

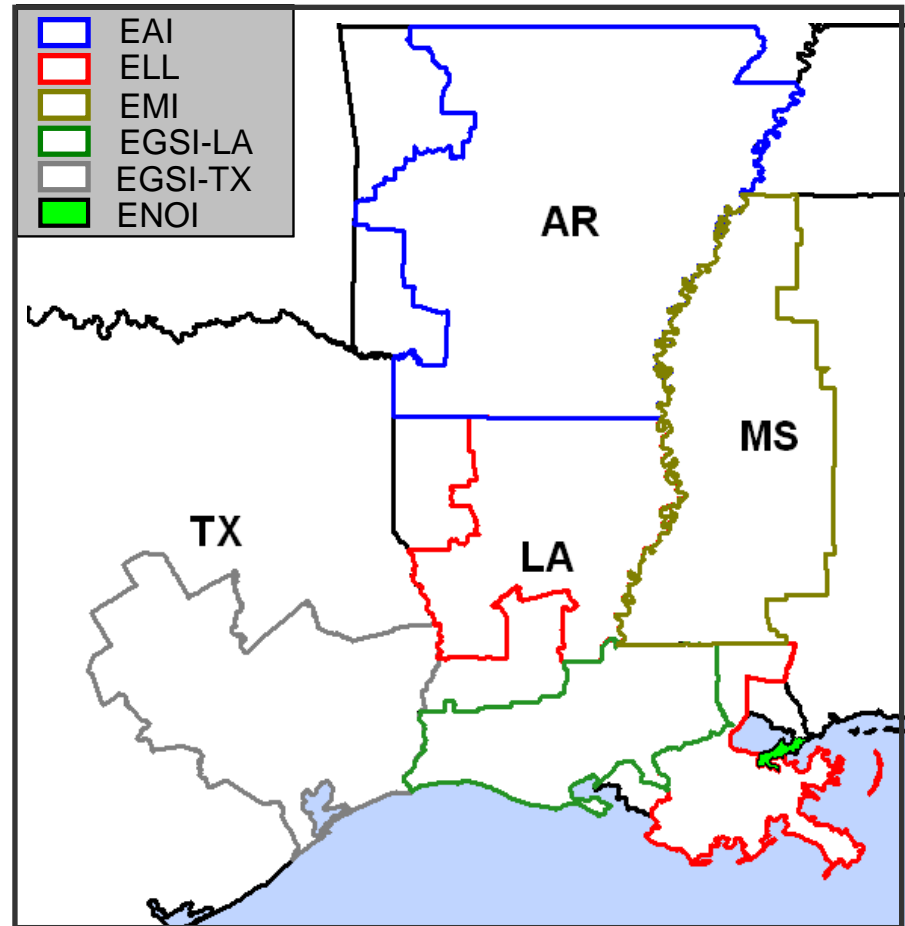
# Overview of IRP Planning Process

## New Orleans IRP Public Meeting

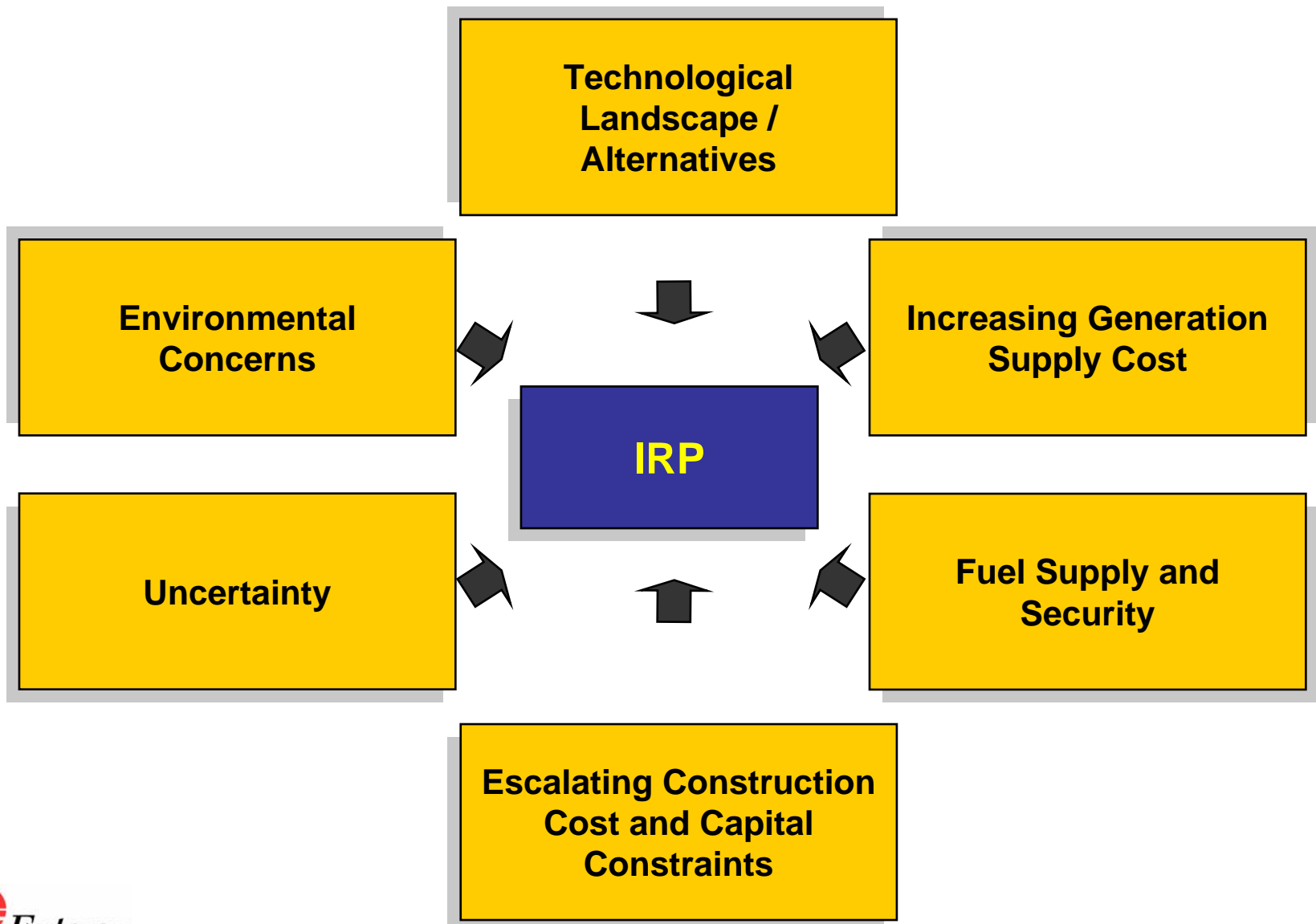
**November 2008**

# Entergy System

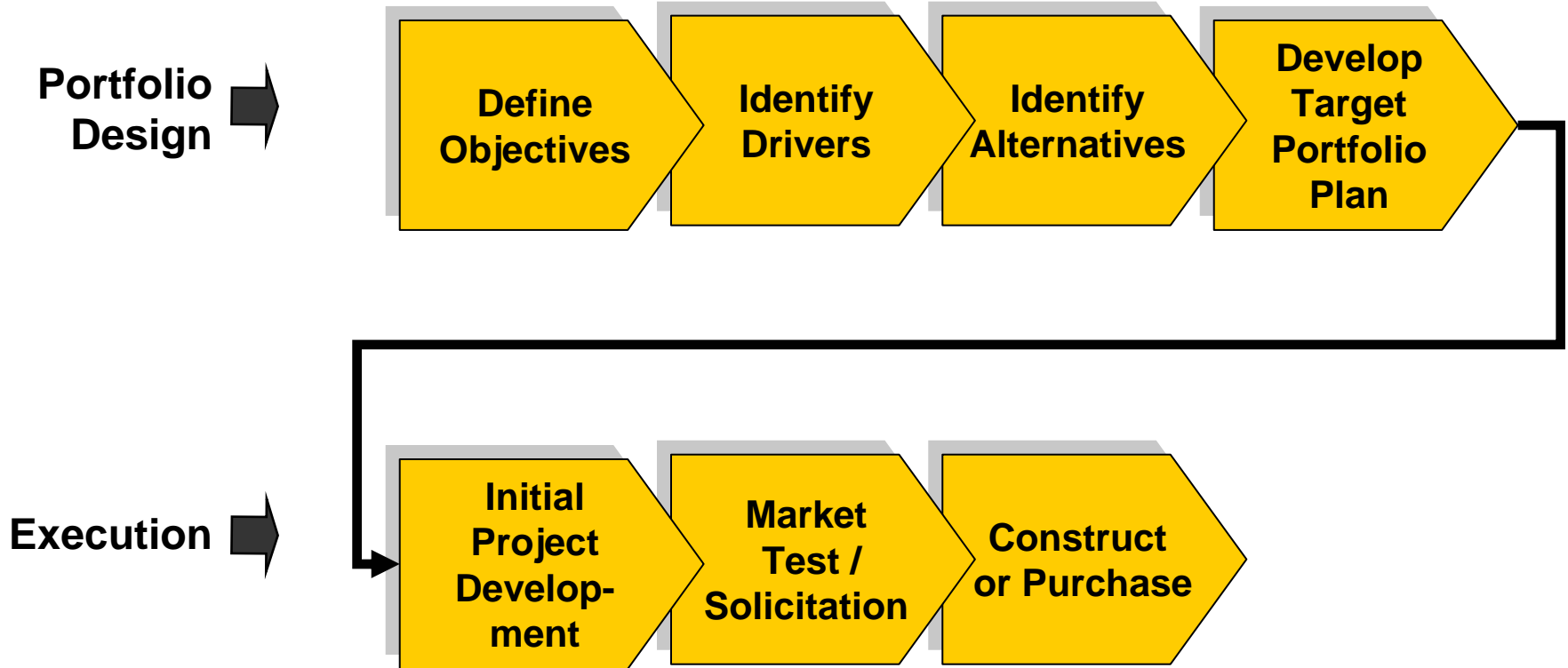
The Entergy Operating Companies are planned and operated as a single, integrated electric system, pursuant to the Entergy System Agreement. The six Entergy Operating Companies are Entergy Arkansas, Inc. (“EAI”), Entergy Gulf States Louisiana, L.L.C. (“EGSL”), Entergy Louisiana, LLC (“ELL”), Entergy Mississippi, Inc. (“EMI”), Entergy New Orleans, Inc. (“ENO”), and Entergy Texas, Inc (“ETI”). The electric generation and bulk transmission facilities of these Operating Companies are planned and operated on an integrated, coordinated basis as a single electric system pursuant to the terms and conditions of the Entergy System Agreement and are referred to collectively as the “Entergy System” or the “System”.



# Changing Landscape for Integrated Resource Planning

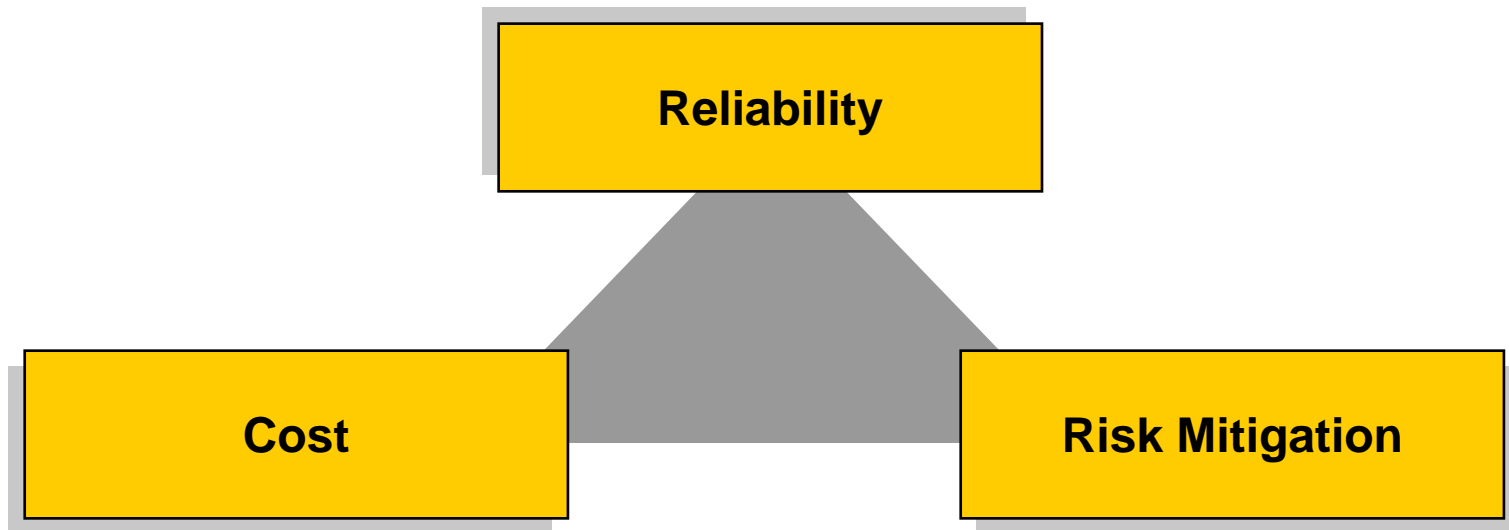


# Overview of Planning Process



# Entergy System Planning Objectives

In designing a portfolio of resources to meet customer needs, the Entergy System seeks to balance a set of supply objectives including reliability, cost, and risk mitigation. The overall objective is to meet customer needs reliably at the lowest reasonable cost. However, determining what is reasonable necessitates consideration of risk.



# Supply Issues

The Entergy System faces a number of issues with respect to generation supply.

## CAPACITY SHORTAGE

Long-term resource portfolio is short of reliability requirement and load is growing.

## AGING FLEET

More than 85% of the existing oil and gas-fired MW are greater than 30 years old.

## PORTFOLIO MIX

Needs include stable-priced resources for base load and modern CCGT and CT resources for load-following and flexible capability.

## EXPOSURE TO GAS PRICES

Existing generation fleet is highly correlated to natural gas.

## FLEXIBLE CAPABILITY

The System must, at all times, have a sufficient amount of flexible capability committed and operating to ensure reliable service.

# Flexible Capacity Requirement

## Key Drivers of Flexible Capacity Need

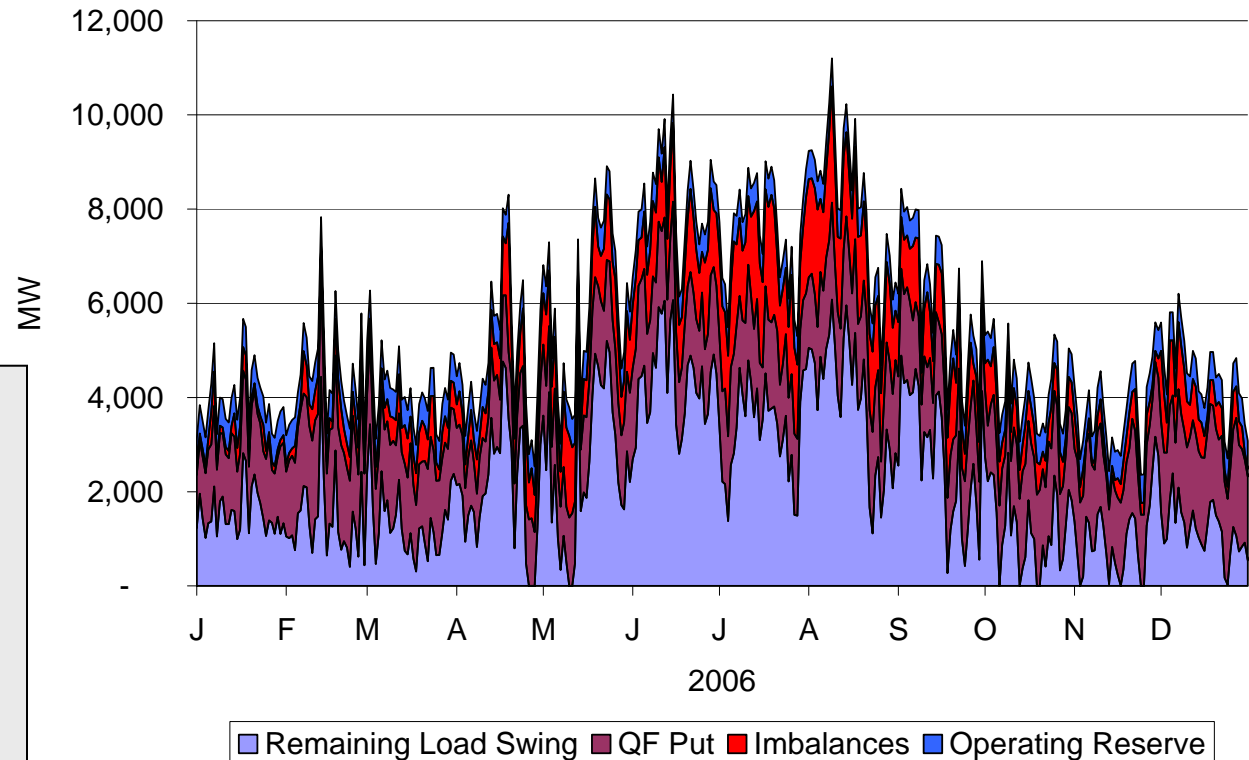
1. Load Swing
2. QF Put
3. Generator Imbalances
4. Operating Reserves

### Note

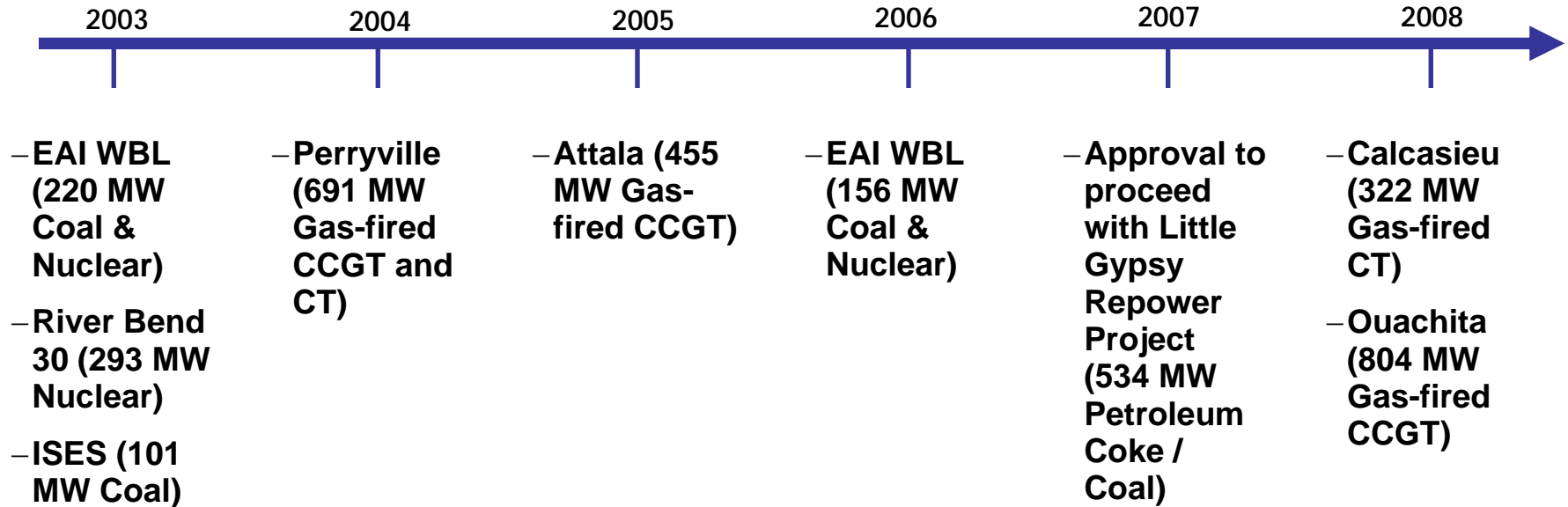
• Remaining Load Swing represents load levels after consideration of block energy purchases that were used to meet System load swing requirements.

## Flexible Capacity Requirement

ETR's Adjusted Flexibility Capability Requirement



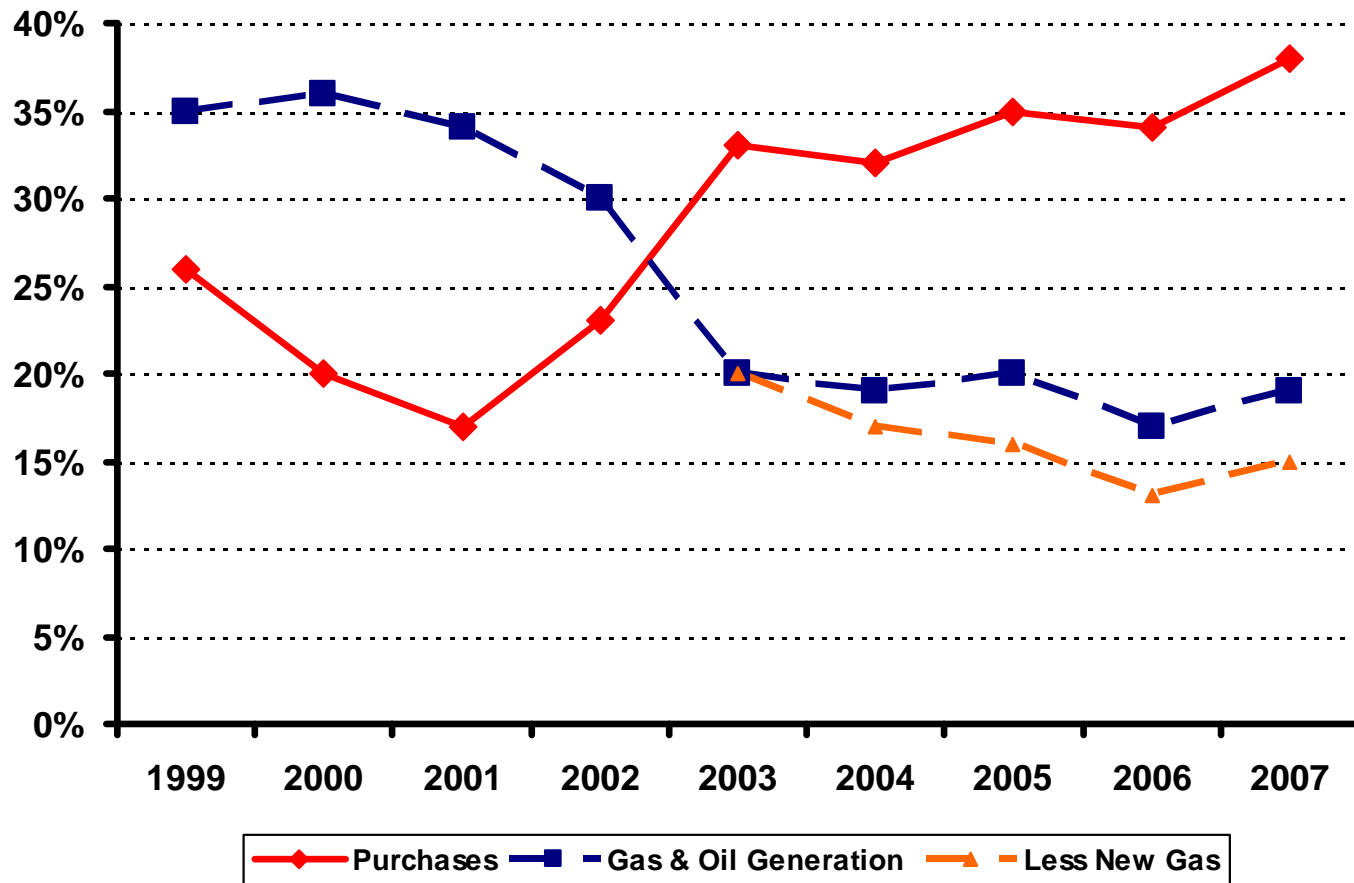
# Long-Term Resource Additions



**Total long-term capacity additions since 2003 exceed 3GWs.**

# Use Of Purchased Power

## Percent of Total Energy



# Reduced Reliance on Existing Gas Units

The older gas-fired plants owned and operated by the System operating companies are producing significantly less energy than they did in 1999.

EAI Gas & Oil	1999 MWh	2007 MWh	% Change
Blytheville	22,222	0	-100%
Cecil Lynch	143	32,966	22953%
Hamilton Moses	72,111	0	-100%
Harvey Couch	169,720	25,113	-85%
Lake Catherine	1,818,820	25,877	-99%
Mabelvale	7,811	5,852	-25%
Robert E Ritchie	293,027	0	-100%
	2,383,854	89,808	-96%

EGSI Gas & Oil	1999 MWh	2007 MWh	% Change
Lewis Creek	2,952,703	1,884,337	-36%
Roy S Nelson	2,454,438	1,077,058	-56%
Sabine	9,556,589	4,501,097	-53%
Willow Glen	4,296,373	207,084	-95%
	19,260,103	7,669,576	-60%

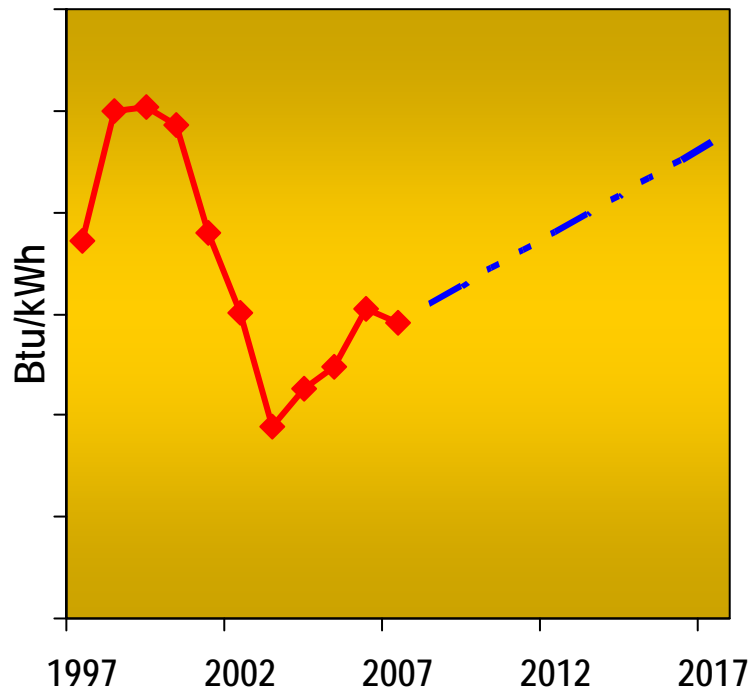
ELL Gas & Oil	1999 MWh	2007 MWh	% Change
Buras	2,506	635	-75%
Little Gypsy	2,989,080	1,294,874	-57%
Monroe (LA)	14,883	0	-100%
Nine Mile Point LA	7,252,460	4,443,032	-39%
Sterlington	1,046,468	47,692	-95%
Waterford (LA)	2,274,507	545,332	-76%
	13,579,904	6,331,565	-53%

EMI Gas & Oil	1999 MWh	2007 MWh	% Change
Baxter Wilson	4,481,301	1,699,990	-62%
Delta (MS)	290,617	0	-100%
Gerald Andrus	2,465,453	1,349,389	-45%
Rex Brown	497,102	158,998	-68%
	7,734,473	3,208,377	-59%

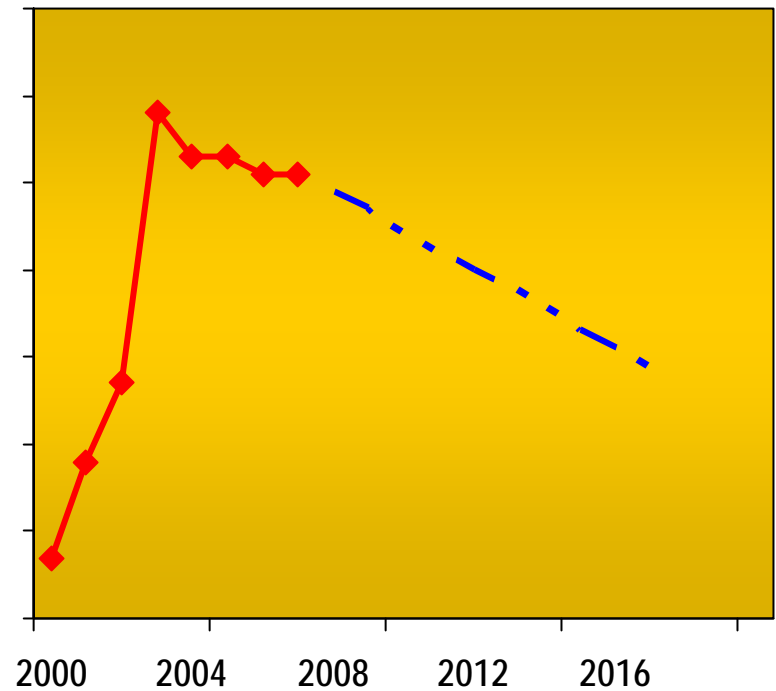
ENO Gas & Oil	1999 MWh	2007 MWh	% Change
A B Paterson	98,725	0	-100%
Michoud	3,422,196	1,854,800	-46%
	3,520,921	1,854,800	-47%

# Changing Wholesale Market Conditions

## Regional Implied Heat Rate (7X24)



## Available Wholesale Capacity



# Planning Process Considers Range of Alternatives

## Alternatives

Conventional  
Generation  
Alternatives

Demand-Side  
Management

Renewable  
Generation

## Portfolio Design

Reliability

Cost

Risk  
Mitigation

# Resource Alternatives

*ILLUSTRATIVE*

## Conventional Generation Alternatives

- Gas-fired CCGT and CT
- New nuclear
- Solid fuels (Coal)
  - Pulverized coal
  - IGCC
  - CFB
- Existing facilities
  - Repowering
  - Upgrades
  - Operational improvements and life extensions

## Demand-Side Management

- Energy efficiency measures
- Demand response

## Renewable Generation

- Wind
- Solar PV
- Biomass
- Biomass co-firing
- In-stream hydro

# Renewable Generation Alternatives

## Reference Planning Assumptions (October 2008)

		Biomass (Agri)	In-stream Hydro	Solar (PV)	Wind
Typical Unit Size	MW	50	25 – 50	50	100
Operating Role		Base Load	Base Load	Intermittent (Non-Dispatchable)	Intermittent (Non-Dispatchable)
Typical Capacity Factor	%/ Max Annual Output	75 – 85%	75- 85%	15-20%	18 – 43%
Installed Cost Reference	2008\$/kW	\$3,000	3,300	\$5,000	\$2,100
Fixed O&M	2008\$/kW-YR	\$53	\$68	\$26	\$45
Variable O&M	2008\$/MWh	\$12	\$0	\$0	\$0
Life of Unit	Years	40	30	30	30

# Renewable Generation Planning Approach

- **Renewable generation is considered along with and on the same basis as conventional generation alternatives.**
- **Renewable generation alternatives are assessed as a component of the supply portfolio.**
- **In designing a portfolio of resources to meet customer needs, the Entergy System seeks to balance a set of supply objectives including reliability, cost, and risk mitigation. The overall objective is to meet customer needs reliably at the lowest reasonable cost. However, determining what is reasonable necessitates consideration of risk.**
- **The Entergy Operating Companies will comply with renewable portfolio standards or any other form of renewable generation mandate imposed at the local, state, or national level, by seeking to deploy alternatives that comply with the mandate while meeting overall supply objectives.**
- **The Entergy Operating Companies cannot pursue renewable generation alternatives without appropriate cost recovery.**