



NARUC Winter Meeting

**Demand Response
With and Without Smart Grid**

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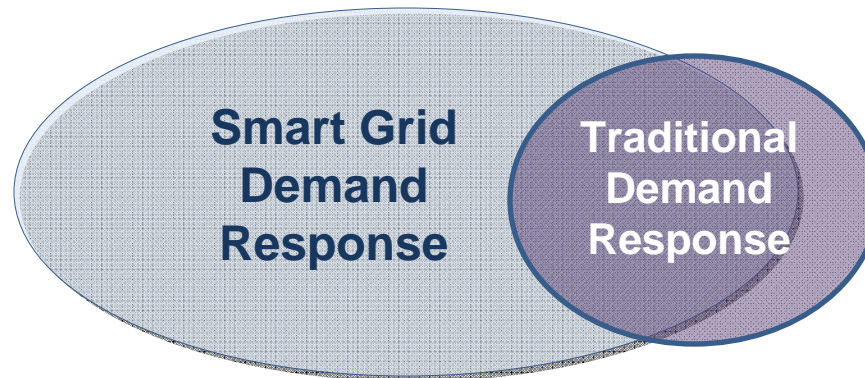
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Smart Grid Technical Advisory Project

•Traditional vs. Smart Grid Demand Response



Residential Demand Response



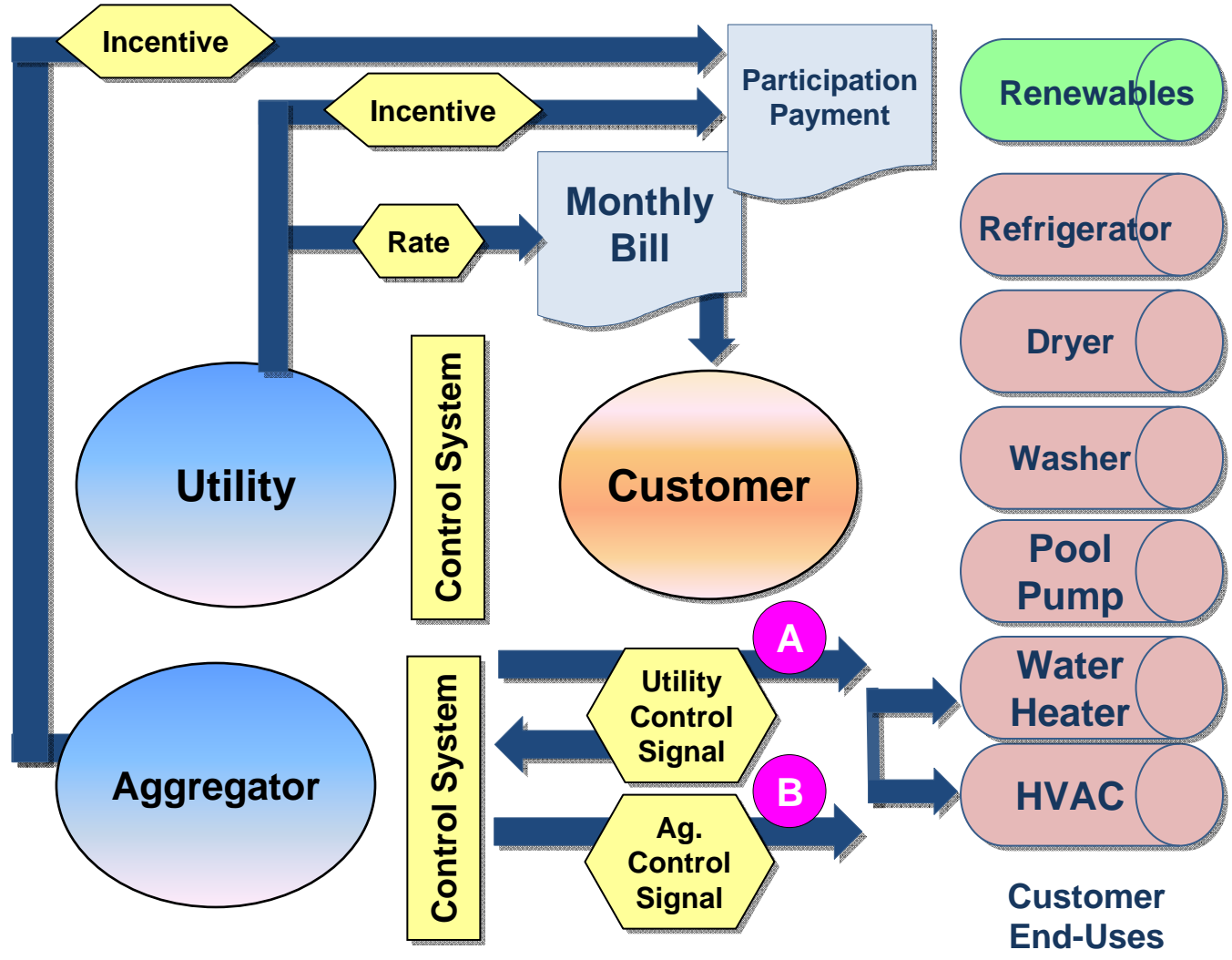
Traditional Demand Response

- Primarily utility control
- Focuses on a few end uses
- Limited customer options
- Participation incentives
- Primary focus – retail markets

Smart Grid Demand Response

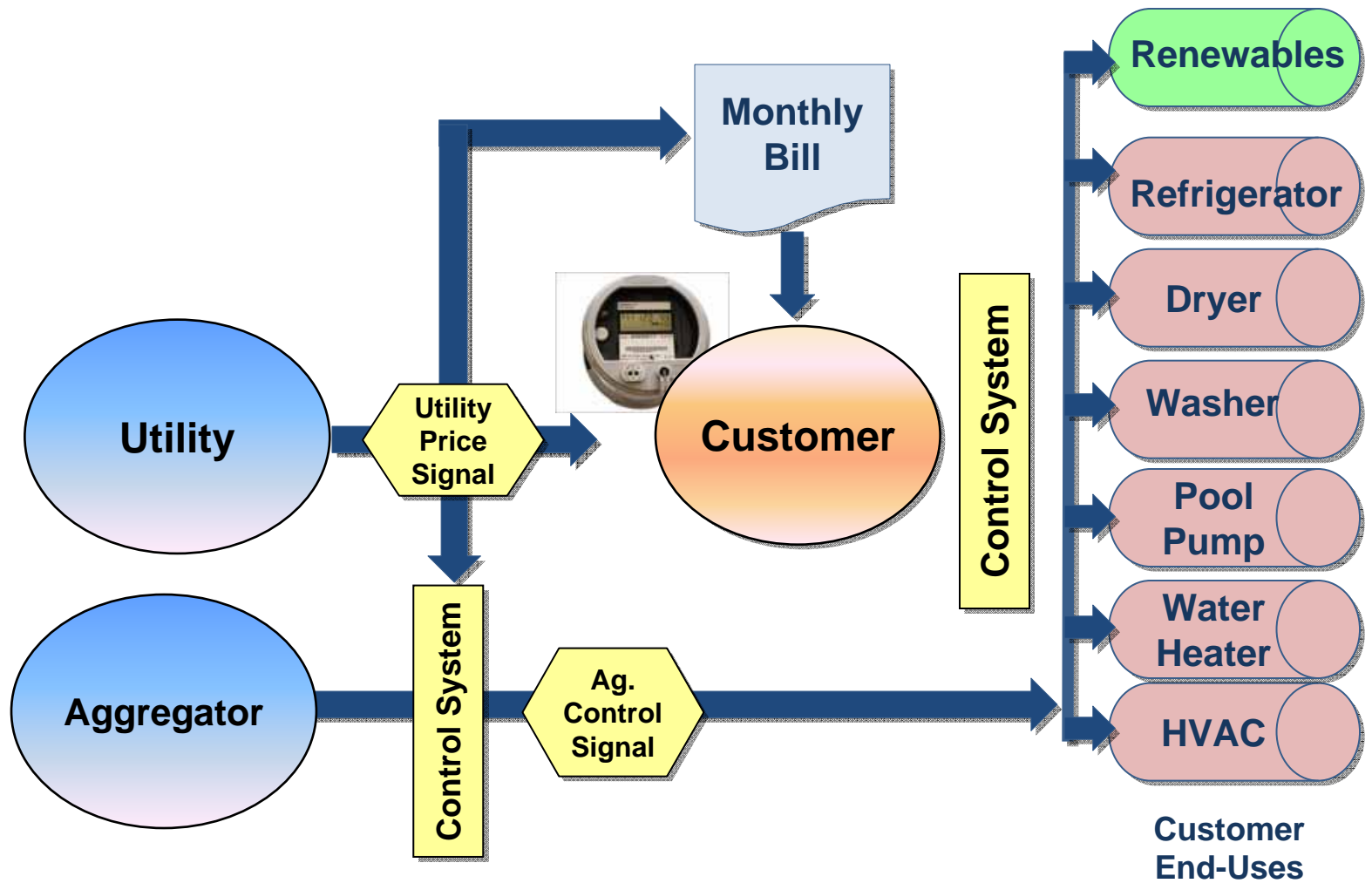
- Emphasizes customer control
- All end uses
- Unlimited customer options
- AMI enables dynamic pricing for all customers
- Wholesale and retail markets linked

Traditional Residential Demand Response



Flat Rate, Fixed Incentive, Direct Control

Residential Demand Response Under Smart Grid



Traditional vs. Smart Grid Demand Response



	Conventional DR	Smart Grid DR
Participation	Targeted, Limited to Large C/I & Residential	All Customers
Who Controls	Utility	Customer
What is Controlled	<ul style="list-style-type: none"> • Interruptible Rates • Res. HVAC, Water Heating 	All Loads Available
Control Equipment	<ul style="list-style-type: none"> • Utility Provided • Few Suppliers 	<ul style="list-style-type: none"> • Customer Provided • Many Market Suppliers
Incentives	<ul style="list-style-type: none"> • Fixed / Participation Payments • Baseline metrics 	<ul style="list-style-type: none"> • Retail Dynamic Prices • Reservation payments • Pay-for performance
DR Products	Generally limited to Reliability	Capacity, Energy, Ancillary Services Markets; Congestion Management
DR, EE, Renewable Integration	No	Yes