



***NARUC Committee on Critical Infrastructure and
Staff Subcommittee on Critical Infrastructure
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An Overview of the Damage and Disruptions to the Energy Sector by Hurricanes Gustav and Ike

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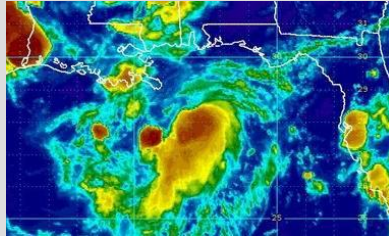
Office of Electricity Delivery and Energy Reliability



U.S. DEPARTMENT OF
ENERGY

Disastrous Hurricanes of 2008

Tropical Storm Edouard:
Edouard made landfall near the Texas/Louisiana border, causing some offshore production and ports to shut.



August 5, 2008

Tropical Storm Hanna:
Hanna made landfall at the North Carolina-South Carolina border at 3:20 AM EDT, resulting in electricity outages.



September 6, 2008

Hurricane Season 2008

July 23, 2008

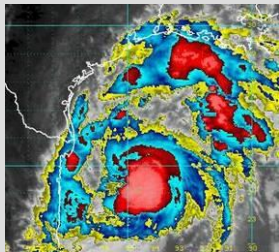
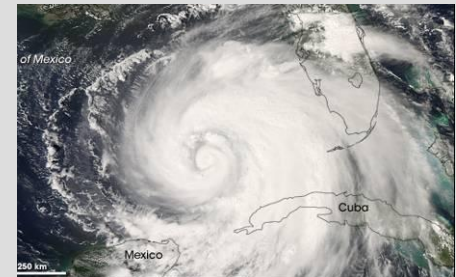


September 1, 2008

Hurricane Gustav:
Gustav made landfall as a Category 2 Hurricane near Morgan City, Louisiana, at approximately 1 PM EDT. The flooding through Louisiana and impacts to petroleum, natural gas, and electricity infrastructure in Louisiana and Mississippi have been significant.

September 13, 2008

Hurricane Ike:
Ike made landfall near Houston, Texas, at 3:00 AM EDT as a strong Category 2 hurricane, resulting in devastating shutdowns of oil & gas assets, electricity outages, and the evacuation of Houston.



Petroleum Outages from 2008 Hurricanes



Petroleum Production, Refining & Pipelines	Pre-Gustav Production 8/28/2008	Worst Day Outages		Outages 6 Weeks Later
		Gustav 9/2/2008	Ike 9/14/2008	10/28/2008
	Crude Oil Production			
Million Barrels per Day	1.3	1.3	1.3	0.4
% of Gulf Production	100%	100%	100%	28%
% of U.S. Production	26%	26%	26%	7%
Refining				
Gulf refineries (number)	33	14	15	0
Million Barrels per Day	7.5	2.7	3.9	0.0
% of Gulf Capacity	100%	35%	51%	0%
% of U.S. Capacity	43%	15%	22%	0%
Petroleum Pipelines				
Crude Pipelines Shutdown	None	LOOP; Capline; Marathon; Sunoco	Marathon; Sunoco; Genesis	None
Crude Pipelines Reduced	None		LOOP; Capline	None
Product Pipelines Shutdown	None	Centennial	Centennial; NuStar; Explorer; Longhorn; Seaway; Enterprise Colonial; Plantation;	None
Product Pipelines Reduced	None	Colonial; Plantation	Magellan; TEPPCO; Dixie	None

Sources: EIA, MMS, and DOE Hurricane Situation Reports

Photo: Entergy.

Natural Gas Outages from 2008 Hurricanes

Natural Gas Production, Processing & Pipelines	Pre-Gustav Production 8/28/2008	Worst Day Outages		Outages 6 Weeks Later 10/28/2008
		Gustav 9/2/2008	Ike 9/14/2008	
Natural Gas Production				
Billion Cubic Feet per Day	7.4	7.1	7.3	2.5
% of Gulf Production	100%	95%	98%	33%
% of U.S. Production	14%	13%	14%	5%
Processing				
Gulf processors (number)	97	25	30	5
Billion Cubic Feet per Day	25.7	16.1	14.5	3.2
% of Gulf Capacity	100%	63%	57%	12%
% of U.S. Capacity	33%	21%	19%	4%
Interstate Longhaul Pipelines				
Pipelines Shutdown	None	None	None	None
Pipelines Reduced	None	ANR; Columbia Gulf; Gulf South; NGPL America; Northern NG; Southern NG; Tennessee Gas; Texas Eastern; Texas Gas; Transcontinental; Trunkline	ANR; Columbia Gulf; Gulf South; NGPL America; Northern NG; Southern NG; Tennessee Gas; Texas Eastern; Texas Gas; Transcontinental; Trunkline	None



Source: MMS and DOE Hurricane Situation Reports.

Photo: Roanoke Slant.

Electricity Outages from 2008 Hurricanes



State	Million Customers	Worst Day Outages		Outages 6 Weeks Later 10/28/08
		Gustav 9/2/08	Ike 9/14/08	
Arkansas	1.5	-	0.2	-
Louisiana	2.1	1.1	0.2	-
Mississippi	1.4	0.1	-	-
Texas	10.7	-	2.5	<0.1
Other States*	27.5	-	1.0	-
Total	43.3	1.1	3.9	<0.1

Note: * includes Illinois, Indiana, Kentucky, Michigan, Missouri, New York, Ohio, Pennsylvania, & West Virginia.

Source: State Emergency Operations Centers, company web sites, & Energy Assurance Daily.

Photos: Entergy.



DOE Response to 2008 Hurricanes

- **Deployed staff throughout Gulf and East Coast regions**
- **Worked with Environmental Protection Agency to issue and extend gasoline and diesel fuel waivers in many states**
- **Worked with Department of Transportation on pipeline issues**
- **Made loans of U.S. Strategic Petroleum Reserve crude**
- **Assisted with coordination of electricity supply to priority industries in damaged areas**
- **Secretary of Energy issued an order under Section 202 of the Federal Power Act to allow one electric utility to supply power to another**
- **Monitored developments and issued authoritative Situation Reports**
- **Assessed potential infrastructure impacts before landfall of each hurricane**
- **Monitored and coordinated fuel supply issues with States in Southeast region**
- **Conducted SE States Petroleum Disruption and After-Action Workshop**



Thank You

Questions ?

For public information visit:

<http://www.oe.energy.gov/organization.htm>

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