Keep the Focus on the Big Picture: *An Analytical Method for Evaluating Commercial Retro-commissioning Net Impacts*

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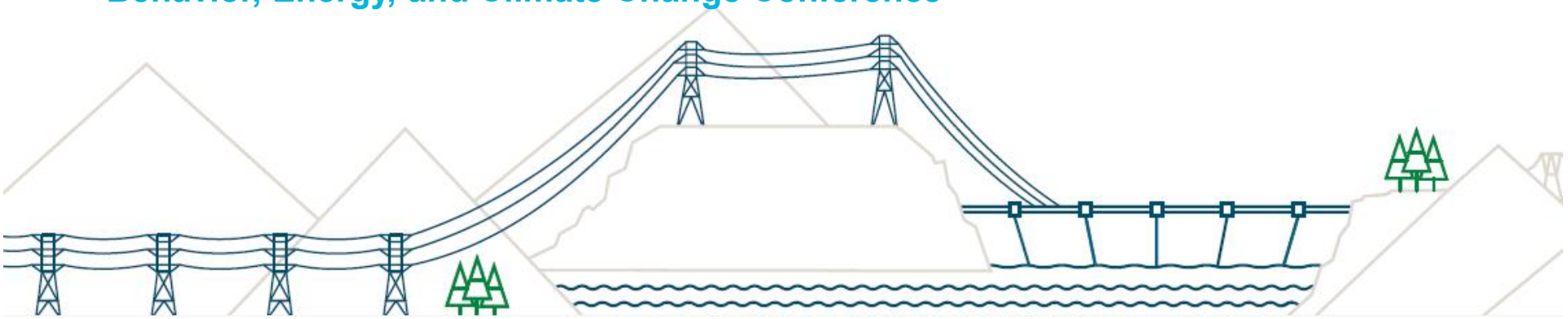
Behavior, Energy, and Climate Change Conference



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Practical and Scalable Approach to Evaluate Operational Program with AMI Data

Consumption Data Analysis (RCT or Quasi-Experimental Design)

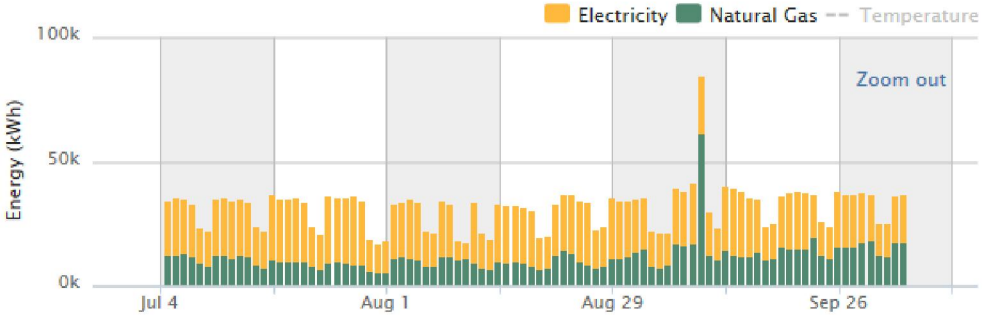
- *net impact*
- *low cost*
- *can be replicated*
- *no new data collection required*
- *no site work*
- *reliable result*

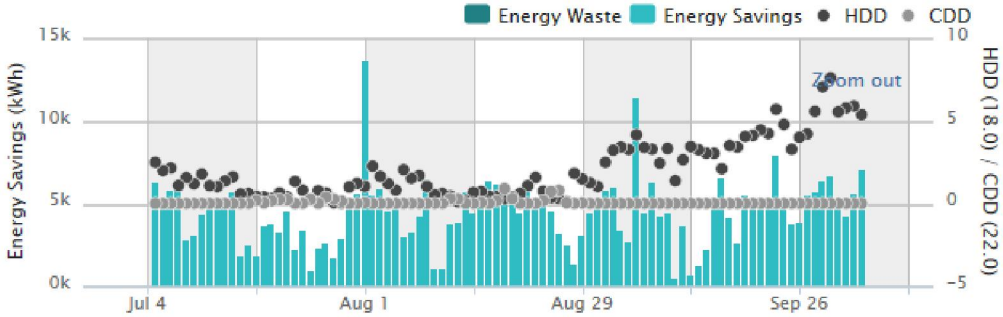
BC Hydro's Continuous Optimization Program

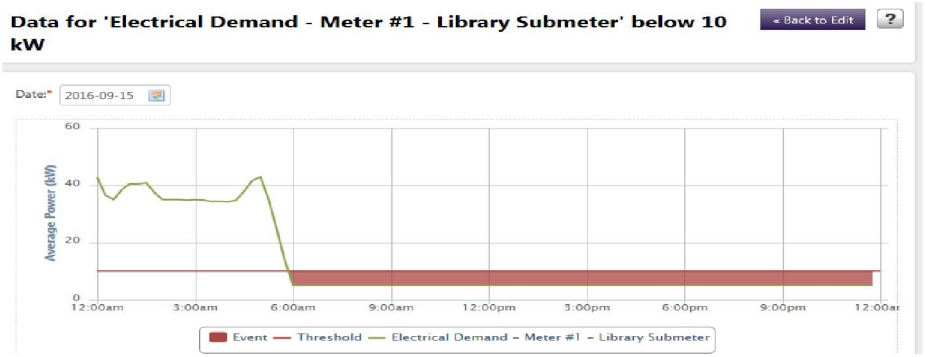
Targets operational kWh savings in commercial buildings

Program Offer

- Fully funded retro-commissioning study
- Fully funded Energy Management Information System







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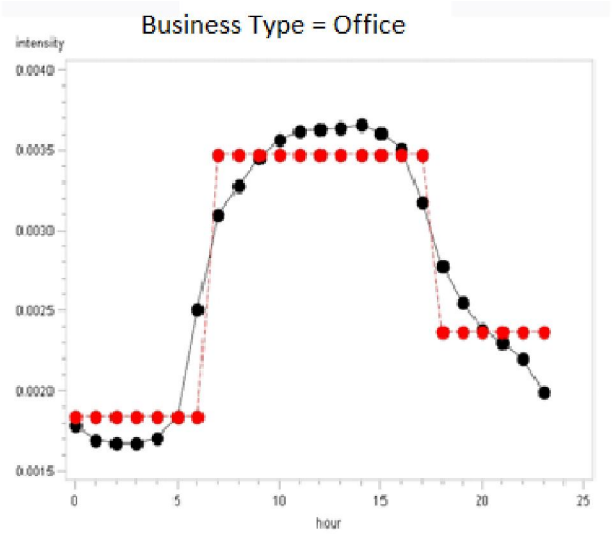
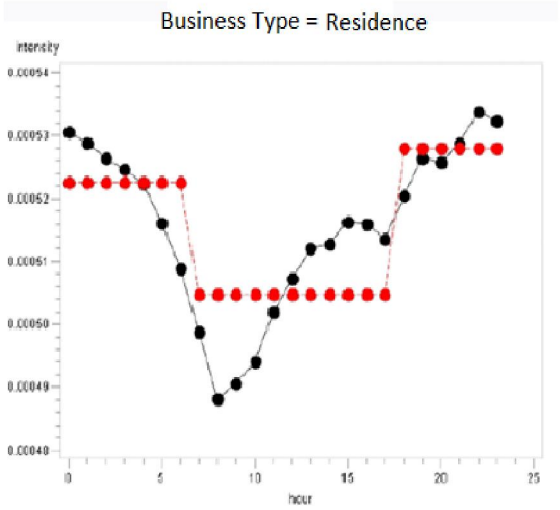
Classification of Load Shape

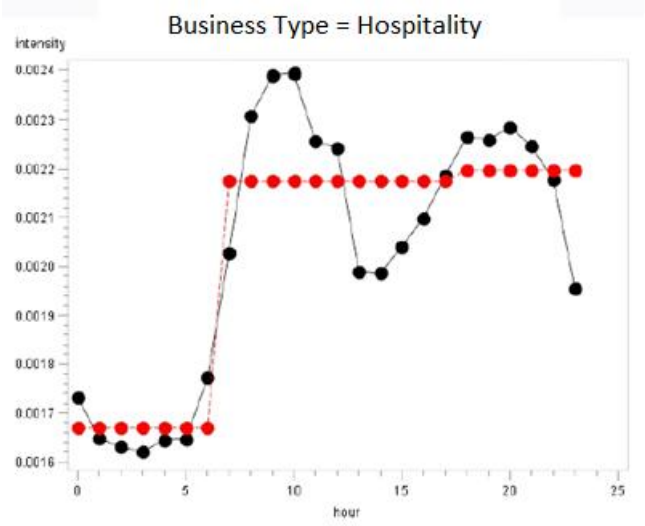
Day Operations



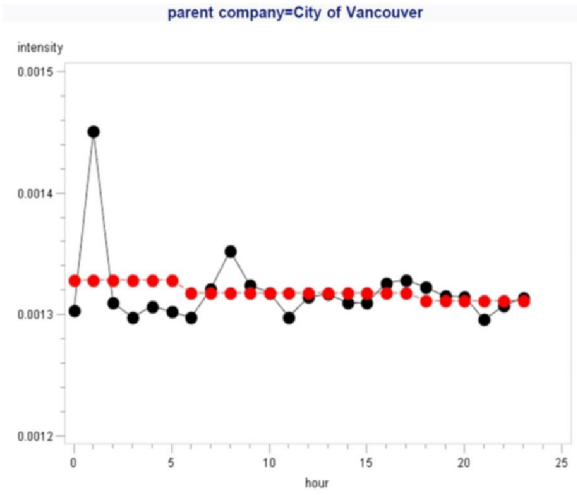
Overnight Operations



Day & Evening Operations



No Operations



Methodology of Impact Analysis

- **Quasi-Experimental Design – Variation in Adoption**
- **Analysis of Covariance (ANCOVA) - by Day Type & Load Shape**

Daily Average Energy Usage Intensity (EUI) modelled by:

- HDD
- CDD
- Participation of program (0/1)
- Participation of other Energy Efficiency program (0/1)
- Interaction with other Energy Efficiency program
- Square footage of facility
- Magnitude of energy usage

Conclusion

- On average, 5% of savings were achieved;
- Keep focus on the forest other than on trees.

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Questions?

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