

Consumption Data for Households and Businesses



For:

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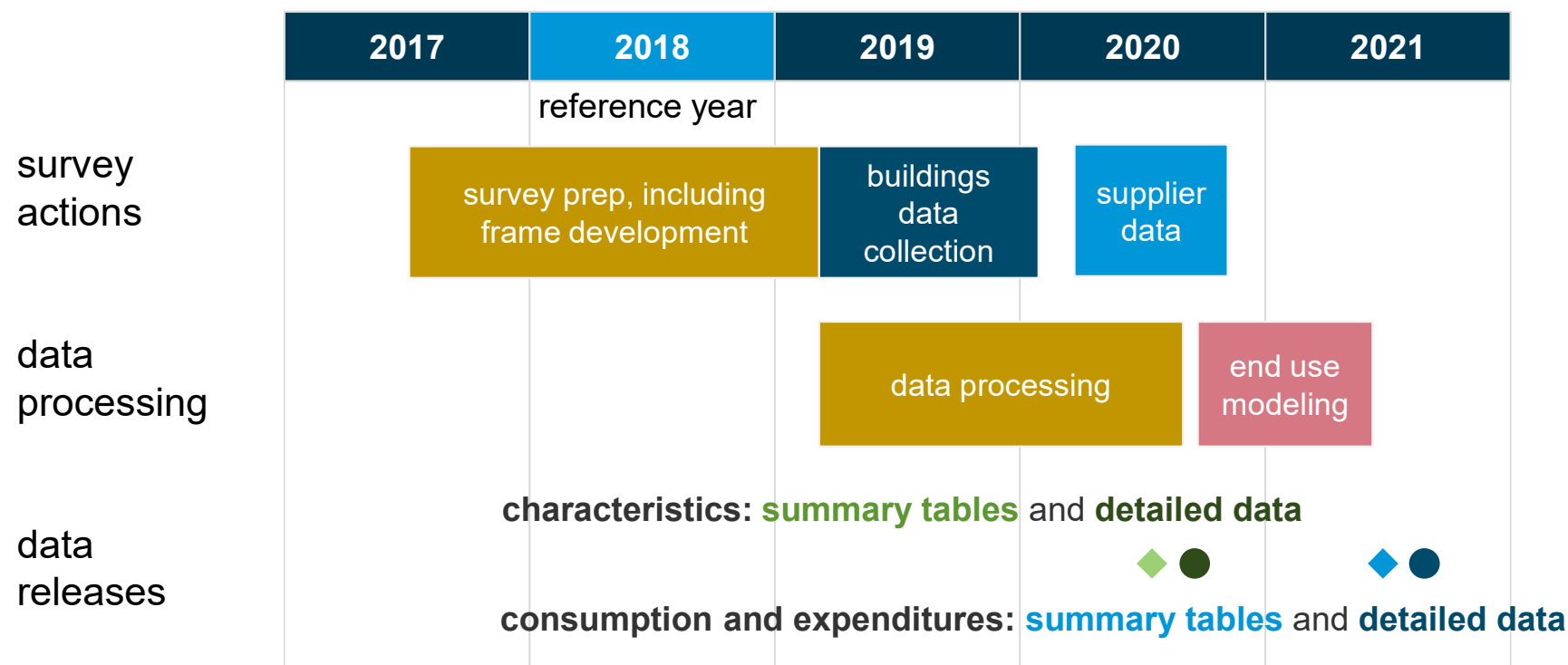
Major consumption surveys play an important role in understanding energy markets

- EIA's consumption survey consist of three separate collection programs
 - Commercial Building Energy Consumption Survey (CBECS)
 - Manufacturing Energy Consumption Survey (MECS)
 - Residential Energy Consumption Survey (RECS)
- Provide “benchmark” for many other data dissemination efforts
 - Monthly Energy Review and other publications
 - EIA's modeling system for IEA annual efficiency indicators

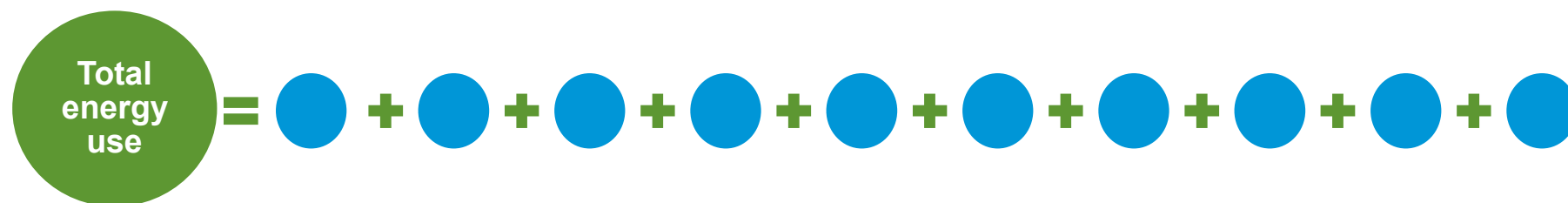
EIA's consumption surveys are complex, long-term efforts

- EIA's consumption surveys typically take years to fully execute
- Each survey program has unique design characteristics, e.g.,
 - MECS relies on U.S. Census Bureau's Business Master File
 - CBECS and RECS rely on building and supplier surveys
- Implications
 - Need to work closely with modeling and analytical staff
 - Not all possible improvements work across all surveys

CBECS cycle consists of two data collection phases



EIA uses engineering and statistical models to disaggregate total energy consumption into end use estimates

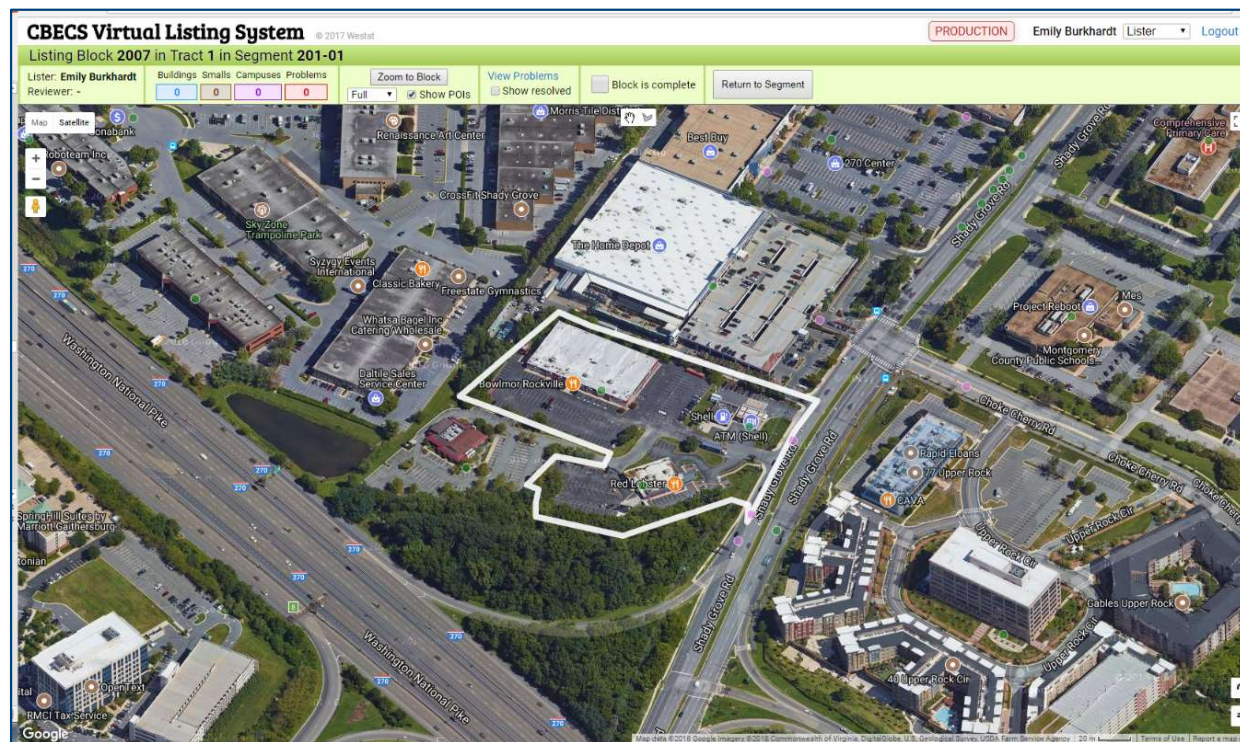


ENERGY SOURCE	Space heating	Space cooling	Ventilation	Water heating	Lighting	Cooking	Refrigeration	Computing	Office equipment	Other
Electricity	X	X	X	X	X	X	X	X	X	X
Natural gas	X			X		X				X
Fuel oil	X			X		X				X
District heat	X			X		X				X

Commercial end uses model: <http://www.eia.gov/consumption/commercial/estimation-enduse-consumption.cfm>

EIA used virtual listing to create 2018 CBECS area frame

- *Virtual listing*: Area frame created using satellite imagery and GIS tools will replace traditional on-the-ground listing in many areas



2018 CBECS made several data collection improvements

- Modernized survey processes—listing, screening, case management, etc. are transitioned to applications on iPhones and tablets
- Provided self-administered, web option for the building questionnaire

Evolution of survey modes across CBECS survey years

Mode	1979	1983	1986	1989	1992	1995	1999	2003	2007	2012	2018
Paper and pencil	X	X	X	X	X						
Telephone							X			X	X
In-person						X		X	X	X	X
Web											X

Recent improvement to MECS and RECS

- MECS focused on providing more content on emerging issues
 - Active management for what can be released
 - Further economic data incorporated into review (cross corroboration)
- RECS currently being conducted through web mode
 - Allows for large increase in sample size
 - EIA will produce statistic for all 50 states for the first time ever

Summary

- Consumption surveys serve important role in understanding energy markets
- EIA's consumption surveys are complex, multi-year efforts
- Development requires close work with analytical staff
 - Importance of identifying emerging trends (forecasts and projections)
 - Importance of understanding relationship to other economic statistics
- Not all possible innovations work for all survey types