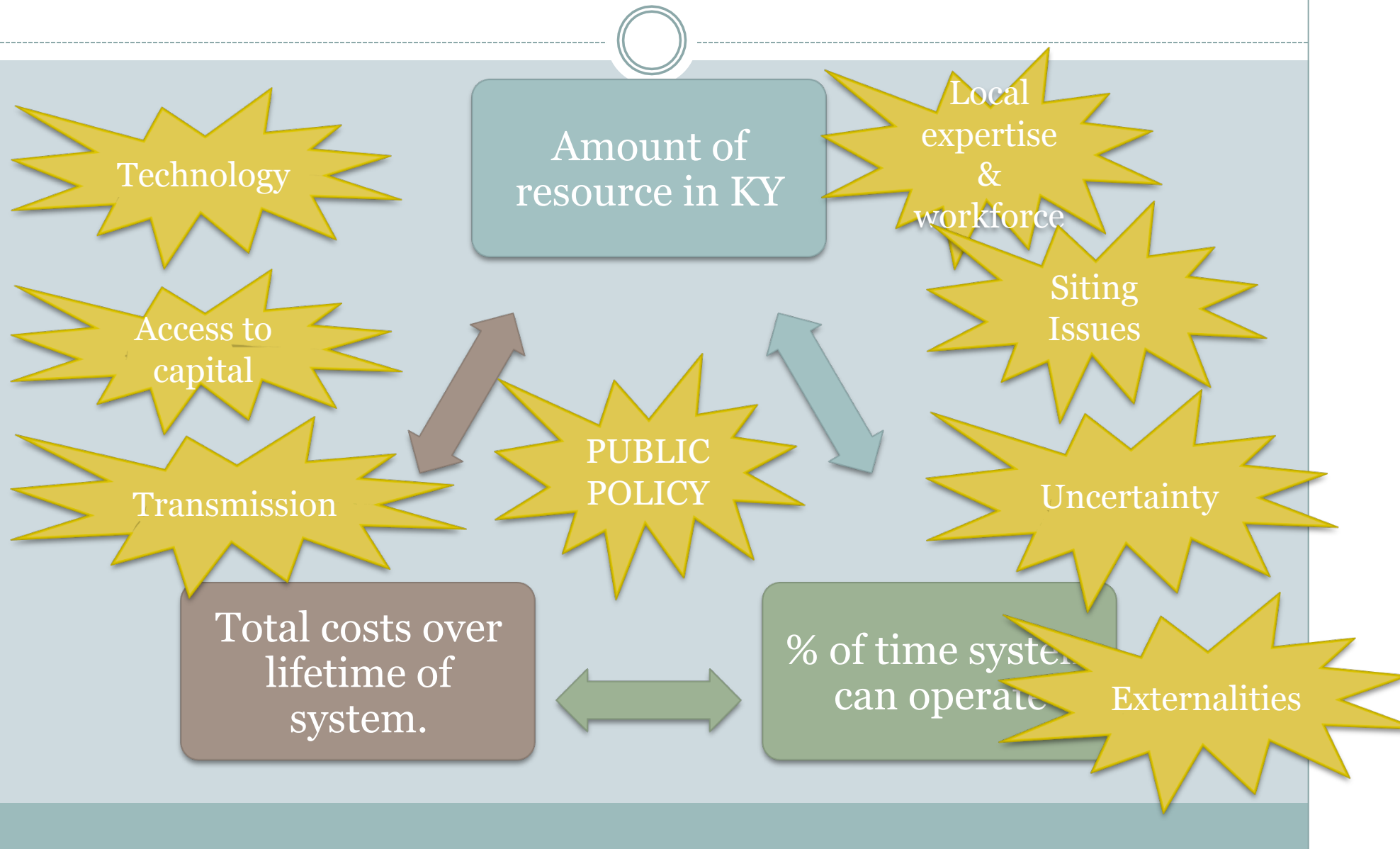


What is the potential for Energy Efficiency and Renewables in Kentucky?



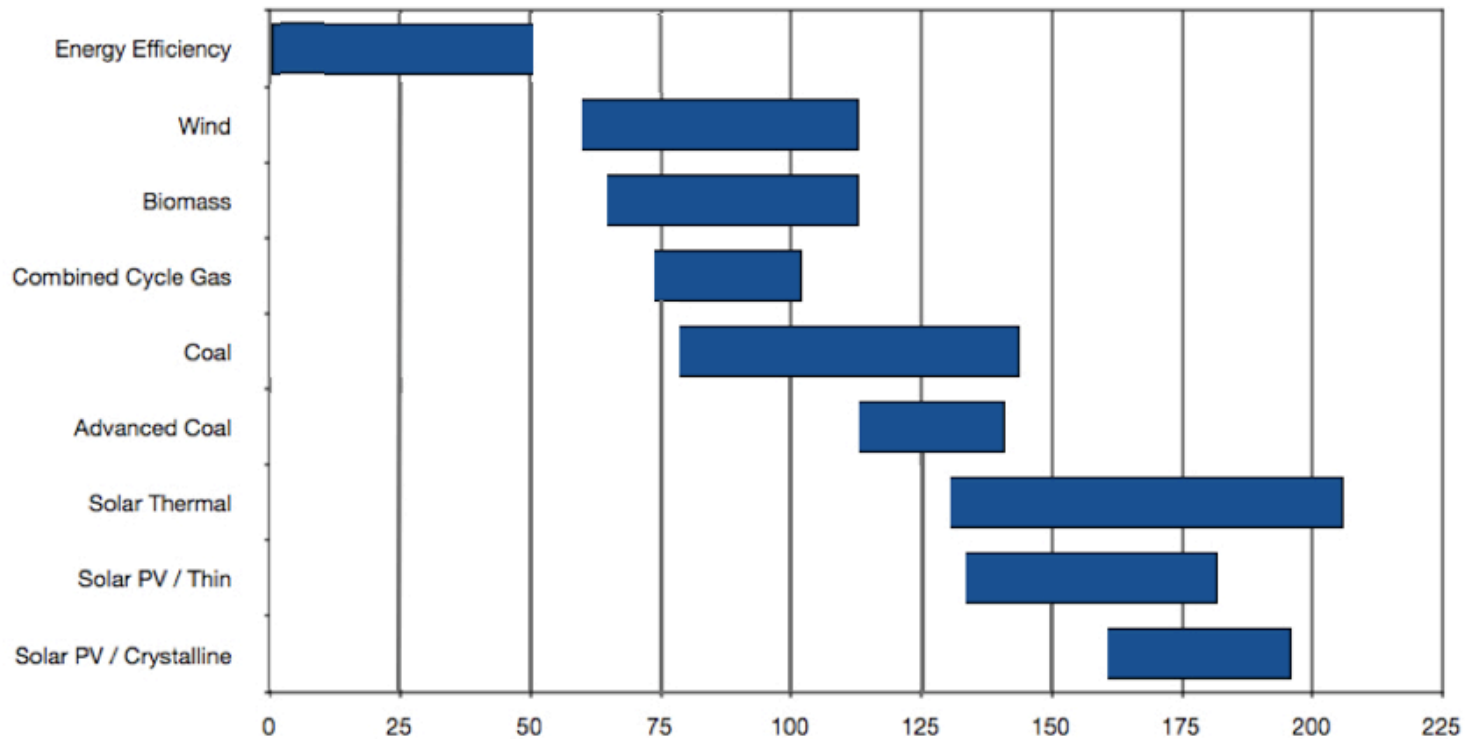
How do we evaluate what is feasible?



Are renewables cost competitive?



Levelized Cost Comparison, 2009



Source: Lazard Ltd.

Average cost of electricity generated (or saved) in US per MWh. Takes into account current national policy, all costs over 20 year lifespan, and 8% interest for capital costs. Doesn't include carbon, transmission or renewable energy credits.

There is broad consensus



Energy Efficiency is Kentucky's cheapest, most abundant source of new energy.

Kentucky has the opportunity to significantly expand in-state renewable generation, especially hydro, wind, biomass and solar in next 20 years.

Diversifying our energy mix will reduce financial risk for KY's ratepayers and utilities over next 20 years.

Energy Efficiency is first goal of Governor's Energy Plan



“ENERGY EFFICIENCY WILL OFFSET AT LEAST 16 PERCENT OF KENTUCKY’S PROJECTED 2025 ELECTRICITY DEMAND.” (OVER A PERIOD OF 16 YEARS)

(ASSUMES A BUSINESS AS USUAL BASELINE OF 2% ANNUAL GROWTH IN ELECTRICITY DEMAND - OR 40% BY 2025.)

Many say we can do more



“IMPROVED ENERGY EFFICIENCY COULD MEET ALL OF THE GROWTH IN (KENTUCKY’S) ENERGY DEMAND PREDICTED BY 2017.” - KENTUCKY POLLUTION PREVENTION CENTER

OVER 10 YEARS, CUMULATIVE ENERGY SAVINGS WOULD BE EQUIVALENT TO POWER FROM THREE 500-MEGAWATT POWER PLANTS.

The Clean Energy Bill gives utilities 10-years to achieve energy savings leading states are hitting now.



OVER NEXT TEN YEARS, UTILITIES WOULD RAMP UP EFFORTS TO HELP CUSTOMERS SAVE 10.25% OF CUMULATIVE DEMAND.

BY 2021, UTILITIES WOULD HELP CUSTOMERS ACHIEVE ANNUAL ENERGY SAVINGS WORTH 2% OF THE PREVIOUS YEAR'S DEMAND – A LEVEL LEADING STATES ARE ALREADY ACHIEVING.

THAT LEVEL IS ENOUGH TO OFFSET KENTUCKY'S GROWTH IN ELECTRICITY DEMAND – AND COULD REDUCE TOTAL DEMAND.

Expanding renewable energy is the 2nd goal of Governor's plan



“BY 2025, KENTUCKY'S RENEWABLE ENERGY GENERATION WILL TRIPLE TO PROVIDE THE EQUIVALENT OF 1,000 MEGAWATTS OF CLEAN ENERGY.”

(THE PORTION OF KY'S ELECTRICITY DEMAND COMING FROM RENEWABLES MIGHT ONLY INCREASE SLIGHTLY, SINCE OVERALL DEMAND IS ALSO EXPECTED TO INCREASE.)

Others say we can do more.

December 2010 Study of Renewable Energy Resources in US South:

Utility scale renewable resources in South are TWICE current estimates, based on new wind, hydro data.

Renewable generation capacity DOUBLES when consumer-owned renewable systems are included.

The South can generate 15-30% of its electricity from renewables over next 20 years with an RPS in place.



In 20 years, average electricity rates would be **LOWER** than current projections if the region adopted a 25% renewable portfolio standard.

The Clean Energy Bill grows renewable energy from 2% to 12.5% by 2021



Utilities would generate 12.5% of their electricity from renewable sources by 2021, including 1% from solar.

That's the same renewable energy goal as Ohio and NC.



There is broad consensus



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Kentucky has the opportunity to significantly expand in-state renewable generation, especially hydro, wind, biomass and solar in next 20 years.

Diversifying our energy mix will reduce financial risk for KY's ratepayers.

What do we know about KY's hydro-power potential?

Adding this would more than double Ky's current hydro generation!



887 MEGAWATTS POTENTIAL AT EXISTING DAMS

What do we know about KY's wind potential?

3 years ago, data showed that KY could develop 34-60 MW of utility scale wind.

New wind maps show 48,000 MW of utility scale wind (between 25% and 30% capacity factor at 100 meters).



What can we say about biomass potential in KY?



KY has significant biomass and biofuels resources.

There are ecological concerns.

What do we know about solar hot water potential in KY?



A solar hot water system can provide 50-80% of a household's annual water heating needs.

A system can pay for itself in 7-9 years at today's energy prices in Kentucky.

What can we say about solar PV potential in KY?

Combined with an energy efficient home, rooftop solar panels can provide most or all of the annual electricity needs for a home in KY.

The upfront costs are significant.

Kentucky's solar resources are better than Germany's, which has the greatest amount of installed solar capacity in the world. The difference is public policy – especially a feed-in tariff.

