

# CHP Implementation Benefits and Challenges

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# Centralized Energy



UTILITY

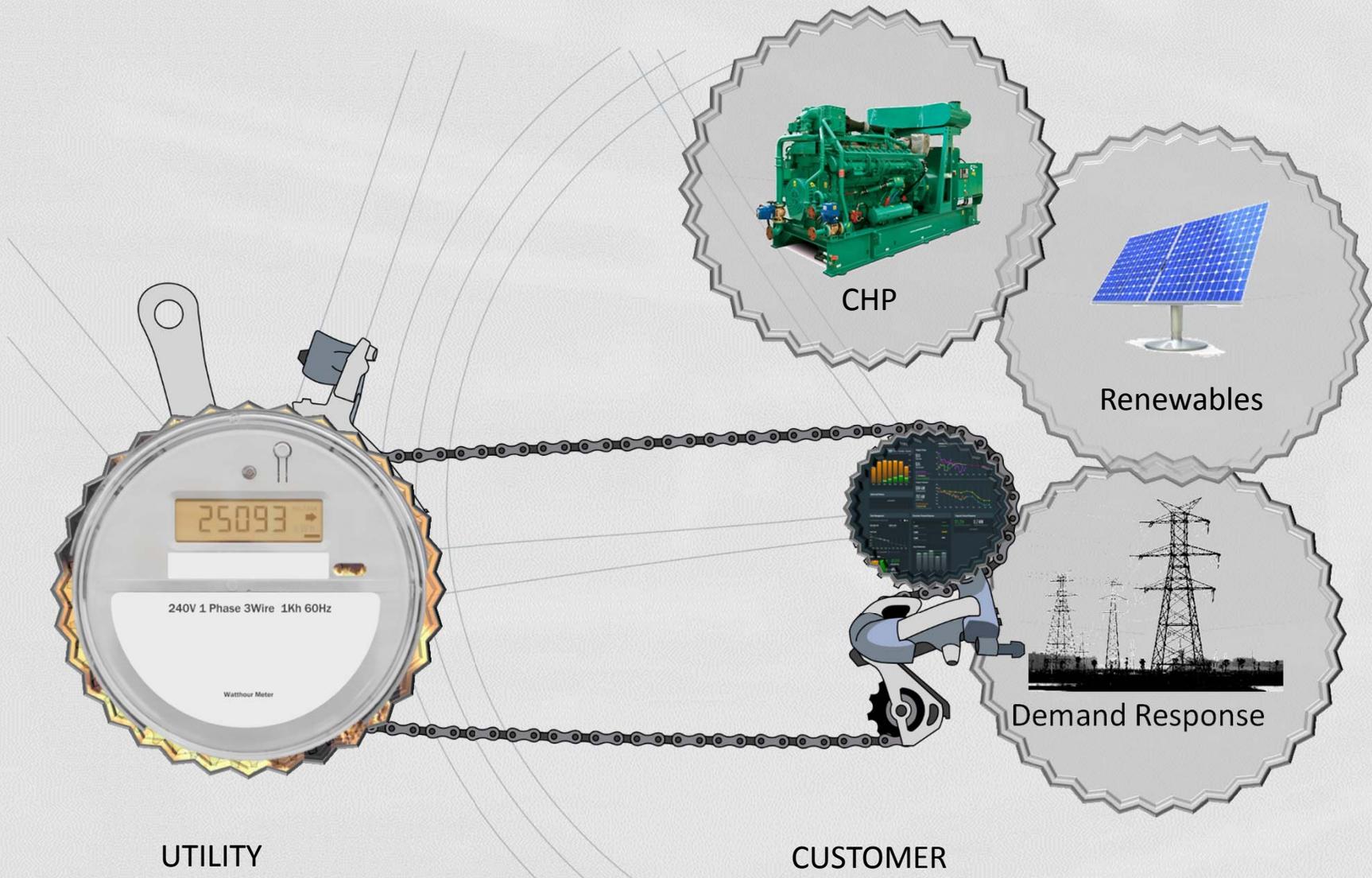
CUSTOMER

## KEY ISSUES

- Plant Retirements
- Aging Infrastructure
- Transmission Congestion

***System Stress***

# Decentralized Energy



# Decentralized Energy

## Key Benefits

- No additional T&D required
- Leverages smart meter deployment
- Efficiency Improvements

*Less System Stress*



# Decentralized Energy

## Economic Potential

85

PA and OH  
Customers



10 - 20%

Capacity Reductions

\$3M - \$6M

Capacity Savings



CUSTOMER

# Decentralized Energy - CHP

## SUCCESS FACTORS



Real Issues



Tangible Benefits

Access to fuel

Project Capital

Lower Barriers

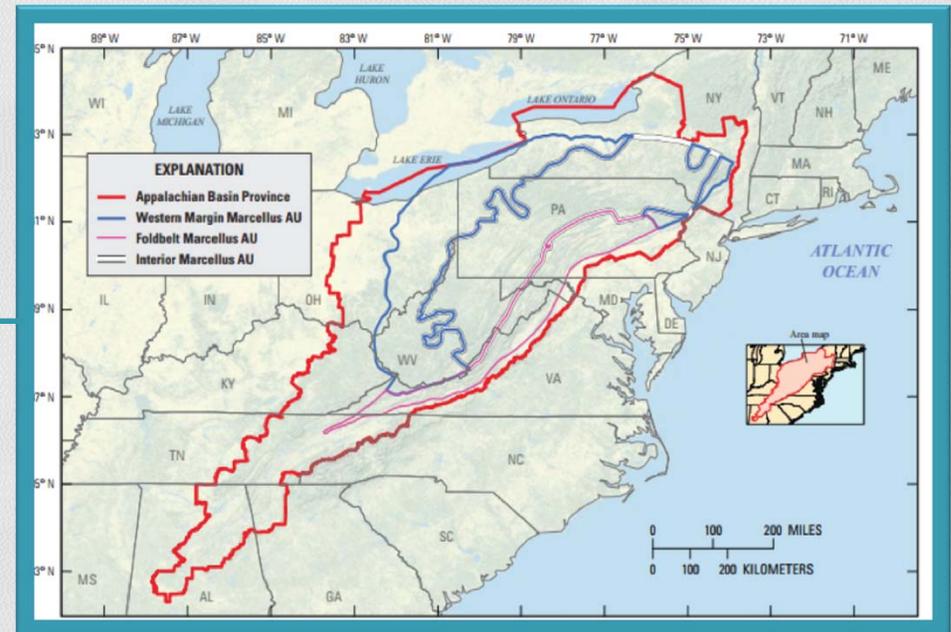
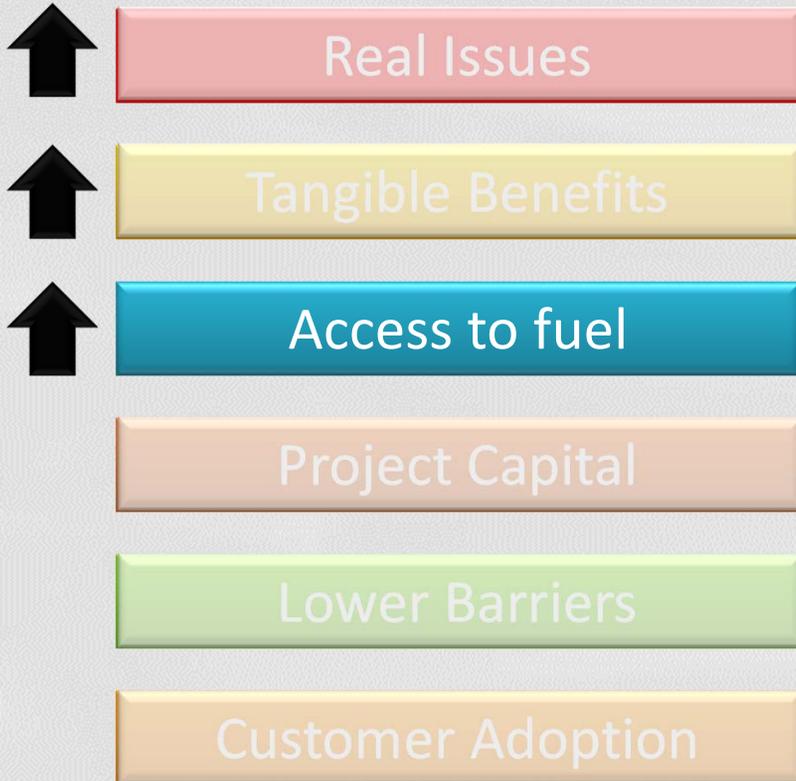
Customer Adoption



# Decentralized Energy - CHP



## SUCCESS FACTORS

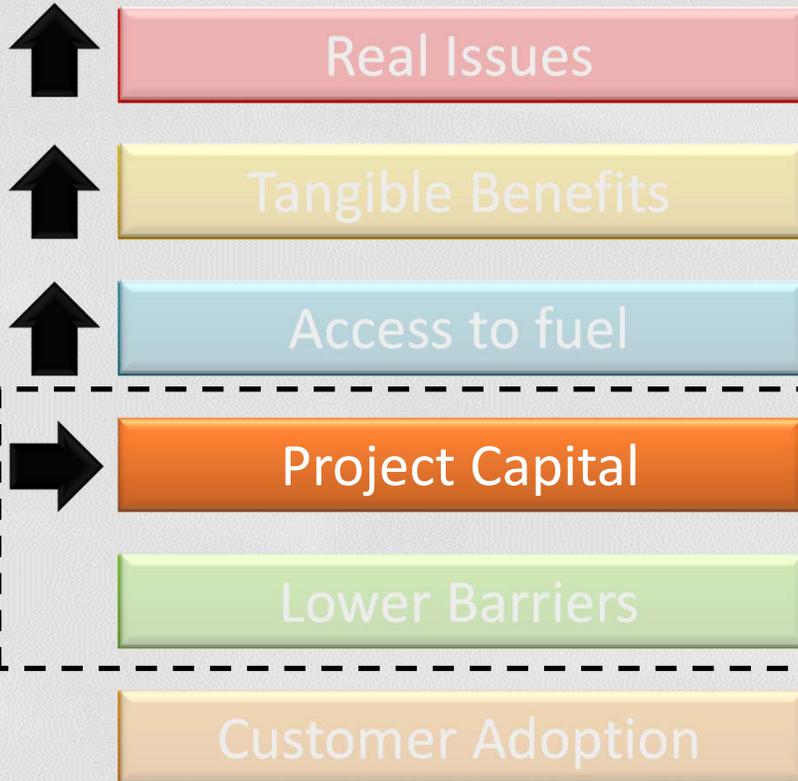


SOURCE: USGS

# Decentralized Energy - CHP



## SUCCESS FACTORS



### **Executive Order -- Accelerating Investment in Industrial Energy Efficiency**

*...Despite these benefits, independent studies have pointed to under-investment in industrial energy efficiency and CHP as a result of numerous barriers.*

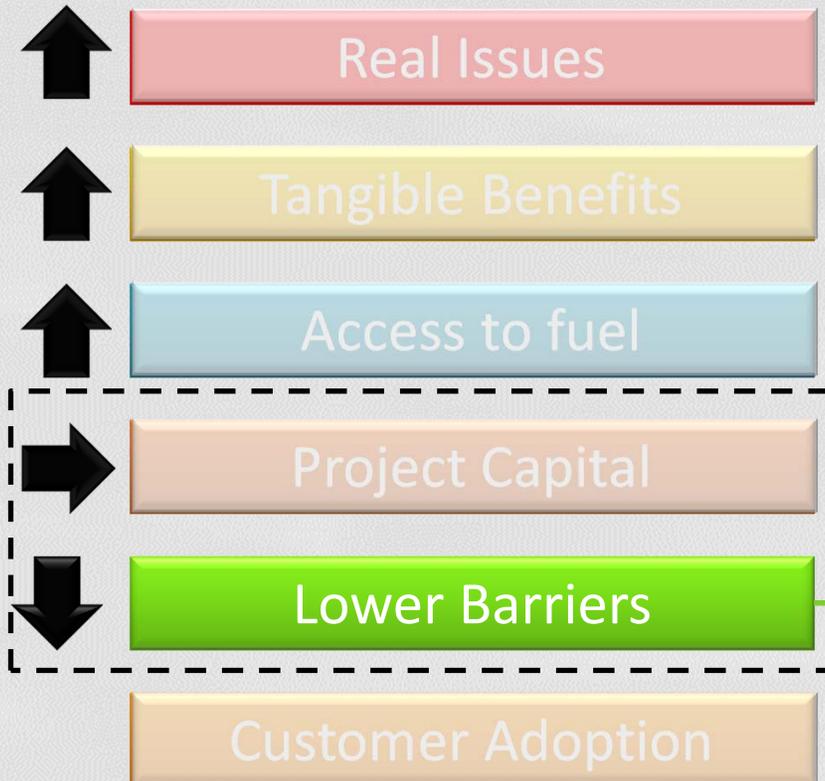
SOURCE: [Whitehouse.gov](http://Whitehouse.gov)

Project capital ***is available*** but on the side lines awaiting the removal of barriers.

# Decentralized Energy - CHP



## SUCCESS FACTORS

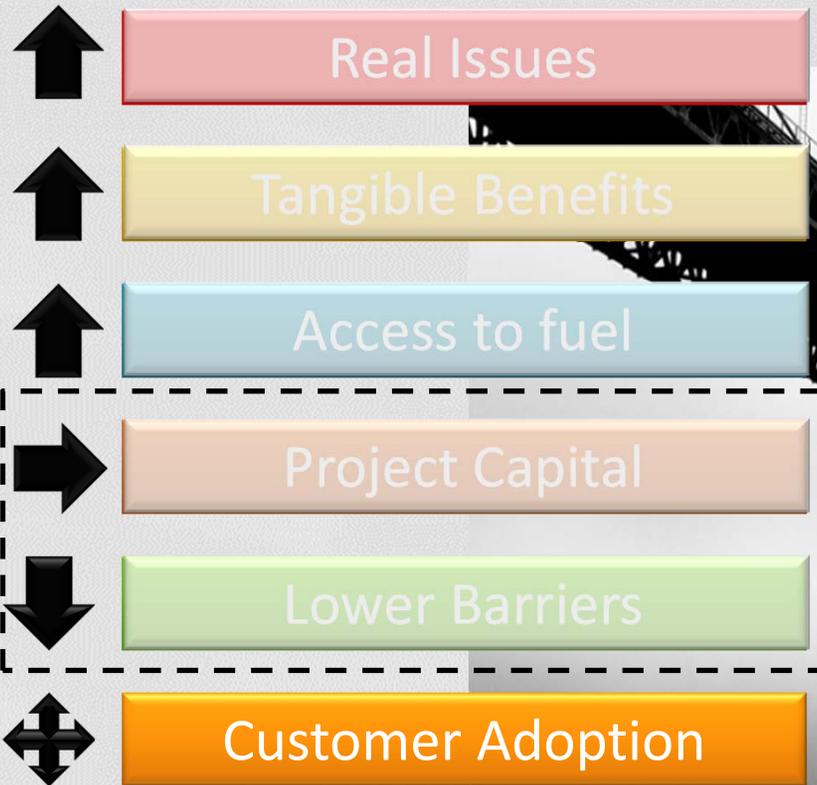


- Interconnection issues
- Utility upside opportunities
- Regulatory certainty

# Decentralized Energy - CHP



## SUCCESS FACTORS



## CUSTOMER NEEDS

- True Economics
- Holistic Solution