

USAID ENERGY EFFICIENCY PROGRAM

South Africa S&L Program Impact Assessment

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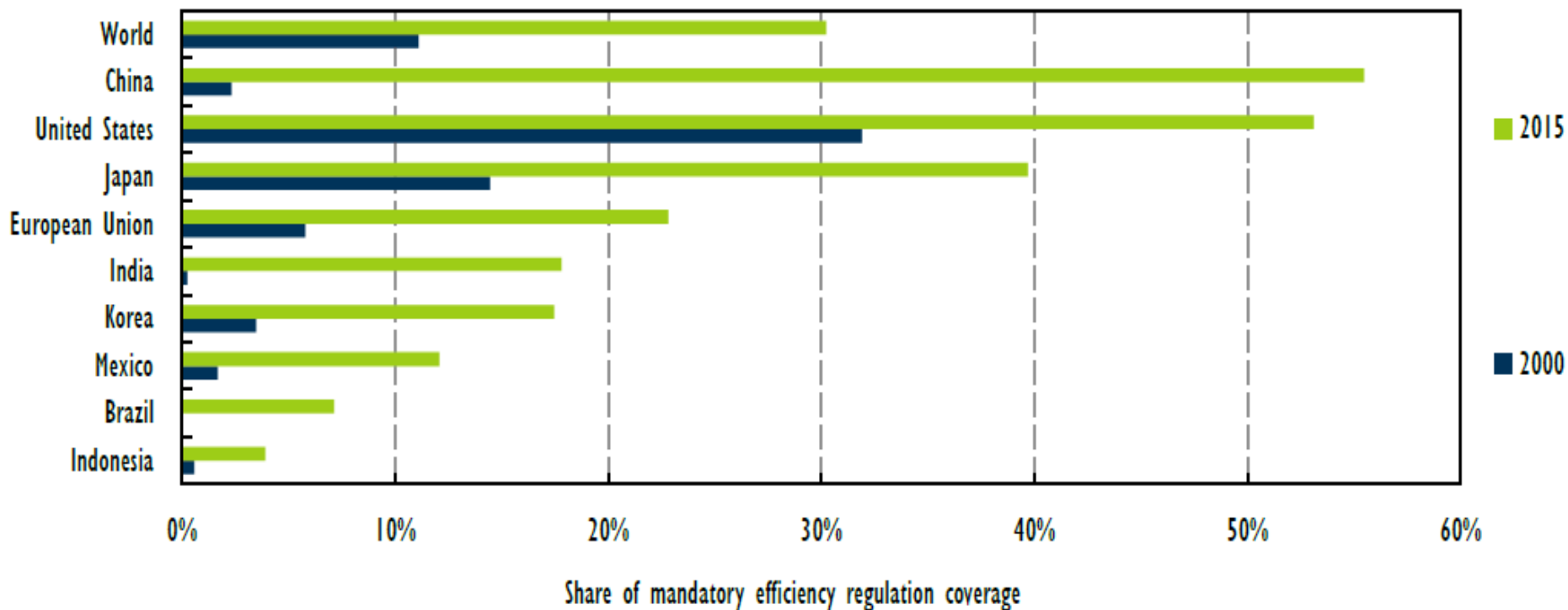


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STATUS OF S&L GLOBALLY

- Over 80 countries
- Coverage of products is increasing

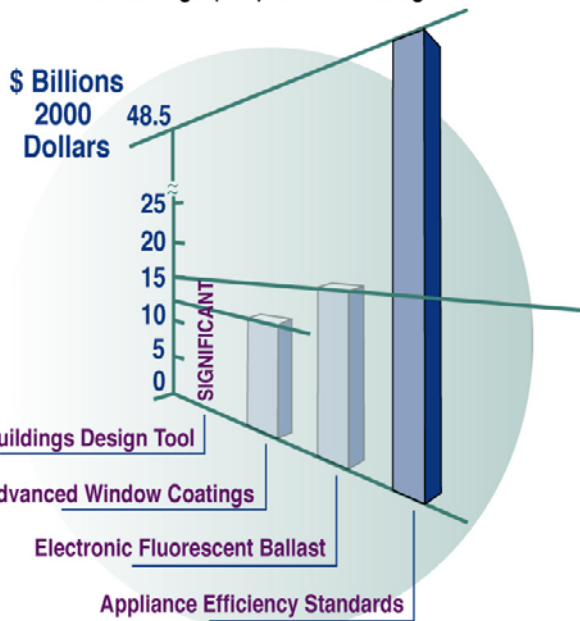


Source: IEA, EE Market Report, 2016

US STANDARDS AND LABELING PROGRAM

Estimate of Economic Benefits

Lifetime Savings (Net) for Technologies*



- EE standards is the largest source of Economic Benefits from all USDOE Energy Efficiency programs
- **Today** 60 categories of appliances and equipment are included
 - As a result, American consumers saved \$63 billion on their utility bills in 2015 alone, representing ~\$500 per household
 - By 2030, cumulative operating cost savings from all standards in effect since 1987 will reach nearly \$2 trillion



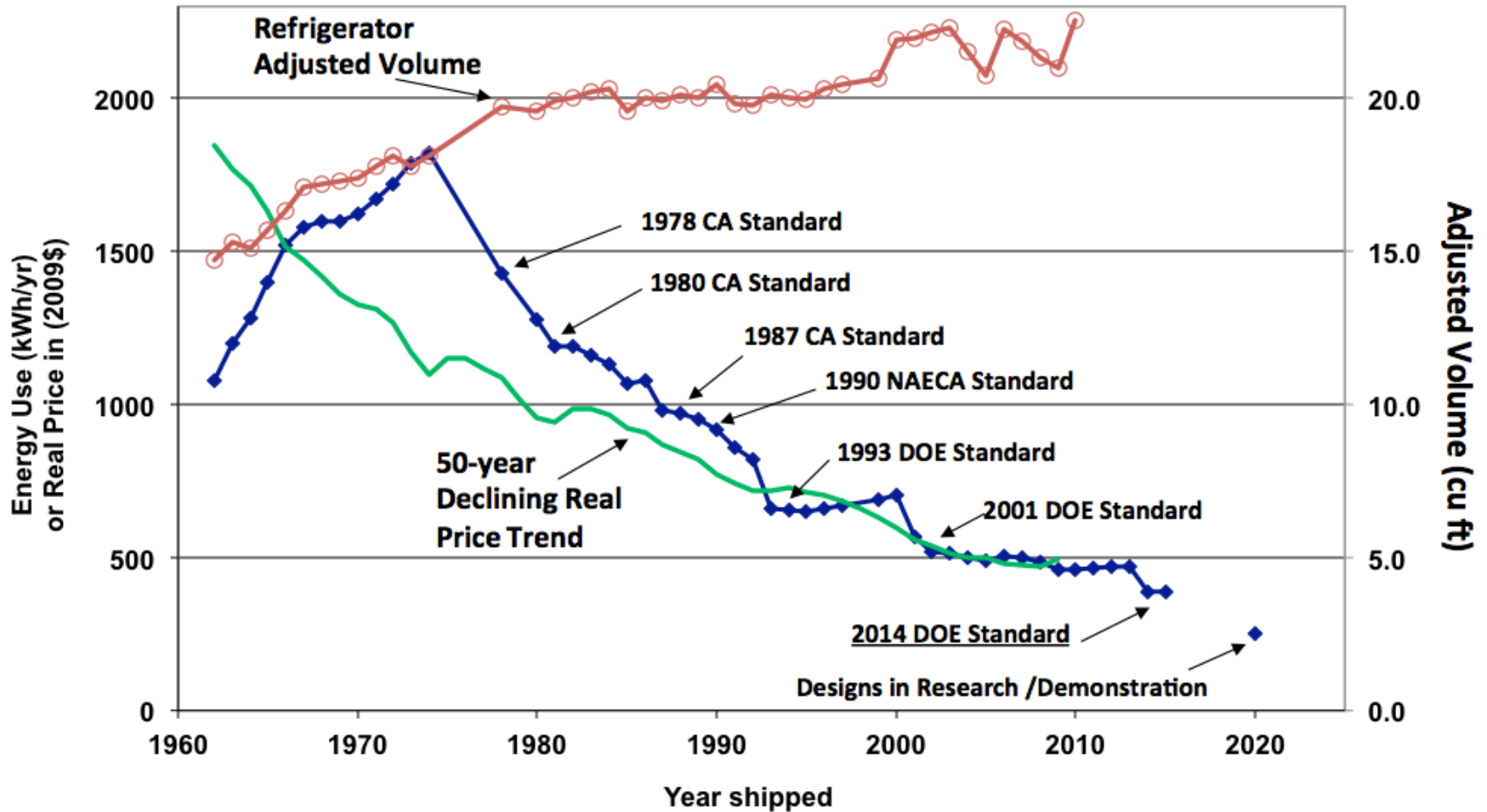
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U.S. AND CALIFORNIA APPLIANCE STANDARDS

Average Annual Energy Use, Volume and Real Price of New Refrigerators

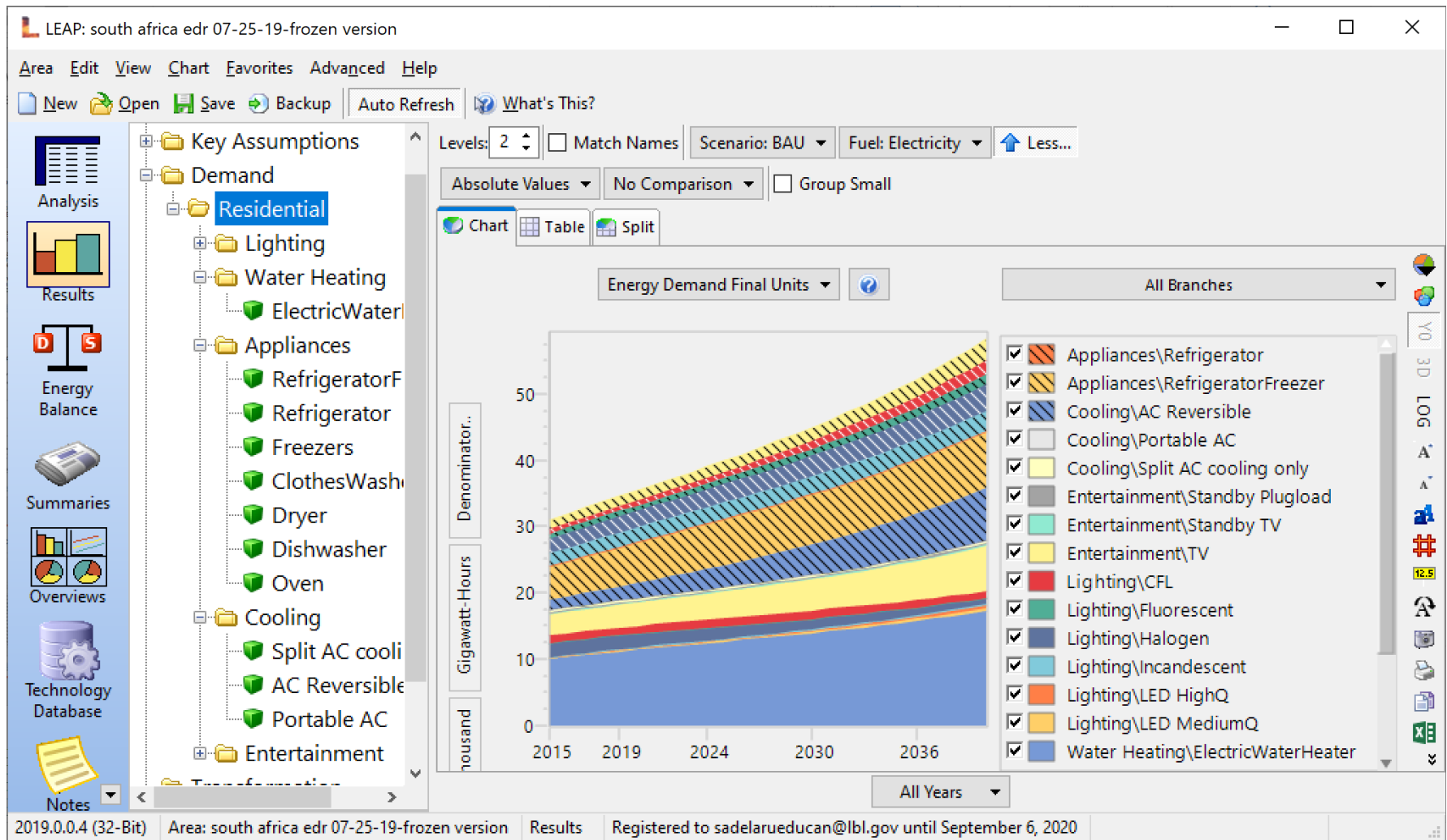
Sources: AHAM, Rosenfeld 1999, LBNL/EES and Bureau of Labor Statistics



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STOCK TURNOVER MODELING IMPACT TOOL



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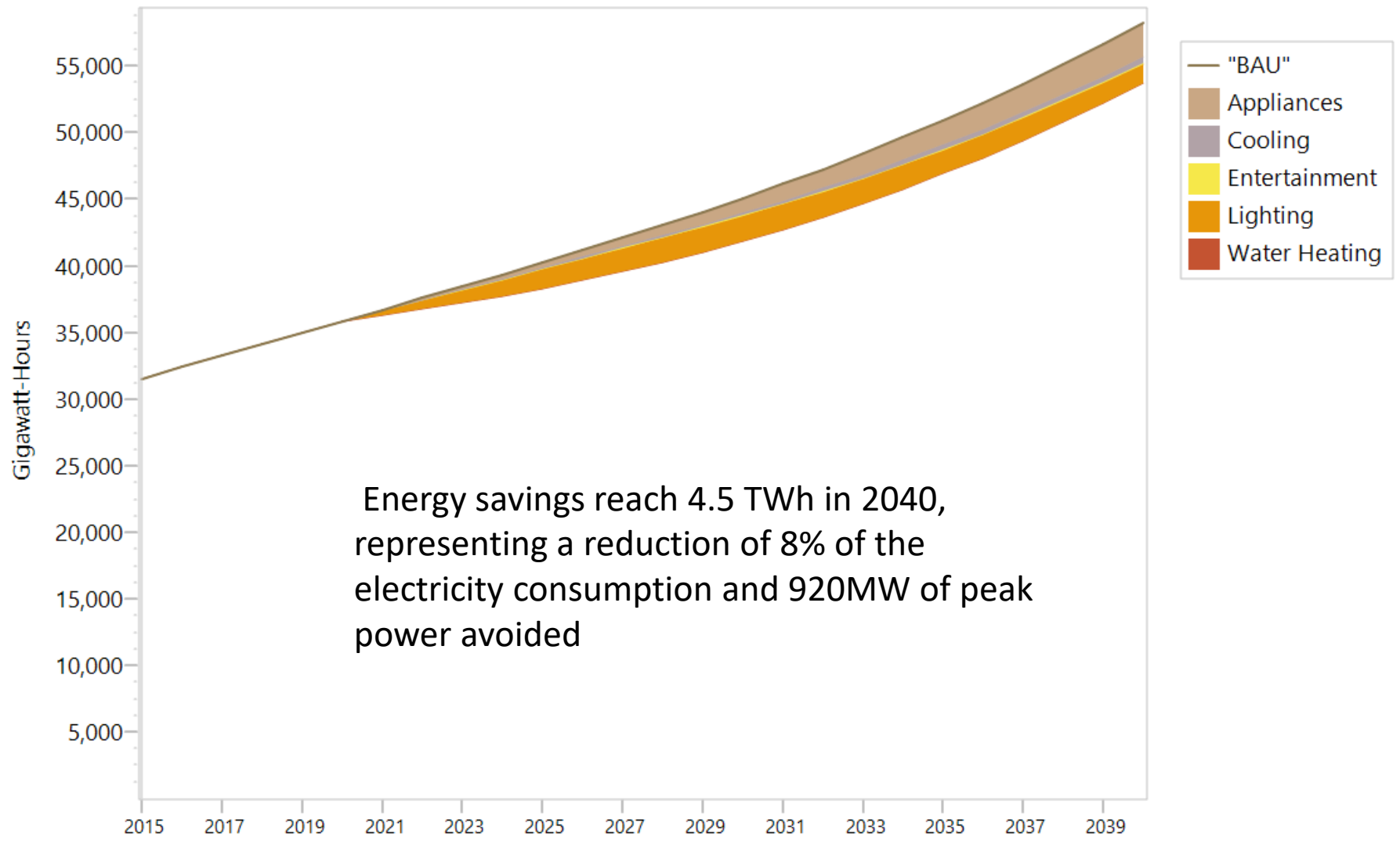


UEC MODELING ASSUMPTIONS

	Product Sub-Type	Baseline Rating	Proposed	Best Practice
Appliances	Refrigerator-Freezers	B	2021: A 2027: A+	2021: A+
	Refrigerators	B	2021: A 2027: A+	2021: A+
	Freezers	C	2021: B 2027: A	2021: A+
	Clothes Washers	A	2023: A+	2023: A+
	Dryers	D	2021: C	2021: B
	Dishwashers	A	No change	2021: A+
	Ovens	B	2021: A	20121:A
Water Heating	Electric Water Heaters	B	No change	2021: A
Entertainment	TV	-	No change	CA MEPS
	Standby TV	0.58W	0.5W	0.1W
	Other Plug Load	0.58W	0.5W	0.1W
Space Conditioning	Split Cooling Only	B	A	A+
	Split Reversible	B	A	A+

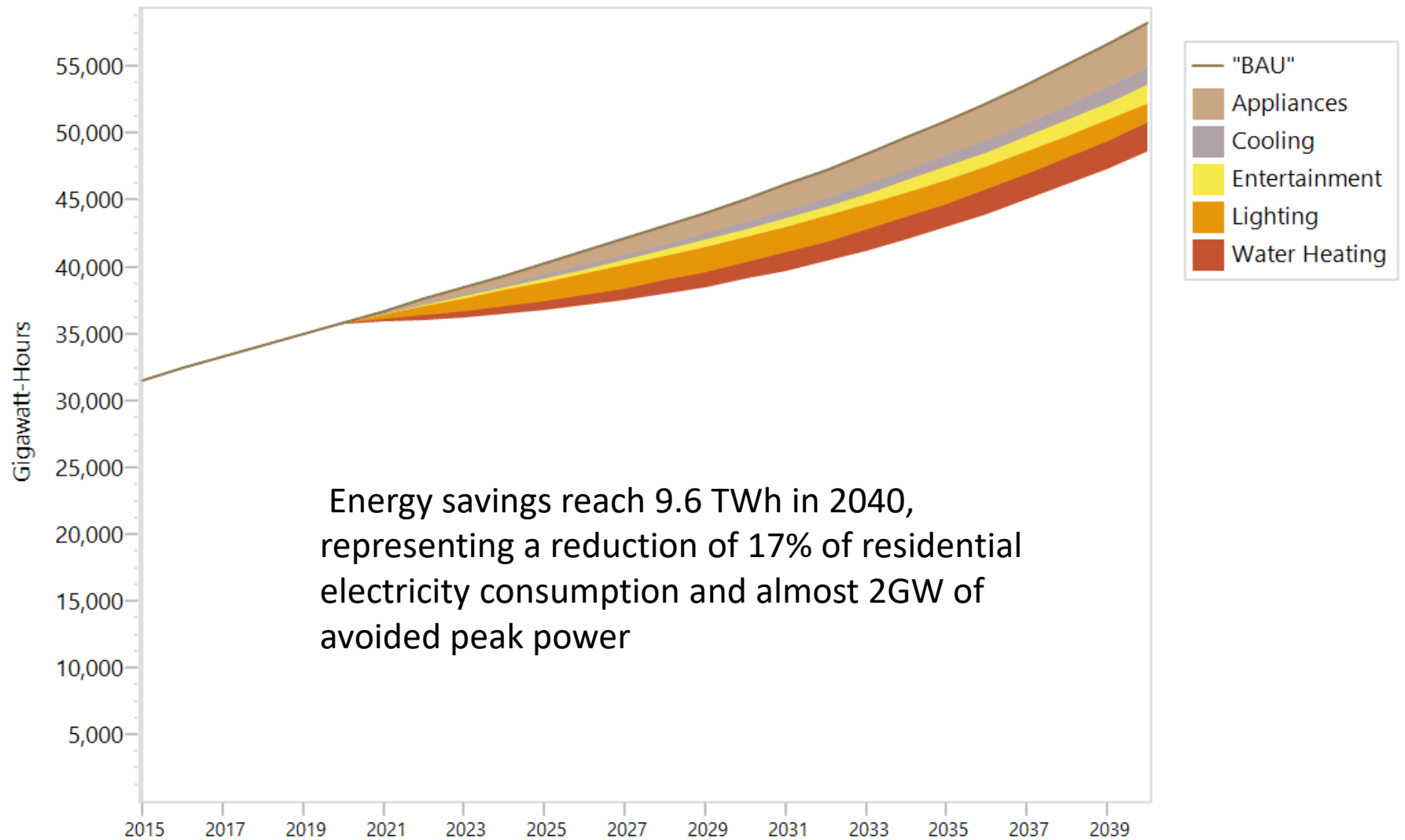
Energy Demand Final Units

Scenario: Proposed Wedge vs. BAU, Fuel: Electricity









Energy Demand Final Units

Scenario: BestPractice Differences vs. BAU, Fuel: Electricity





Multi-Benefits

	2040
	9.6 TWh of annual electricity savings
	24 billion rand of annual energy bill savings, representing an average annual bill saving of 978 rand per household
	Reduction of 5.8 million tons of CO ₂ emissions
	Water savings of 8.3 billion litres
	Reduction of 3.2 million tons of coal burned
	Avoiding emissions of the following atmospheric pollutants: <ul style="list-style-type: none">• 6 kt of particulate• 5.0 Mt of SO_x emissions• 25 kt of NO_x emissions



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Thank You!



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PROGRAM COSTS

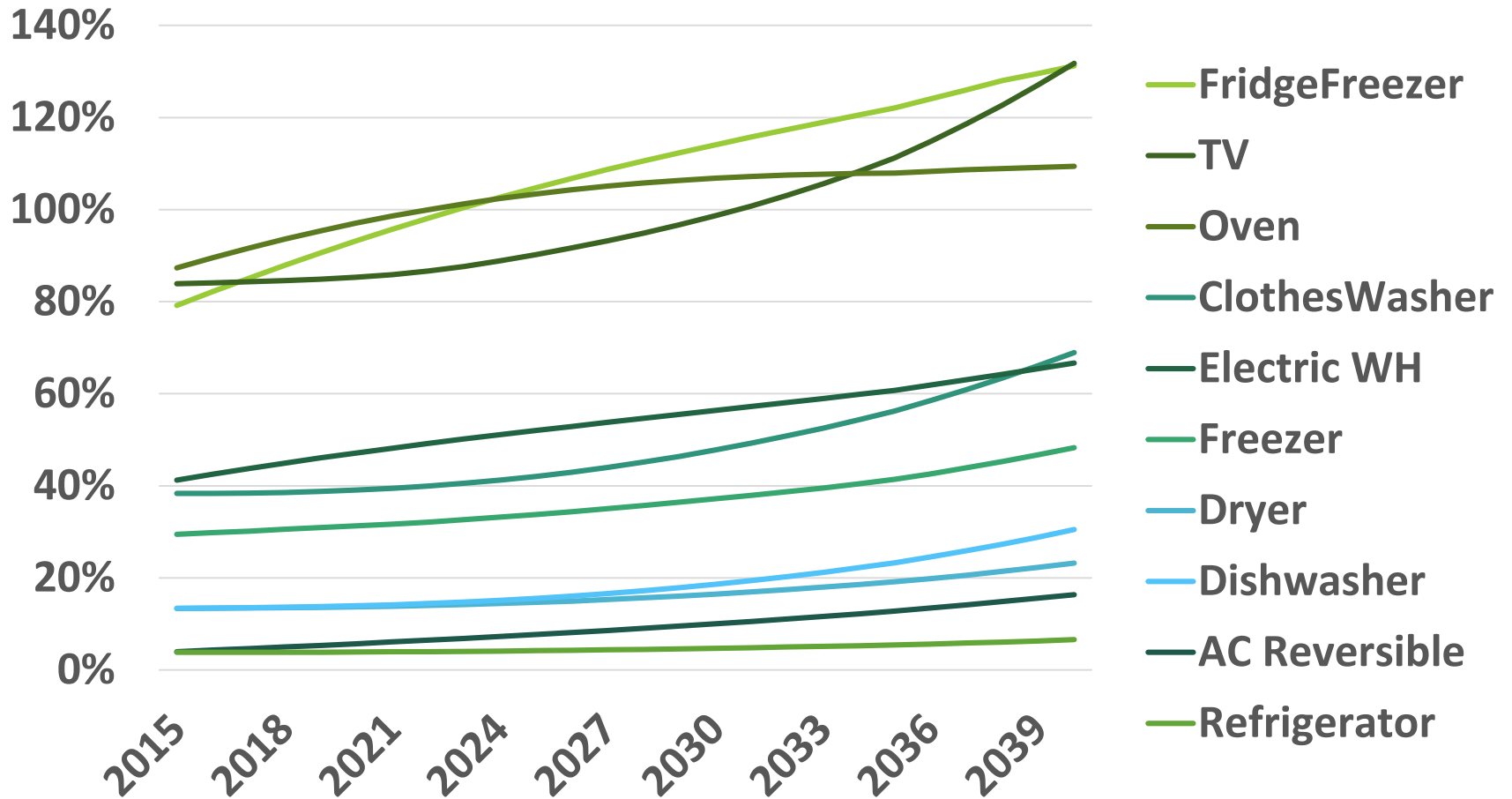
The cost to the government of saving 1 kWh is 100 times cheaper than the cost to supply 1 kWh

- 2015-2019 S&L Implementing Budget received from GEF: US\$4.4 million
- Considering the same budget for 2020-2023 to implement the Best Practice MEPS
 - Saving 5.8TWh per year in average
- The cost to the government of saving 1 kWh is 1 cents of a rand
- This compares very favorably with the cost to supply a kWh which is on the order of 115 c/kWh in IRP 1.

The implementation of the S&L program save energy and reduce costs



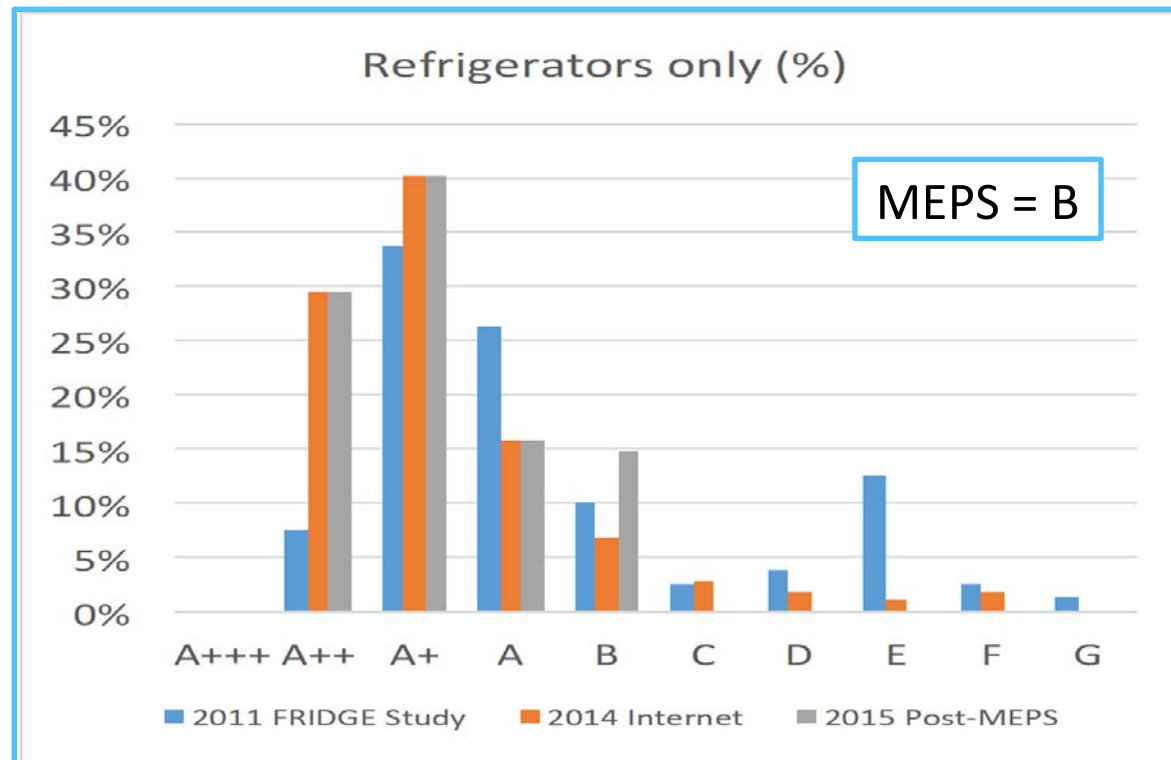
OWNERSHIP PROJECTIONS



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WEB CRAWLING: SOUTH AFRICA REFRIGERATOR EFFICIENCY DISTRIBUTION



Source: Enervee / SEAD / LBNL

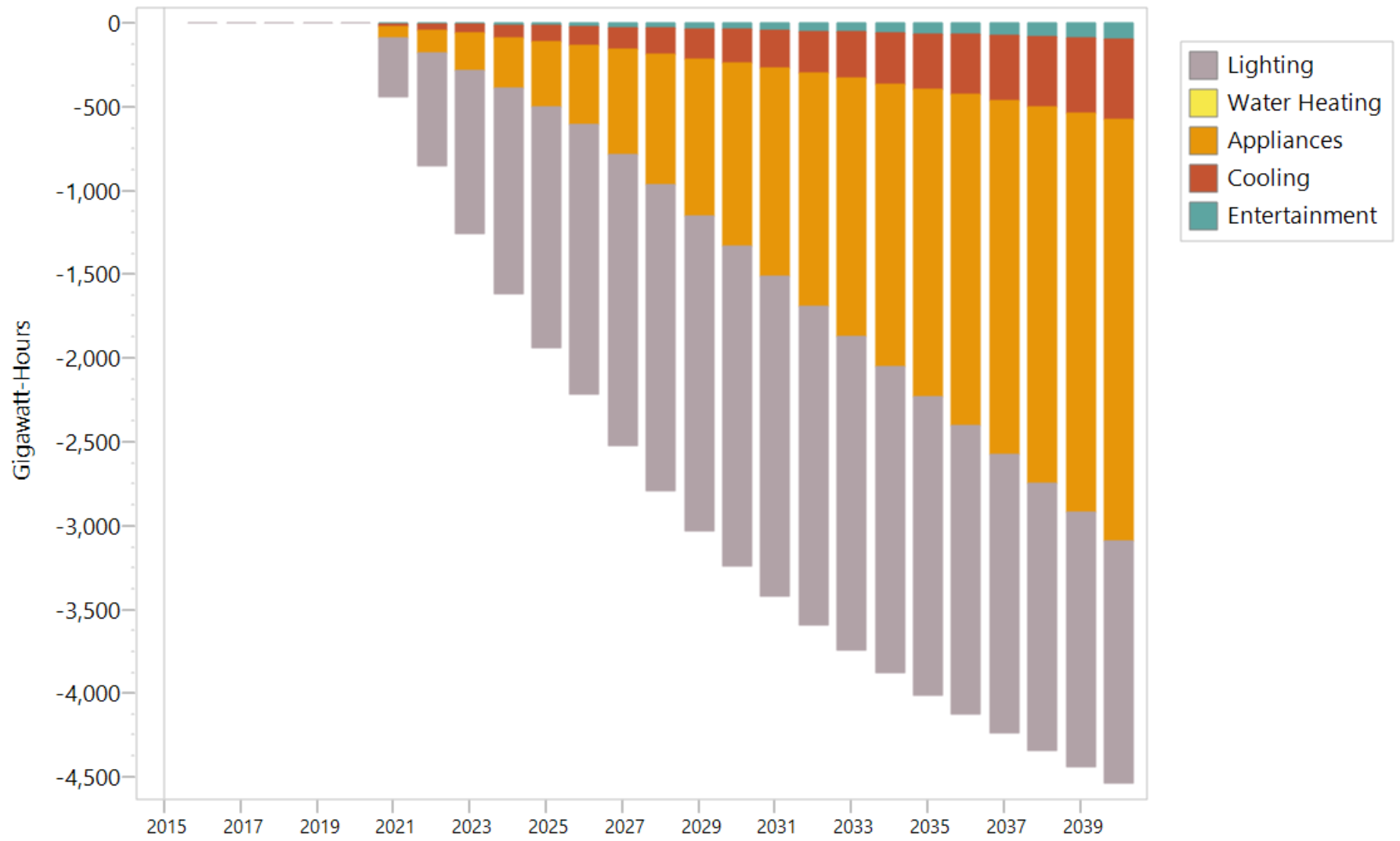


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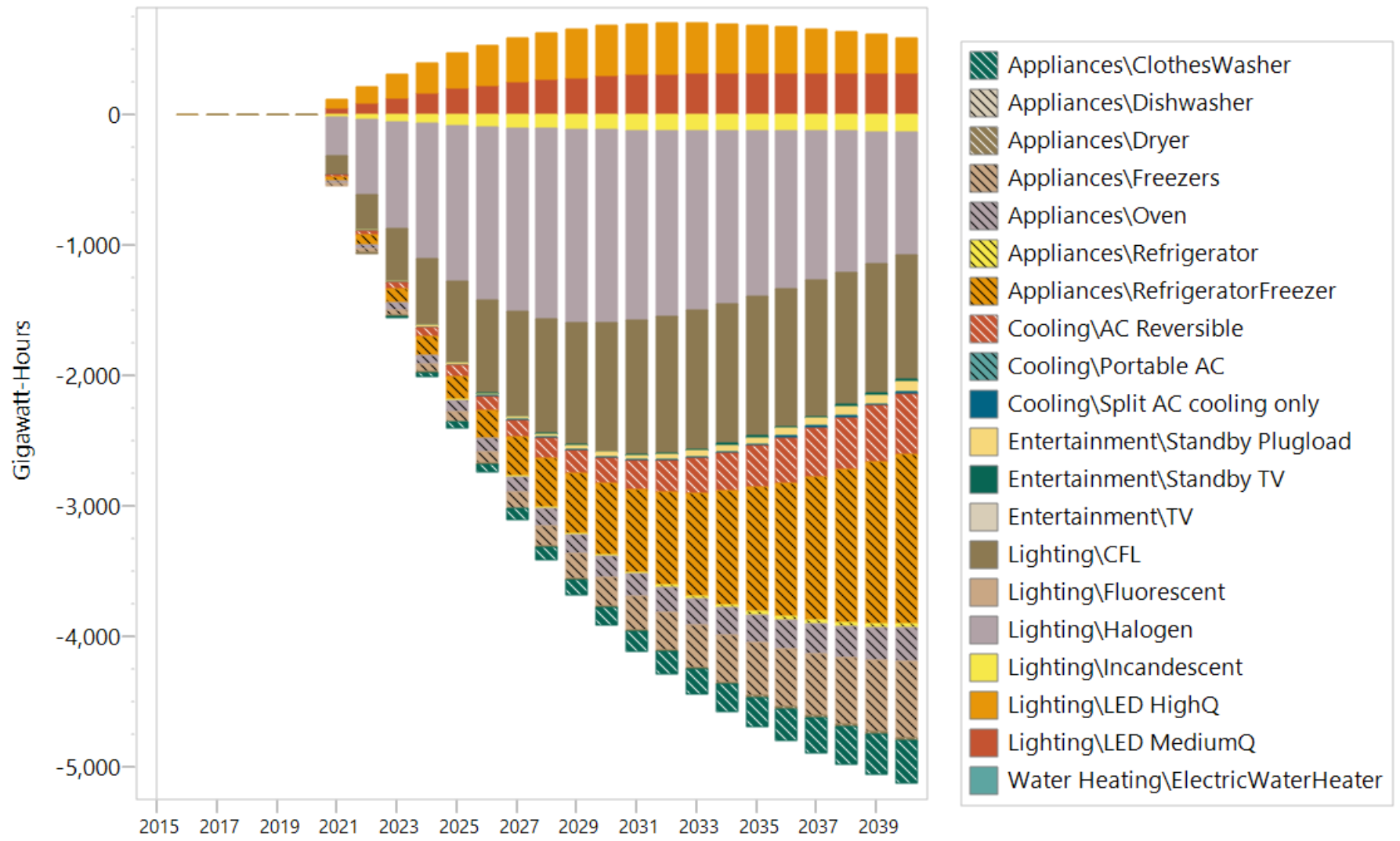
Energy Demand Final Units

Scenario: Proposed Differences vs. BAU, Fuel: Electricity



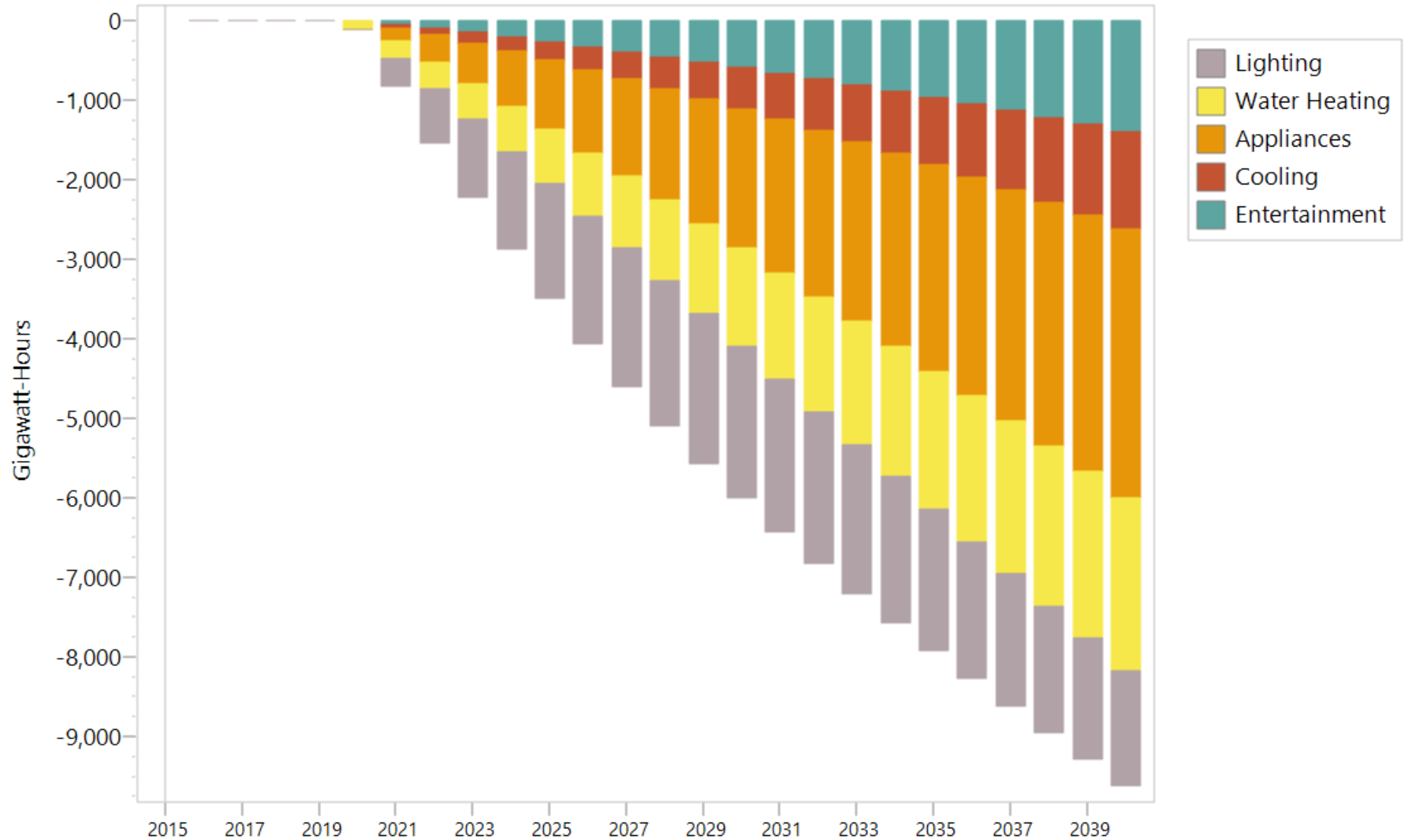
Energy Demand Final Units

Scenario: Proposed Differences vs. BAU, Fuel: Electricity



Energy Demand Final Units

Scenario: BestPractice Differences vs. BAU, Fuel:
Electricity



CONSIDER REGIONAL HARMONIZATION

The major goal of harmonization is to reduce non-tariff trade barriers by:

- Simplifying and harmonizing customs procedures among countries.
- Harmonizing test procedures, labels, and standards.
- Implementing mutual recognition agreements.

Benefits of Harmonization:

- Can decrease program costs
- Removes trade barriers
- Avoid dumping of inefficient products on unregulated or under-regulated markets

Harmonizing Test Procedures

- Most countries use (partly or wholly) standards from two international standards bodies: The International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC)

