



Energy Trust of Oregon's High Performance T8 Market Transformation Model

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What is a High Performance T8?

- HP T8: 32 watt has higher lumens and uses lower ballast factor ballast
 - 10-20% savings over “Standard” 32 w T8s
- “Standard” T8 lamps (i.e. “First Generation” 700-series and “Extended Life” 800-series)



Major Changes in Federal Standards

- Linear fluorescent lamp minimum standard 89 lm/w July 2012:
 - No more T12's or "Standard" T8 lamps
- Pending linear fluorescent ballast standard in 2014 may eliminate less efficient T-8s



Key Questions for Market Transformation

- Did market transformation result in more savings than the program's rebated installations?
 - Savings due to program spillover over the life of the program?
 - Savings due to federal standards?
- Would the MT have happened without Energy Trust's influence (and that of our peers)?



Major Model Assumptions

- Current MT savings coming from T12 replacements
- HPT8 impact on high-bay market is not included in study
- MT impacts are due to an earlier adoption of the standard than would have happened without program
- Energy Trust of Oregon and its peers influenced market adoption and changes in federal standards
- We are counting only savings in Energy Trust service territory



Influence Piece of the Puzzle

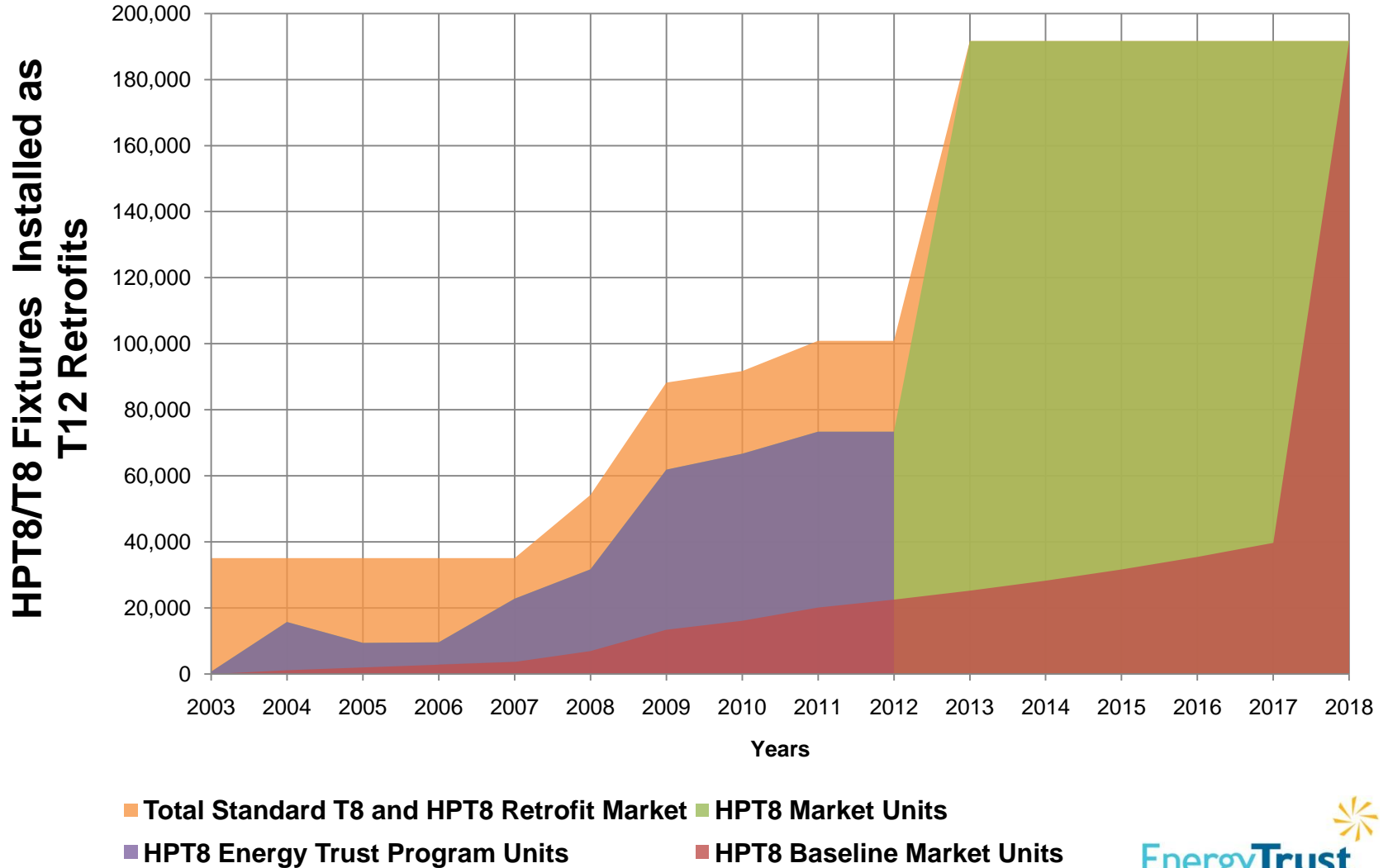
- Were Energy Trust and its peers highly influential on decisions regarding efficiency and/or timing of the Federal standard?
 - 8 of 9 experts involved in the federal standard change felt that incentive programs *were* influential on decisions regarding the federal standard and *when* it would be implemented
 - Modal response to when the standard would have changed without program efforts was 2017



Regional Influence

- Lighting distributors: all 5 felt that ETO influenced market through incentives
- Market experts: 5 of 6 felt that ETO influenced the market through education and training and 4 of 6 felt it was through incentives
- Supported by a 2009 survey of 60 Lighting trade allies:
 - Over 80 % said ETO was a “major” or the “most important” influence in the adoption of HPT8’s

T12 Retrofit Market

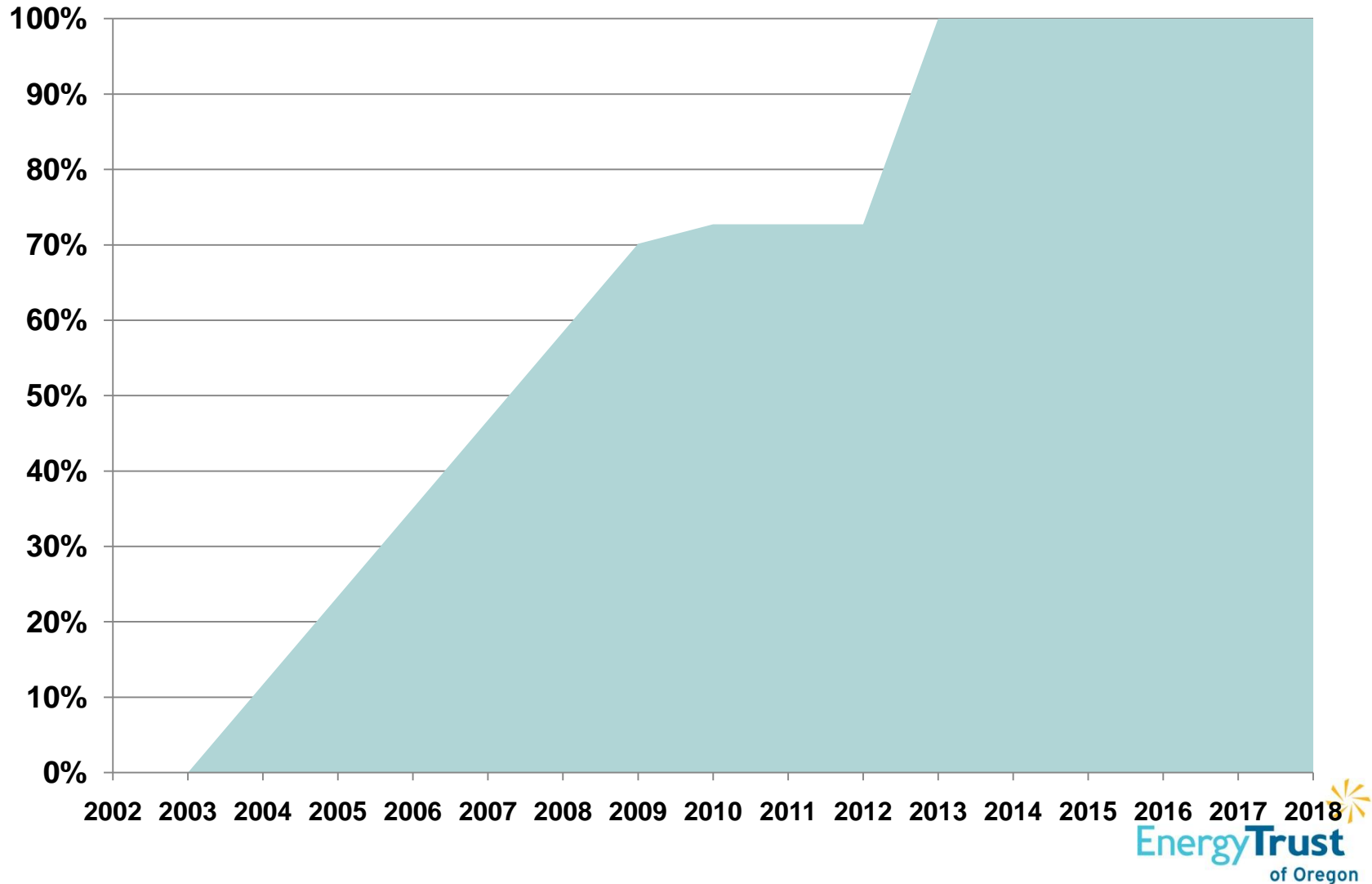




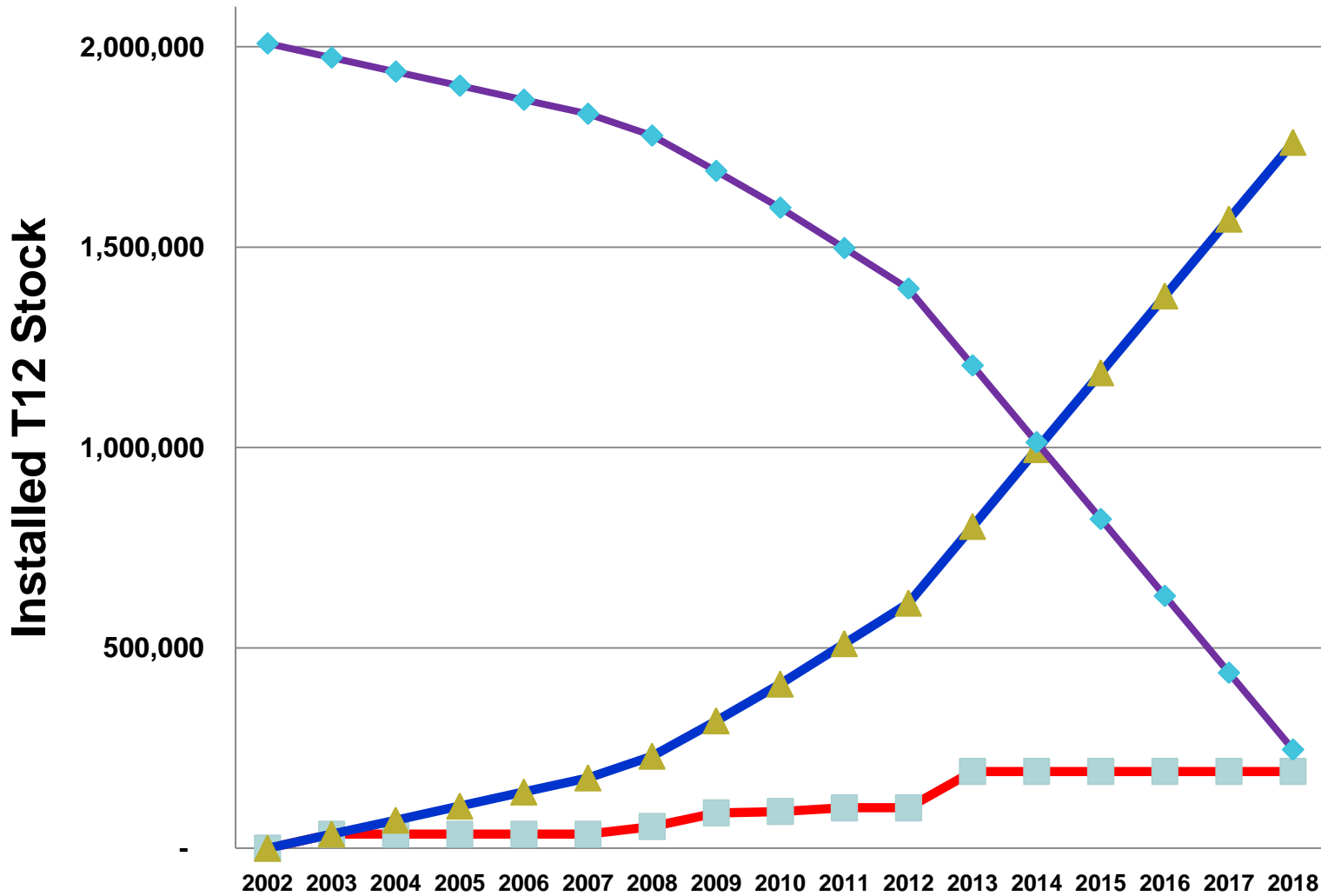
Pieces of the Puzzle

- HPT8 sales and fixtures replaced
 - ETO lighting retrofit data and distributor interviews
- T12 installed stock and replacement rates
 - Comprehensive Commercial Building Stock studies 2002 and 2007
- Oregon specific lighting sales and installed base of T12's
 - Lighting Market Assessment 2009
- HPT8 baseline
 - Department of Energy (DOE) Technical Support Document for General Service Fluorescent Lamp Federal Standard 2009

HPT8 Oregon Market Share (% of T12 retrofits/year)



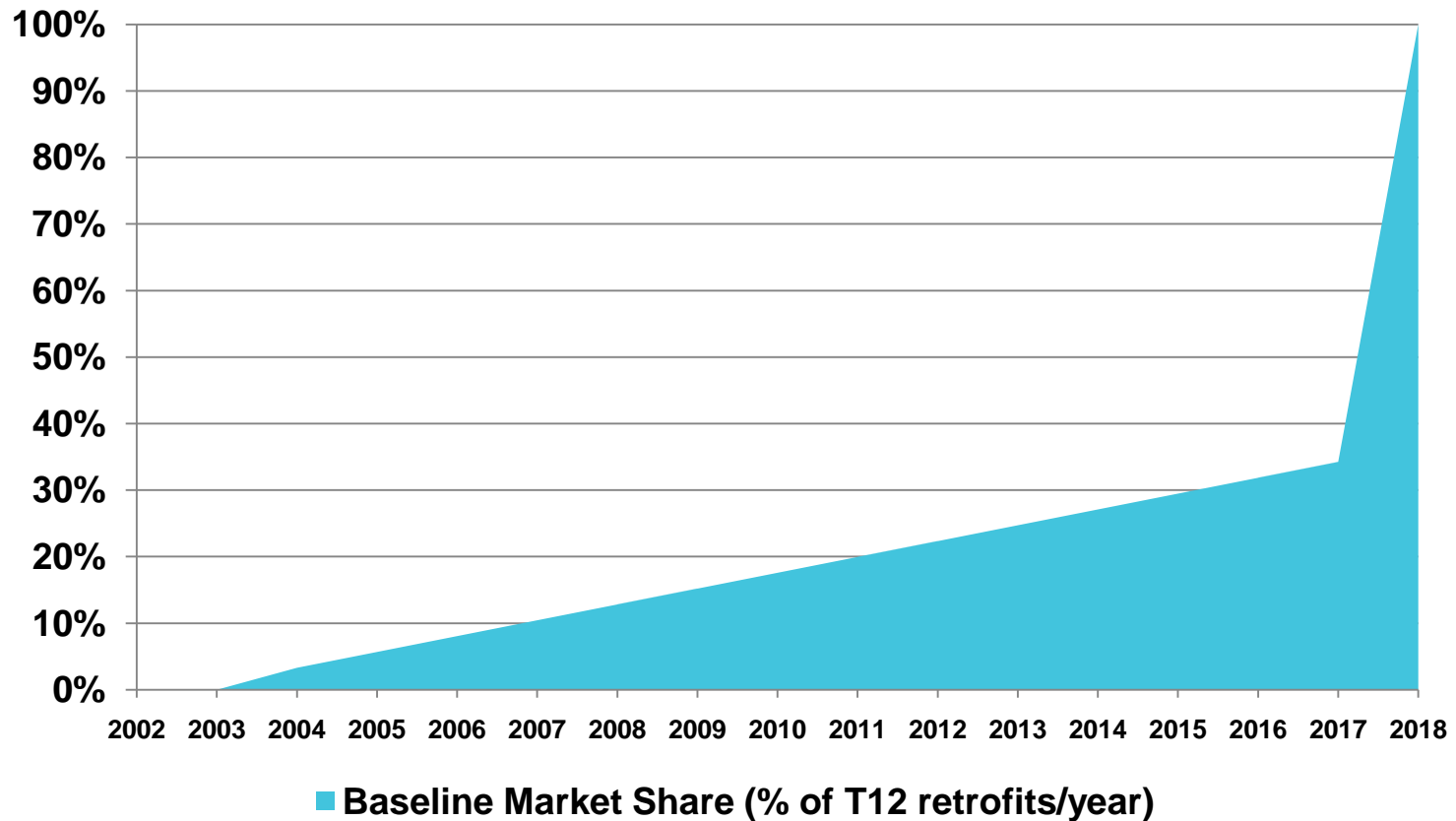
Oregon T12 Retrofit Market



■ Annual T12 Retrofit Projects ▲ Cumulative T12 Retrofit Projects ◆ Installed T12 Stock

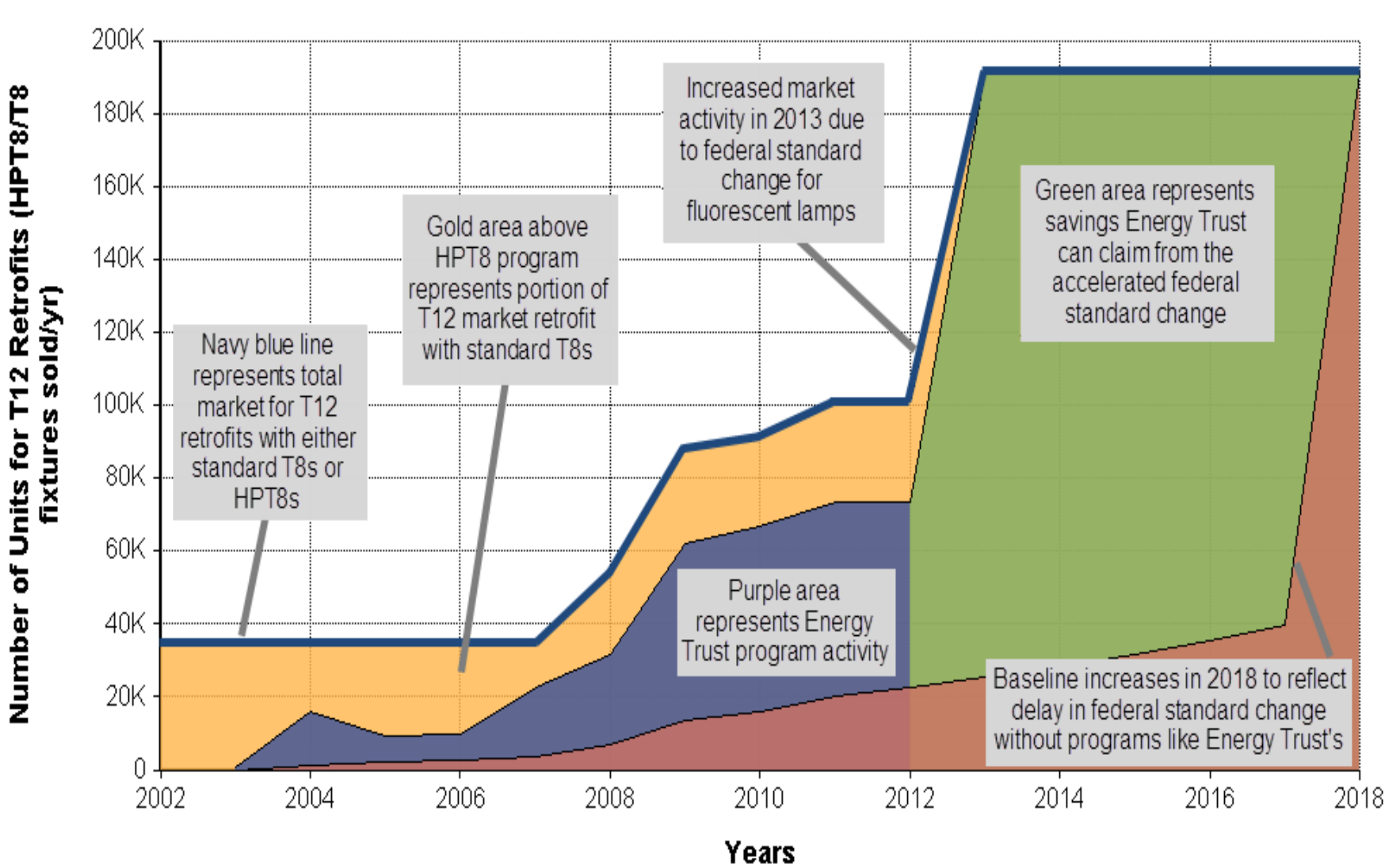


Baseline HPT8 Market Share (% of T12 retrofits/year)



■ Baseline Market Share (% of T12 retrofits/year)

HPT8 MT Model



Types of Units for T12 Retrofits

- HPT8 Baseline Market Units
- HPT8 Energy Trust Program Units
- HPT8 Market Units
- Total Standard T8 and HPT8 Retrofit Market