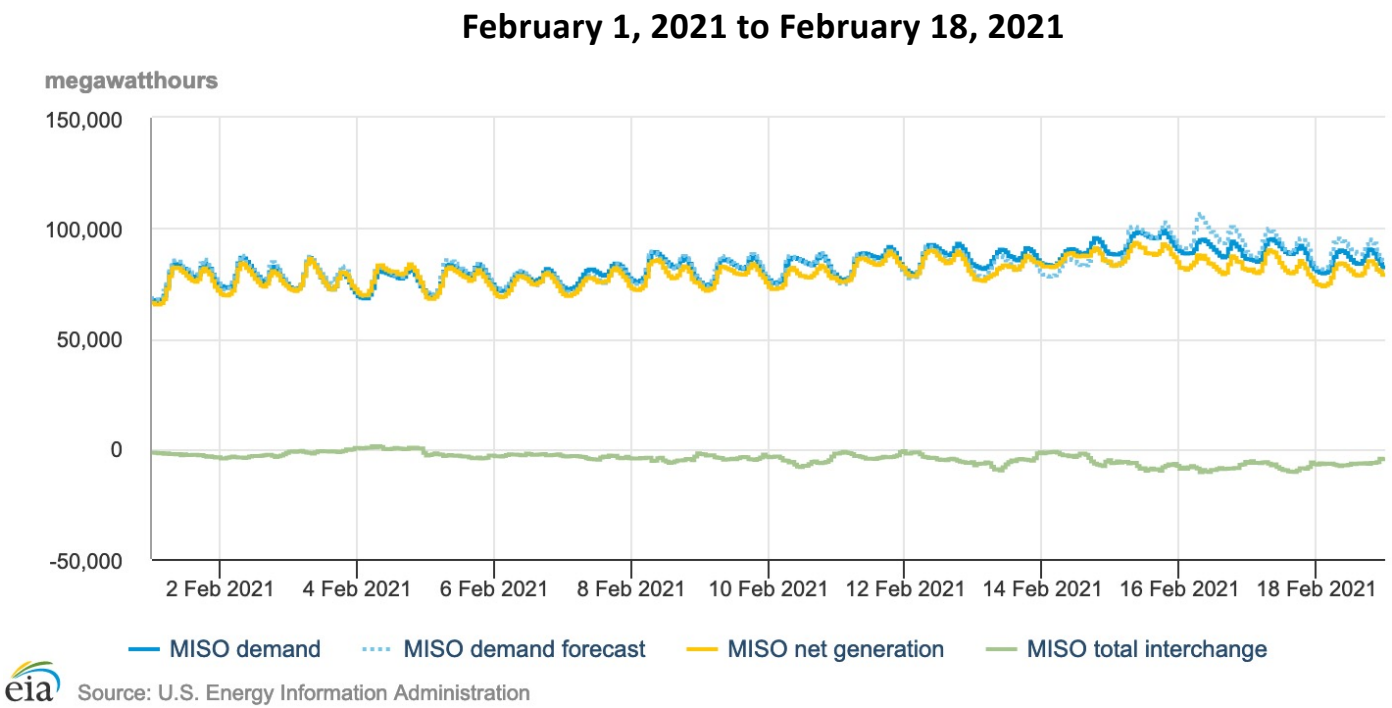
Some Best Practice Recommendations for Indiana IRPs

- Keep the number of bundles small and the grouping simple
- Group EE by portfolio
  - If model does not select EE you may need to weed out more expensive programs like behavioral EE
- Reduce program costs by co-benefits that can't be explicitly represented in IRP model, e.g. avoided transmission and distribution costs
- Convert savings at the meter to savings at the generator using marginal line losses
- Levelized program costs – as-spent dollars will present an end-effects issue

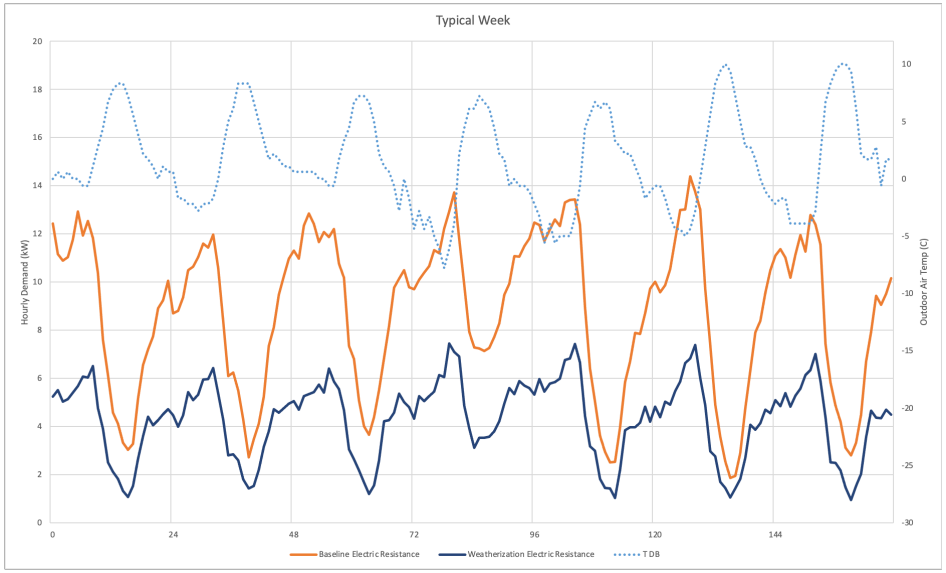
Future Improvements for EE Modeling in IRPs

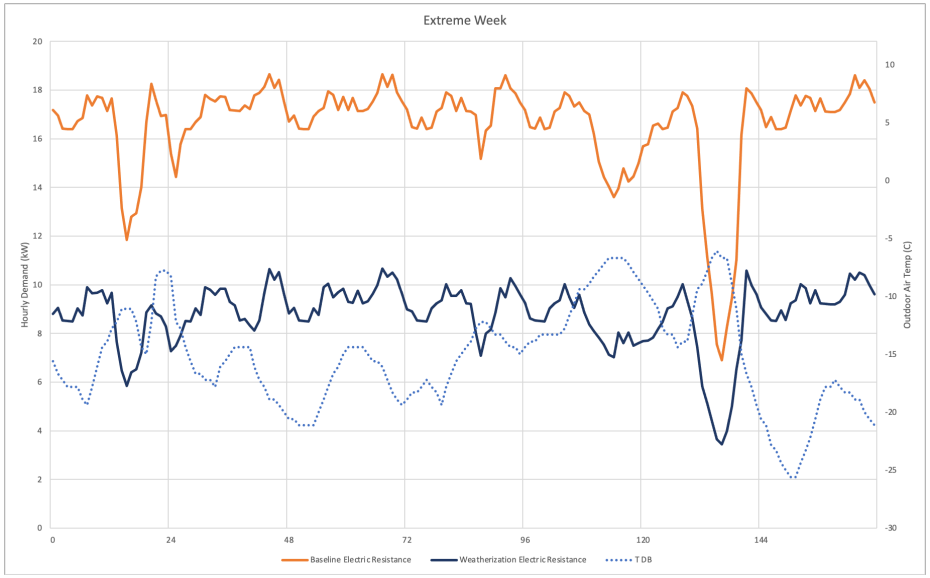
- Refine load shapes used, often a handful of load shapes are used to characterize many measures
- Account for value of EE under extreme weather conditions

Load Increases Can be Dramatic During Extreme Winter Weather Events



Impact of Weatherization on Residential Demand for Illustrative Kansas Residence During Typical and Extreme Winter Weather





Source: Cadeo Group

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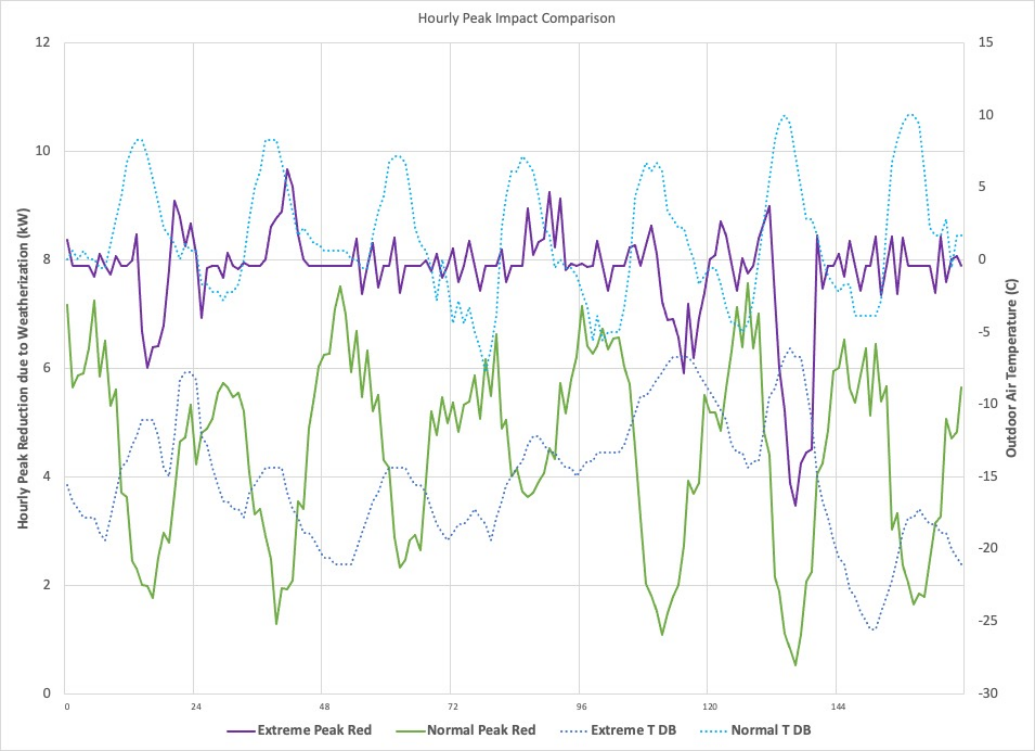
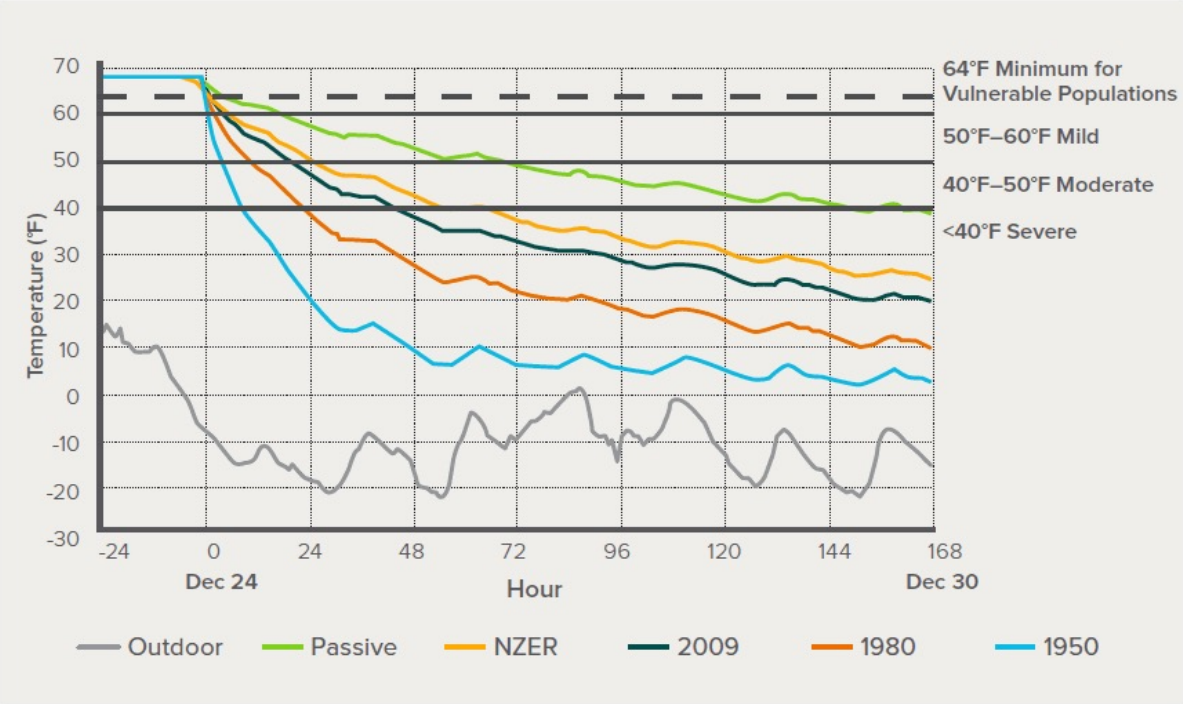


Source: Cadeo Group

Weatherized homes provide more "hours of safety" when power goes out



Source: RMI

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