



In the Community to Serve[®]

ENERGY EFFICIENCY

Amanda.Sargent@cngc.com
Lead Economic Energy Efficiency Analyst
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AGENDA & BACKGROUND

1. Historical Performance:

Annual versus Cumulative Impacts, Decoupling

2. Forecasts & Targets

Inputs, Market Segmentations and End Uses, Measure Assumptions, Weather, Scenarios, Cost of Carbon Pricing

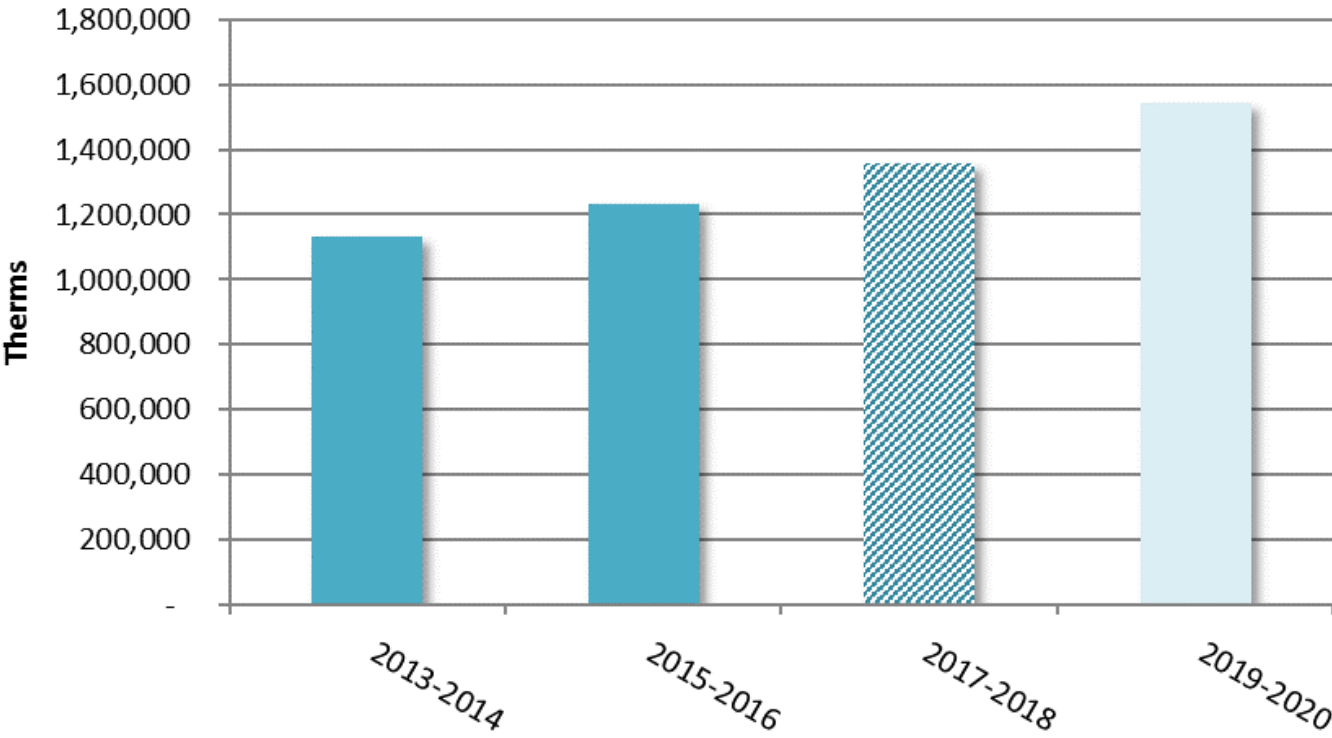
3. Program Overview

Low Income, Residential, Commercial & Industrial Opportunities

4. Short Term Direct Use Benefits to Emissions, Climate

5. Thoughts going forwards:

Economic, Forecasting & Subject Matter Expertise

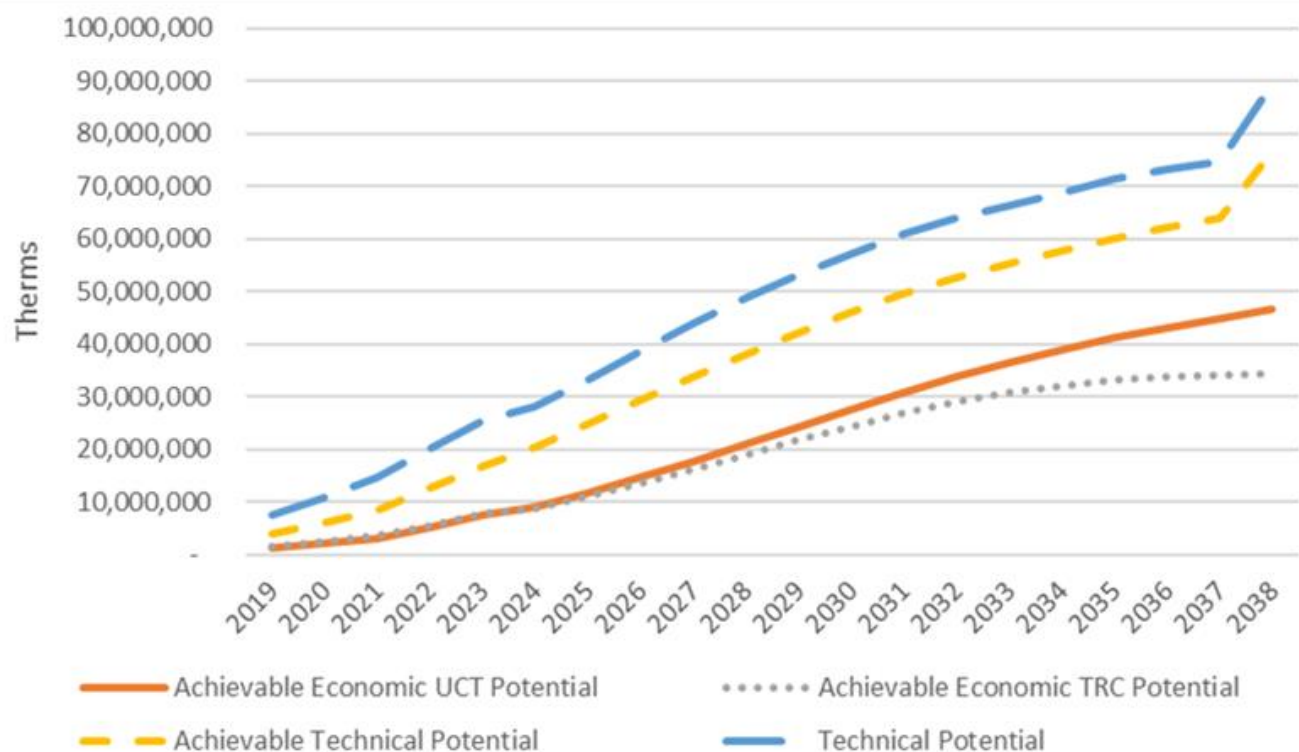


Local Program Highlights

- Insulation rebates frequently cover more than half the install costs
- In 2018, \$418k invested by the community in weatherization (insulation & air sealing), Cascade reimbursed \$243k in rebates
 - \$453k for all Bellingham 2018 rebates
- Almost 75,000 residential annual therms saved for 2018
- Added Point of Sale pilot in 2019 to minimize upfront financial burden on customers

WA Therms Saved & Short Term Forecast

Cumulative Portfolio Potential Forecasts



CUMULATIVE
POTENTIAL DSM
FORECAST

TWENTY YEAR TOTAL:
47 MILLION
THERMS

YEAR 20
CUMULATIVE DSM
= 16% OF CORE
FORECASTED
DEMAND

PROGRAMS

Learn more: www.cngc.com/energy-efficiency

RESIDENTIAL & LOW INCOME

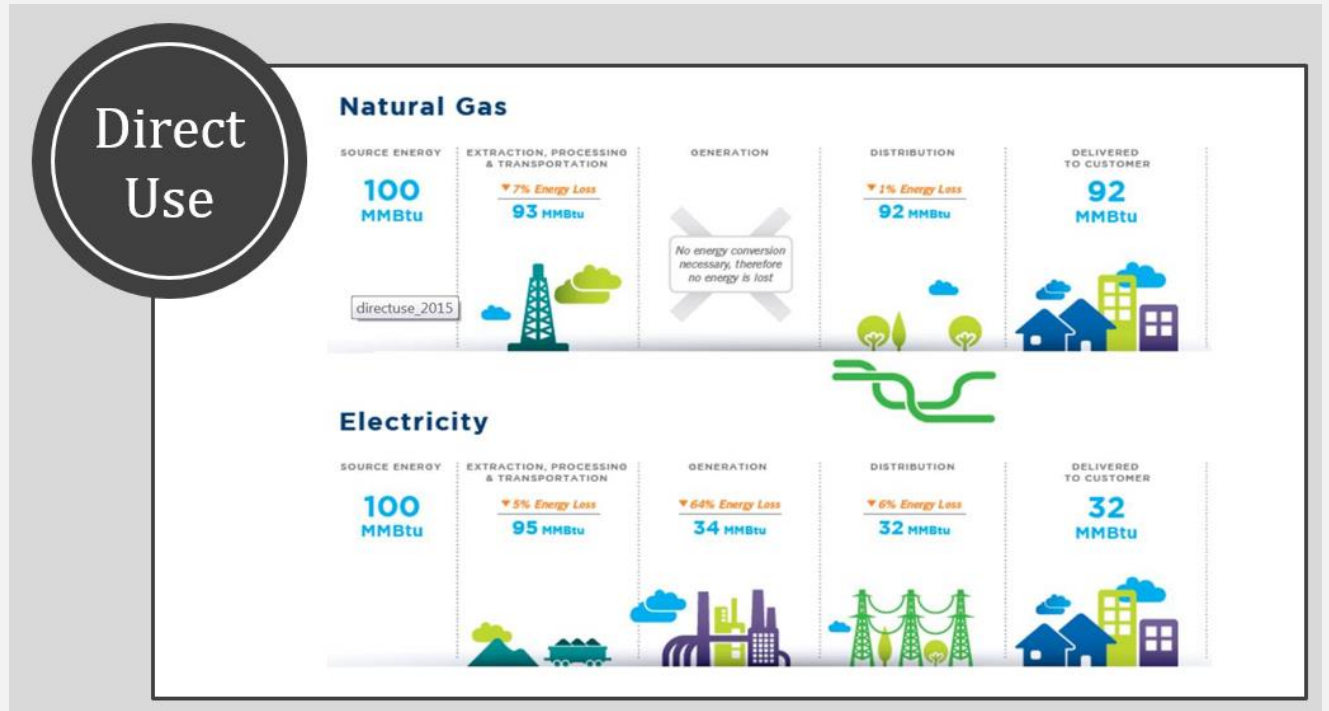
- ✓ **New Home** Built Green or Energy Star Certifications - \$2,000
- ✓ **Weatherization:** insulation \$0.75 - \$1.00/sqft, air sealing \$150, windows \$5/sqft
- ✓ **Equipment:** HE Furnaces, Tankless WH, Boilers, Fireplaces, Combination Systems, Programmable Thermostats, Doors
- ✓ **Low Income** weatherization & equipment program, covers health & safety, up to 100% of costs, no cap

COMMERCIAL & INDUSTRIAL

- ✓ **Custom** offerings for unique projects. Rebates calculated based on anticipated therm savings & avoided costs
- ✓ **Prescriptive** weatherization such as insulation, up to \$2.50/sqft, plus windows
- ✓ **Kitchen** Equipment: dishwashers, fryers, ovens, steamers, pre rinse spray valves...
- ✓ **Water:** Boilers, Tankless, Ozone Injection Laundry, Recirculation Controls, Free Aerator & Showerhead Kits...
- ✓ Unit Heaters, Radiant, Furnaces, & more

WHY DOES CASCADE TRY TO SELL LESS?

- History of Community Partnership
- Demand Side Management optimizes system performance – avoided costs
- Regulated utility – we have to meet annual energy savings goals
- Direct Use Benefits – see image at right on most efficient use
- Environmental Stewardship – it's the right thing to do for the communities we serve, to support long term sustainability



THOUGHTS ON: ECONOMICS

- **Overview cost-effectiveness testing options:** such as Resource Value Test's Benefit & Cost Matching, Societal Cost Test, Total Resource Cost Test, Program Administrator Cost Test from the City or Partner's Perspective, or industry practices, mix and match to create your own unique test for the Bellingham Climate Action Task Force
- **Local Cost Data:** available from aggregated actual rebate applications' contractor invoices to ensure local, recent installation costs are reflected – to use to design program incentives, budgets, etc.
- **Market Dynamics:** residential single family home, multi family, or manufactured; or commercial retail, restaurant, healthcare, office, etc.; or industrial by manufacturing type. End usage by peak or baseload

THOUGHTS ON: FORECASTS

- **Weather impacts:** NOAA's forecasted decline in HDDs
- **Ramp rates:** e.g. Cascade uses adoption curves based on the Northwest Power & Conservation Council's 7th Plan methodology
- **Load profile shapes:** to target peak energy use, why it's beneficial
- **Deemed savings:** opportunities for cross referencing



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CONTACT US

Amanda.Sargent@cngc.com

Monica.Cowlshaw@cngc.com

Alyn.Spector@cngc.com

www.cngc.com

23,000 customers in Bellingham
50+ million therms per year

Residential Natural Gas Consumption by End Use

