



Emerging Markets

The new policy landscape for successful programs

D. Jensen Adams
Metropolitan Energy Center.
Associate Executive Director
EnergyWorks KC Program Manager
Jensen@kcenergy.org

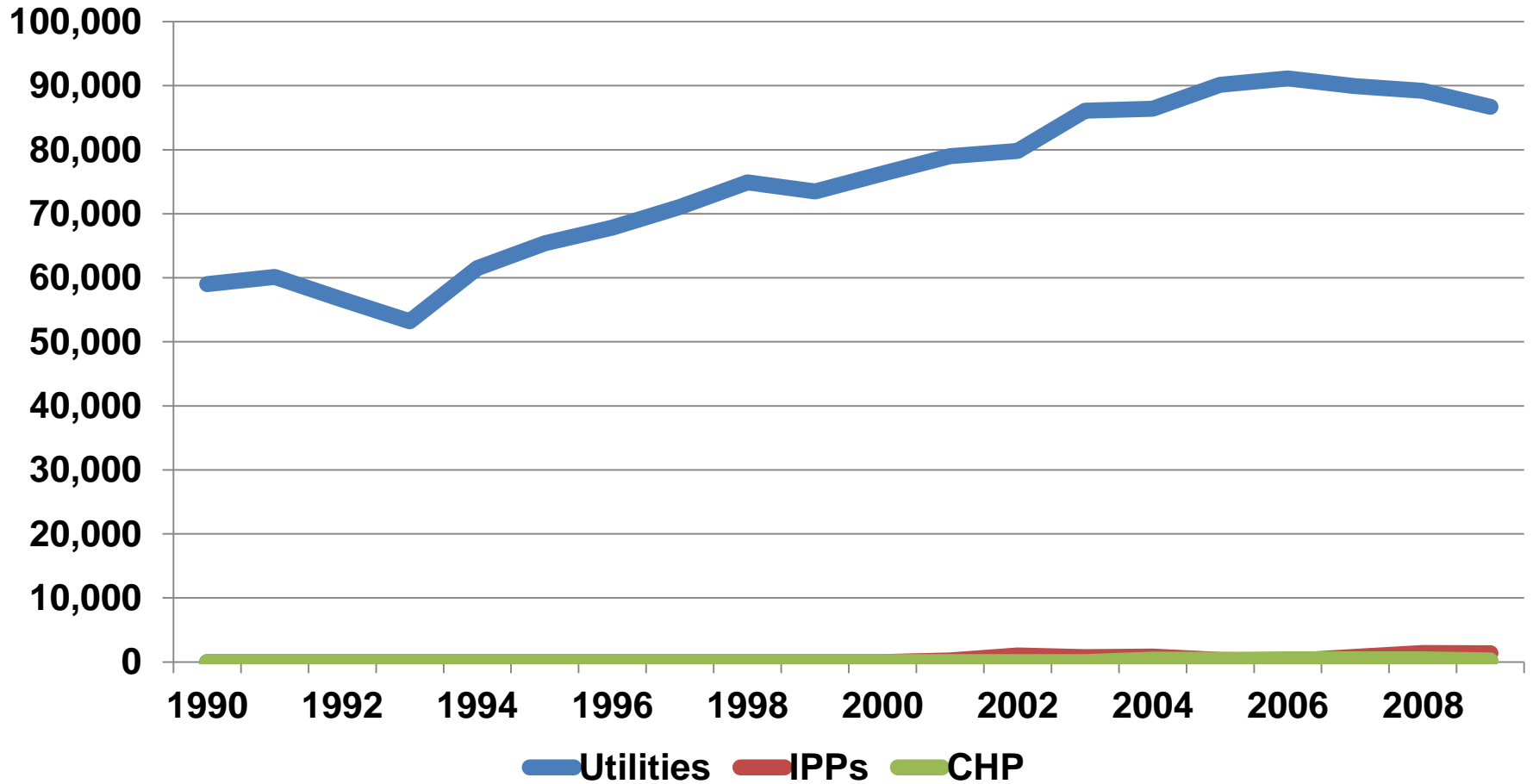
April, 2012

Metropolitan Energy Center

- The Metropolitan Energy Center is a nonprofit, 501(c)(3) organization based in Kansas City, Missouri, dedicated to promoting resource efficiency to enhance economic vitality, environmental health, and social wellbeing.
- MEC was incorporated in 1983 and now operates with approximately 30 staff in program areas including: buildings, transportation, health, workforce development, renewable energy, and behavior.
- MEC designs and implements programs for utility and government partners, such as Home Performance with ENERGY STAR, Clean Cities, and most recently, ARRA programs for buildings, fleet vehicles, and solar research.



Missouri Electricity Generation by Primary Energy Sources (GWh)





MAP LEGEND

- ▣ Coal Mine, Surface
- ▣ Coal Mine, Underground
- ★ Natural Gas Hub
- ▣ Petroleum Refinery
- ◆ Oil Import Site
- 🏗️ Oil Seaport
- Electricity Transmission Line (>= 345 kV)
- 👉 Natural Gas Flow (1 mile band width = 100 million cubic feet/day)
- ▨ Oil and Gas Active Leases

MAJOR ELECTRIC POWER PLANTS (>=100 MW)

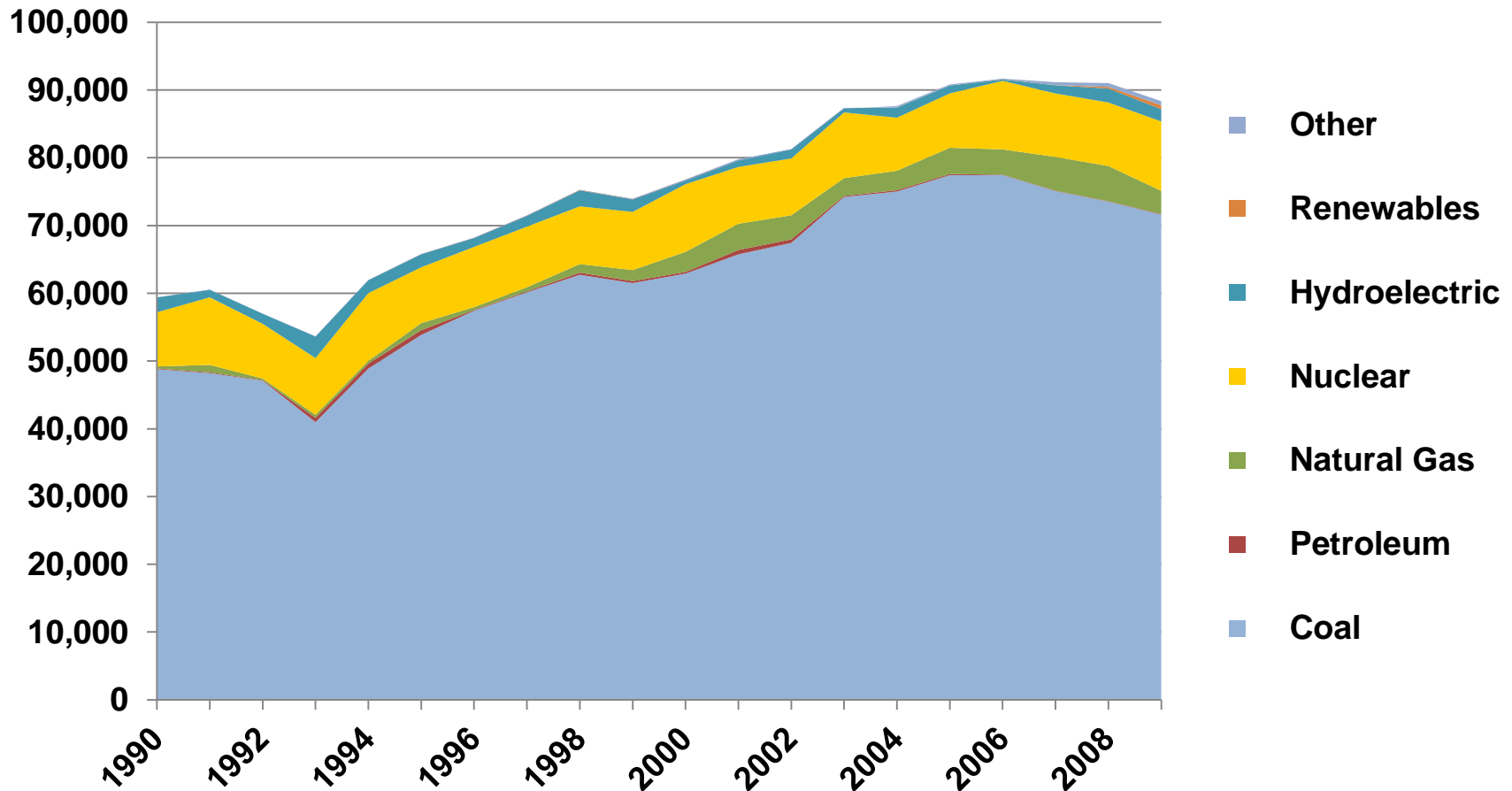
▲ Coal	● Petroleum
⊙ Geothermal	☀️ Solar
◆ Hydroelectric	✕ Wind
▼ Natural Gas	🌳 Wood
⊛ Nuclear	● Other Renewable

RENEWABLE ENERGY POTENTIAL

▨ Biomass (>= 50 tons/sq km/yr)	▨ Solar (>= 6.0 kWh/m2/day)
▨ Geothermal (>= 80 milliwatts/m2)	▨ Wind (>= 3 Power Class)

🖱️ Mouse over symbols for more details.

2009 Missouri Electricity Generation by Primary Energy Sources (GWh)

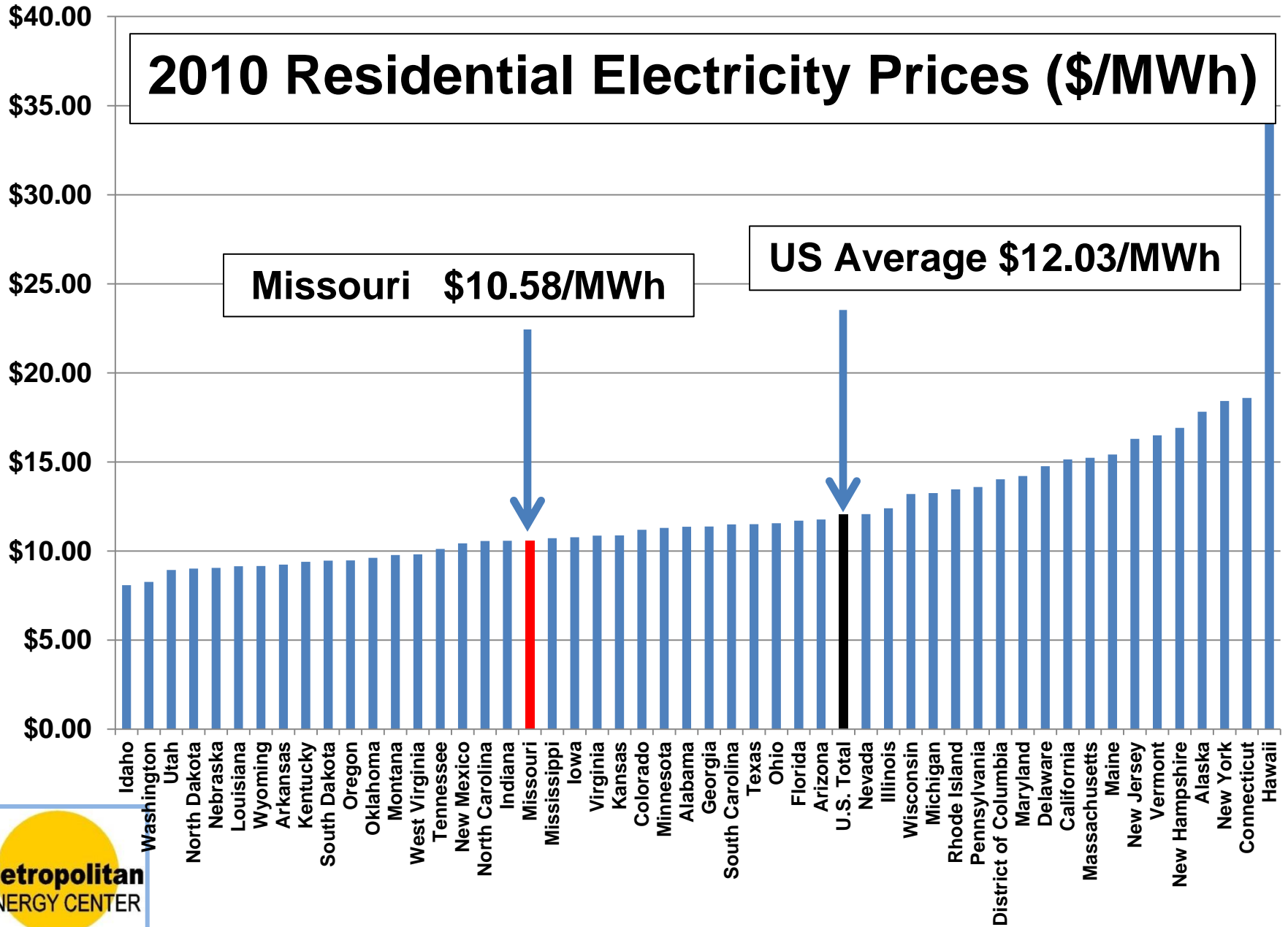


2009 Missouri Retail Electricity Sales

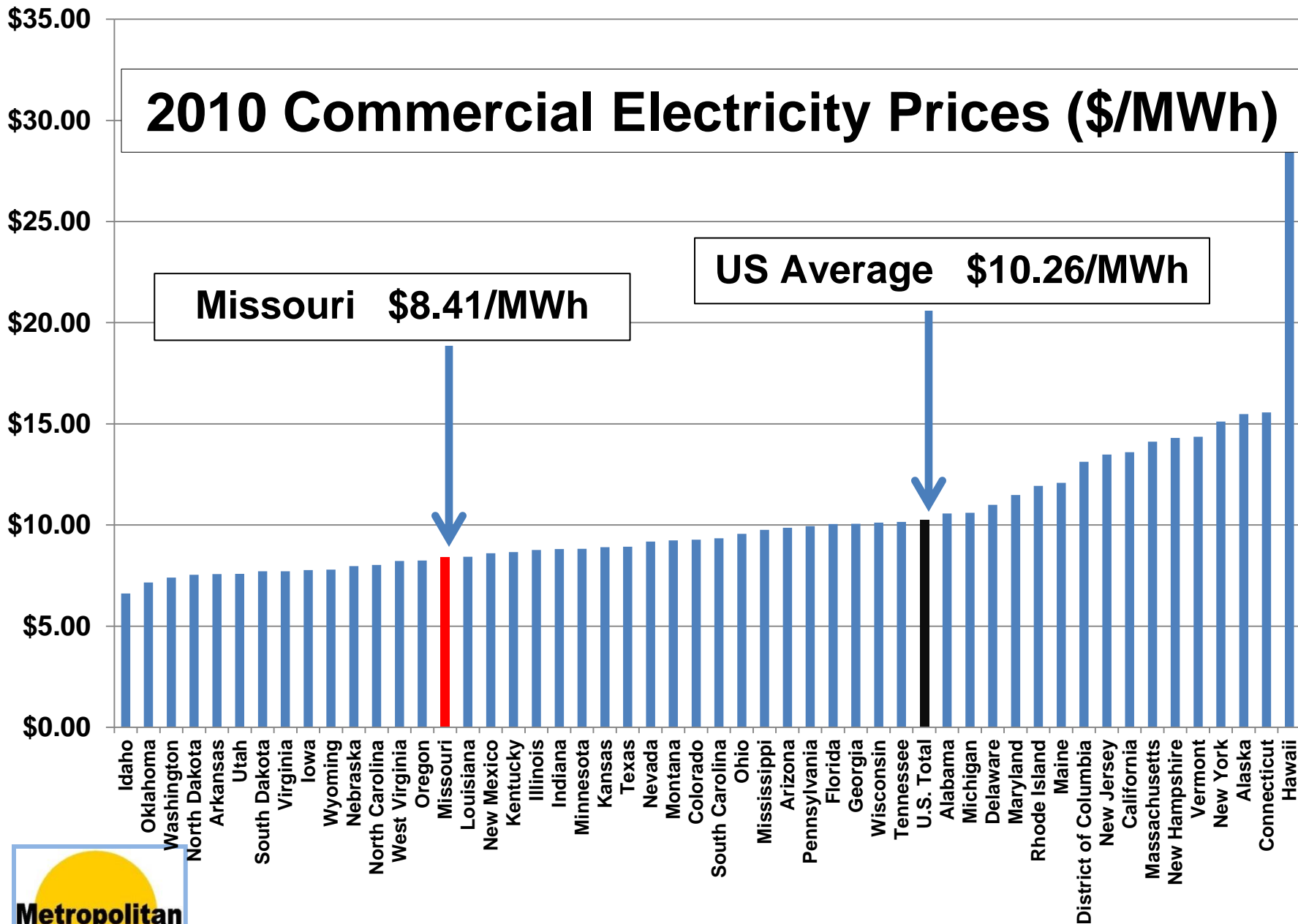
	Investor-Owned	Public	Cooperative	Non-Utility	Total
Number of Entities	4	87	42	1	134
Number of Retail Customers	1,919,444	422,547	723,222	2	3,065,215
Retail Sales (GWh)	55,462	10,581	13,624	19	79,687
Percentage of Retail Sales	69.60	13.28	17.10	0.02	100.00
Average Retail Price (cents/kWh)	6.83	8.00	8.97	5.41	7.35



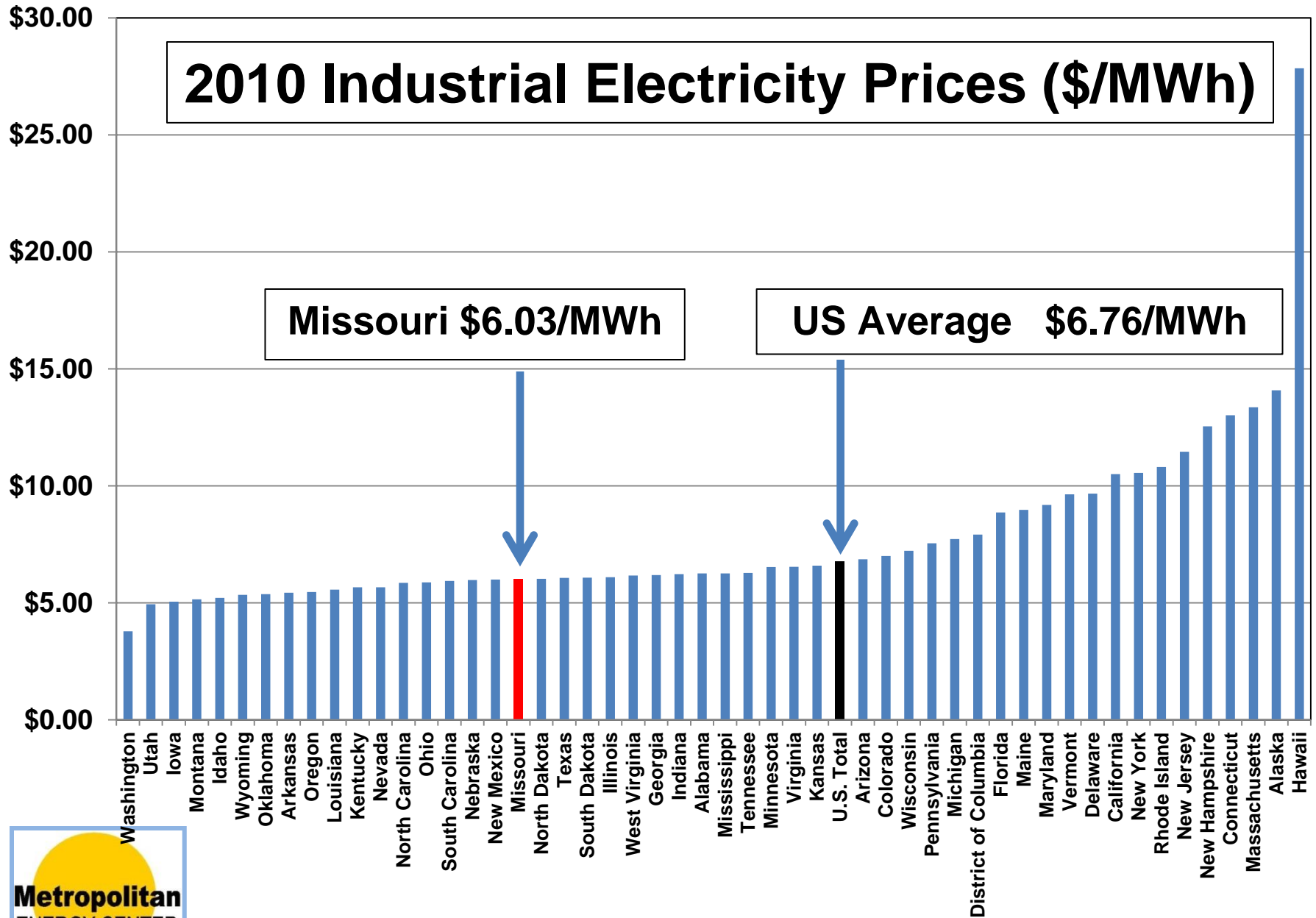
2010 Residential Electricity Prices (\$/MWh)



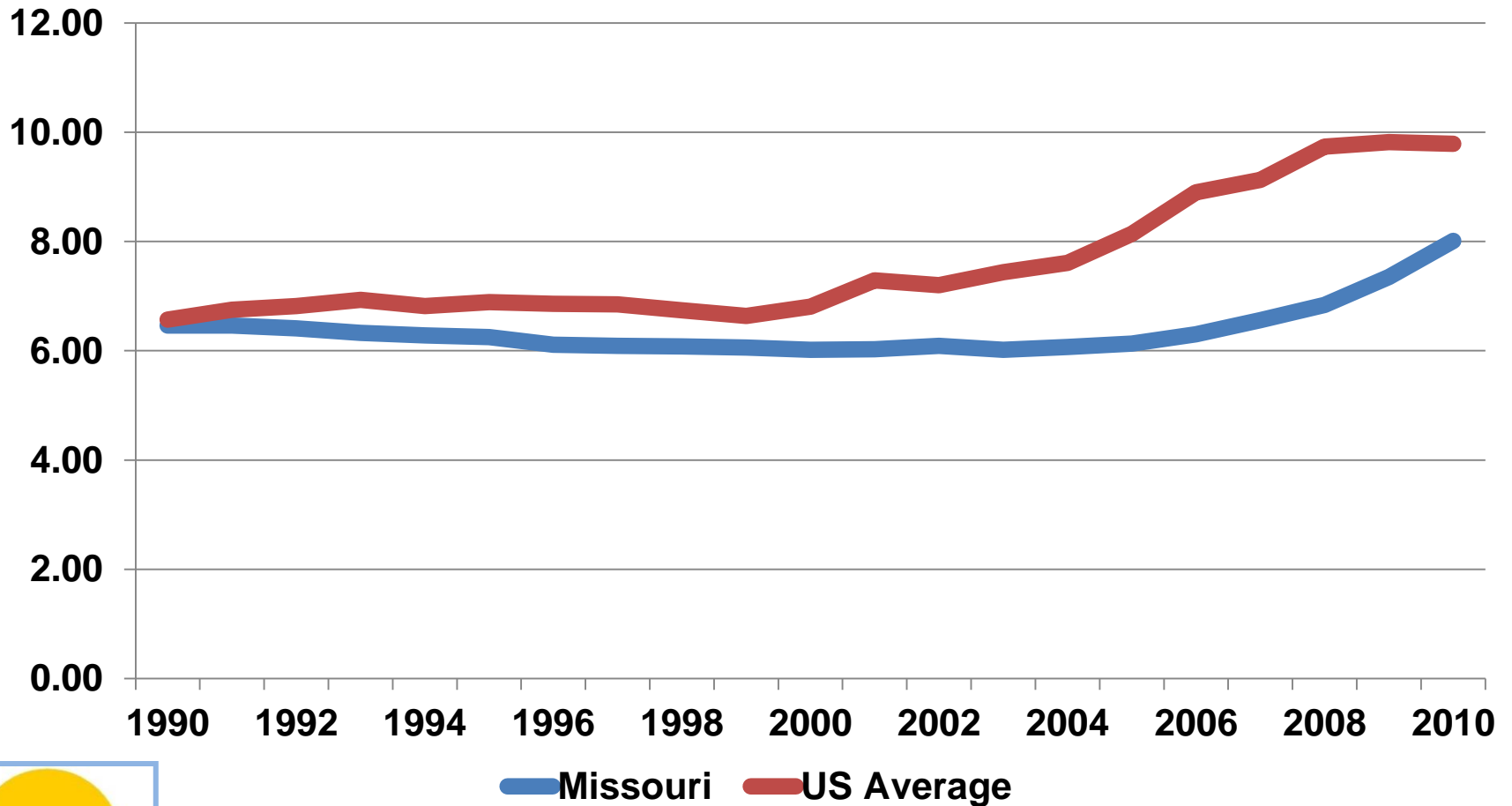
2010 Commercial Electricity Prices (\$/MWh)



2010 Industrial Electricity Prices (\$/MWh)



Missouri and US average electricity prices (Cents/kWh)



ACEEE 2011 Scorecard Rankings

- Neighboring States according to their rank:

- Colorado - 12
- Nebraska - 40
- Iowa - 11
- Illinois - 17
- Kentucky - 37
- Tennessee - 30
- Arkansas - 38
- Oklahoma - 47
- **MISSOURI - 44**
- **KANSAS - 48**



ACEEE 2011 Scorecard Rankings

	Points	Max. Points
Energy Efficiency Programs and Policies	1.5	20
Transportation	0	8
Building Energy Code	0	7
Combined Heat and Power	2	8
State Government Initiatives	2.5	7
Appliance Efficiency Standards	0	3
Total	6	50



State budgets for Energy Efficiency (leading states exceed 2%)

- Neighboring States according to their budget:

- Colorado – 1.4%
- Nebraska – 0.6%
- Iowa – 1.9%
- Illinois – 1.3%
- Kentucky – 0.4%
- Tennessee – 0.6%
- Arkansas – 0.4%
- Oklahoma – 0.6%
- **MISSOURI – 0.6%**
- **KANSAS – 0.2%**



Missouri Energy Efficiency Investment Act

Senate Bill 376 became law on August 28, 2009 as RSMo 393.1075:

3. It shall be the ***policy of the state to value demand-side investments equal to traditional investments in supply and delivery infrastructure and allow recovery of all reasonable and prudent costs of delivering cost-effective demand-side programs.*** In support of this policy, the commission shall:
 - (1) Provide timely cost recovery for utilities;
 - (2) Ensure that utility financial incentives are aligned with helping customers use energy more efficiently and in a manner that sustains or enhances utility customers' incentives to use energy more efficiently; and
 - (3) Provide timely earnings opportunities associated with cost-effective measurable and verifiable efficiency savings.
4. The commission shall permit electric corporations to implement commission-approved demand-side programs proposed pursuant to this section with ***a goal of achieving all cost-effective demand-side savings.***

MoPSC rules effective on May 30, 2011:

- 4 CSR 240-3.163
- 4 CSR 240-3.164
- 4 CSR 240-20.093
- 4 CSR 240-20.094



Missouri Renewable Energy Standard

On November 4, 2008 voters in Missouri enacted Proposition C (RSMo 393.1020), a mandatory renewable energy standard (electricity production from solar thermal, photovoltaics, methane from landfills, wind, biomass, hydroelectric, and fuel cells using renewable fuels). Minimum annual electricity sales from renewable electricity sources:

2% from 2011 to 2013 (0.04% solar)

5% from 2014 to 2017 (0.1% solar)

10% from 2018 to 2020 (0.2% solar)

15% for 2021 and thereafter (0.3% solar)

Additional key provisions:

Tradable renewable energy credits (RECs)

Cost cap of 1% of retail rates

MoPSC rules effective on September 30, 2010

4 CSR 240-3.156

4 CSR 240-20.100



Missouri Electric Utility Resource Planning

- 4 CSR 240-22 Electric Utility Resource Planning rules were first effective May 6, 1993
- Electric utilities received a waiver from 4 CSR 240-22 from 1999 to 2004 due to discussions concerning electric restructuring
- Revised 4 CSR 240-22 rules became effective June 30, 2011
 - 22.010 Policy Objectives
 - 22.020 Definitions
 - 22.030 Load Analysis and Load Forecasting
 - 22.040 Supply-Side Resource Analysis
 - 22.045 Transmission and Distribution Analysis
 - 22.050 Demand-Side Resource Analysis
 - 22.060 Integrated Resource Plan and Risk Analysis
 - 22.070 Resource Acquisition Strategy Selection
 - 22.080 Filing Schedule, Filing Requirements, and Stakeholder Process



IOU, Municipal, Coop Utility Programs

•IOU:

- Fuel specific HVAC and thermostat programs (a lighting and motors for electric commercial)
- Fuel neutral whole house programs, like Home Performance with Energy Star

•Municipal:

- Fuel specific HVAC and lighting programs
- Fuel neutral financing program in Independence, MO
- Fuel neutral financing program in Kansas City, MO
- Fuel neutral rebate program for energy efficiency based on an assessment in Kansas City, MO

•Coop:

- Fuel specific HVAC and lighting programs
- Fuel neutral assessment program
- Member education





About EWKC

- EnergyWorks KC (EWKC) is a program of the American Recovery and Reinvestment Act (ARRA) of 2009, an Energy Efficiency and Conservation Block Grant (EECBG)
- A subset of the Department of Energy's BetterBuildings program



www1.eere.energy.gov/buildings/betterbuildings/





About EWKC

- **EWKC is designed to:**
 - **REDUCE** – energy use and greenhouse gas emissions
 - **CREATE** – and retain “green job” workforce development opportunities
 - **TRANSFORM** – the energy efficiency improvements market in the Kansas City metropolitan area





Thank you!

Questions?

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Albert Tamm Lumber Company American Fire Sprinkler **Anthony Plumbing Heating and Cooling**
 Applied Ecological Services, Inc Black & Veatch BNIM Brookside Building Performance Central Fiber
 CFM Distributors **JE Dunn Construction** Construction and Abatement Services Cromwell Environmental
 Decent Energy, Inc. Urban Mining Homewares Demilic USA LLC E&K of Kansas City **Kohler** ECS Geothermal
 Elmwood Reclaimed Timber Environmental Works, Inc EPA Region 7 Green Light Ground Source Systems, Inc
 James van Ernan Architects Grundfos **Metropolitan Energy Center** Hendrickson Tree Care Company

efficient

comfortable

smart

renewable

historic



www.ProjectLivingProof.org

Henderson Engineers Key Lighting Roberts & Dybahl, Inc. Illumination Sales **The Hayes Company**
 The Jeske Company Trex **KCP&L Smart Grid** Habitat For Humanity Kansas City Restore Loma Vista Nursery
 MARC Solid Waste Management District PPG Industries **Missouri Gas Energy** WaterFurnace International
 Missouri Department of Conservation Missouri Department of Natural Resources Patti Banks Associates
Heartland Utilities for Energy Efficiency Röthers Design-Build Platte Clay Electric Cooperative
 Solar Solutions of Kansas City Lafarge University of Missouri-Kansas City **United Heating and Cooling**
 University of Kansas School of Architecture **Mark One Electric** SFE Enterprises York International UPG

**If you are in Kansas City, visit Metropolitan Energy Center staff at Project Living Proof
 –a historic, publically-accessible, energy-efficient, green demonstration home.**