

Energy & the Environment: A way forward for coal - the Kemper project

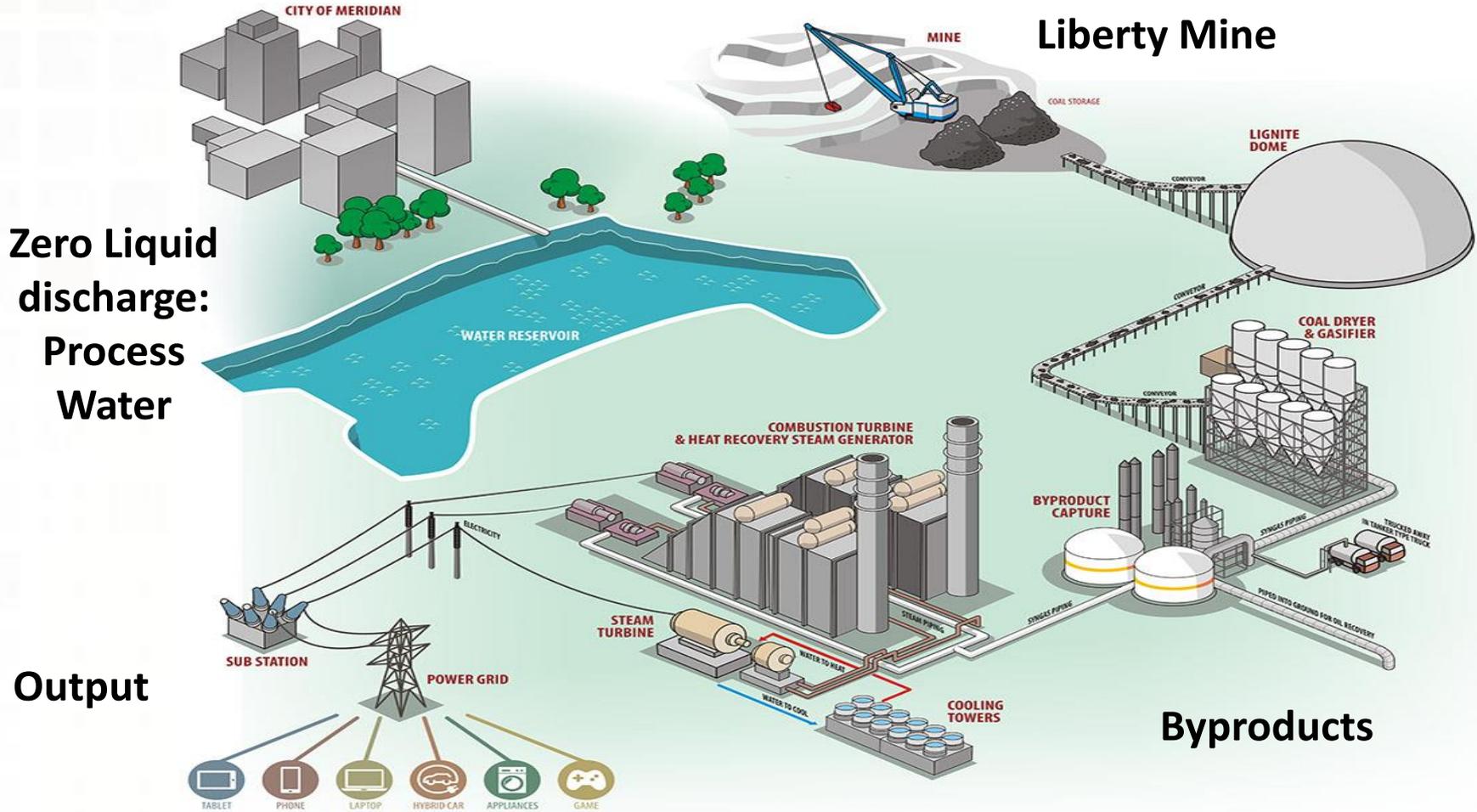
Ed Holland
Mississippi Power President and CEO
October 9, 2014



Kemper: 582-MW Integrated Gasification Combined Cycle facility with pre-combustion carbon capture

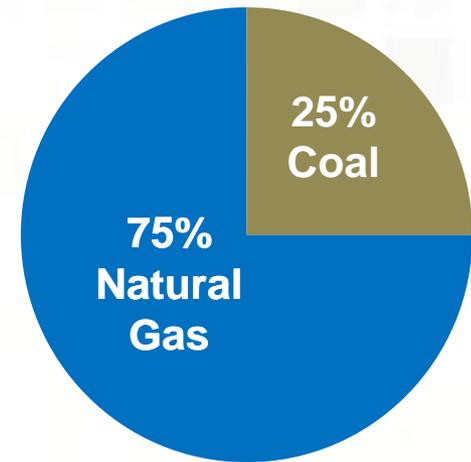


How it works: Fully Integrated Design

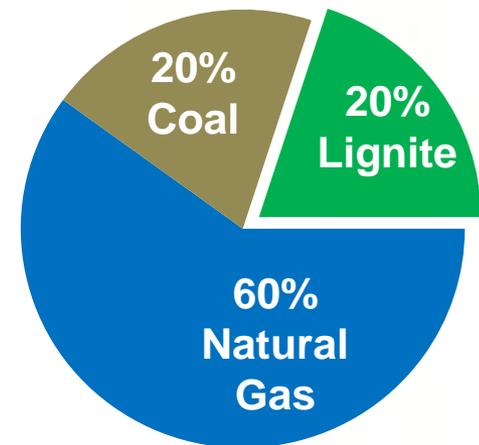


Kemper: Redefining Energy Sustainability

- Fuel diversity
- Fuel price stability
- Secure, reliable power
- Zero liquid discharge
- Captured carbon used in enhanced oil recovery
- Byproduct revenue



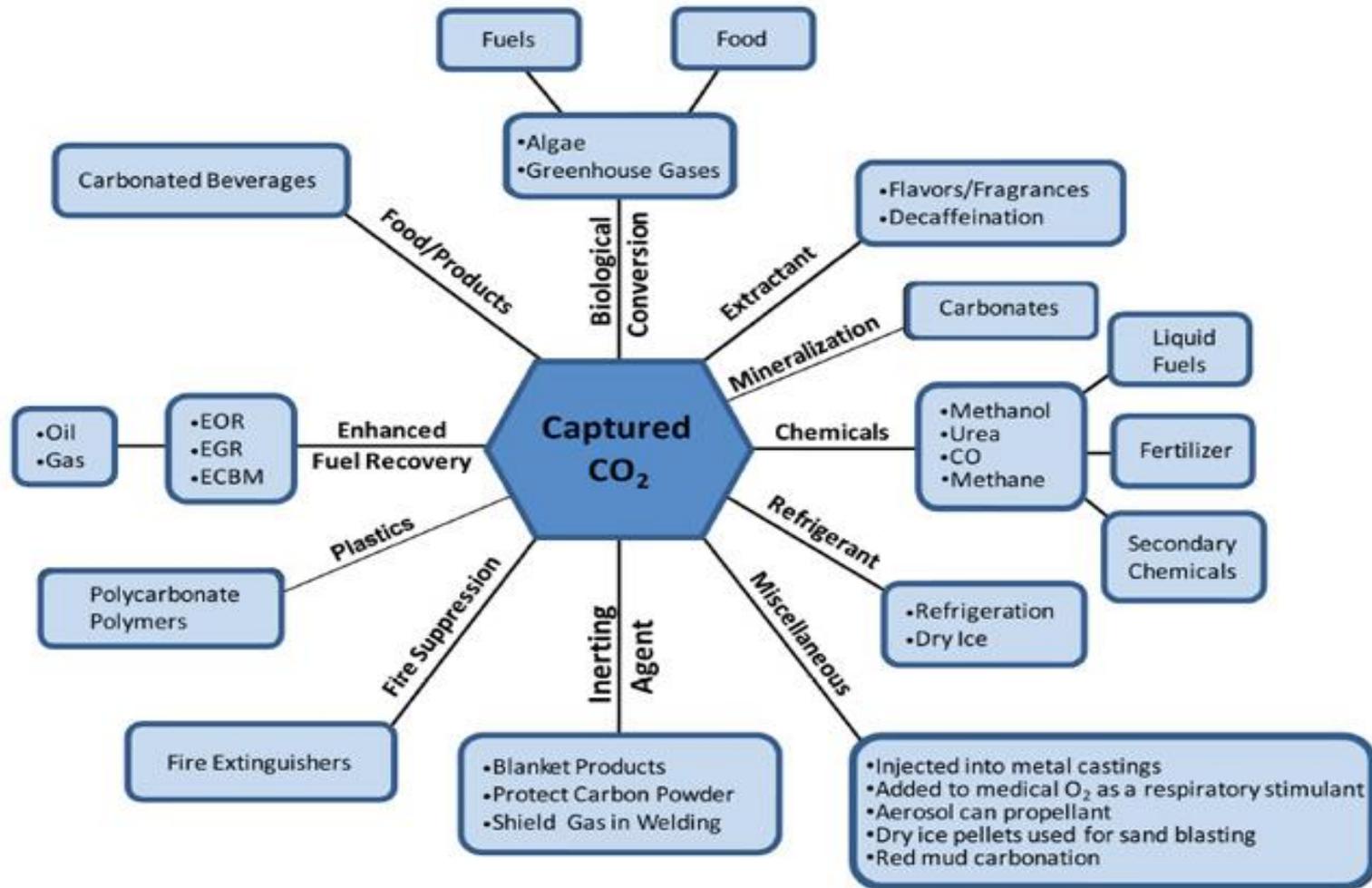
2020 energy mix **without** Kemper



2020 energy mix **with** Kemper *

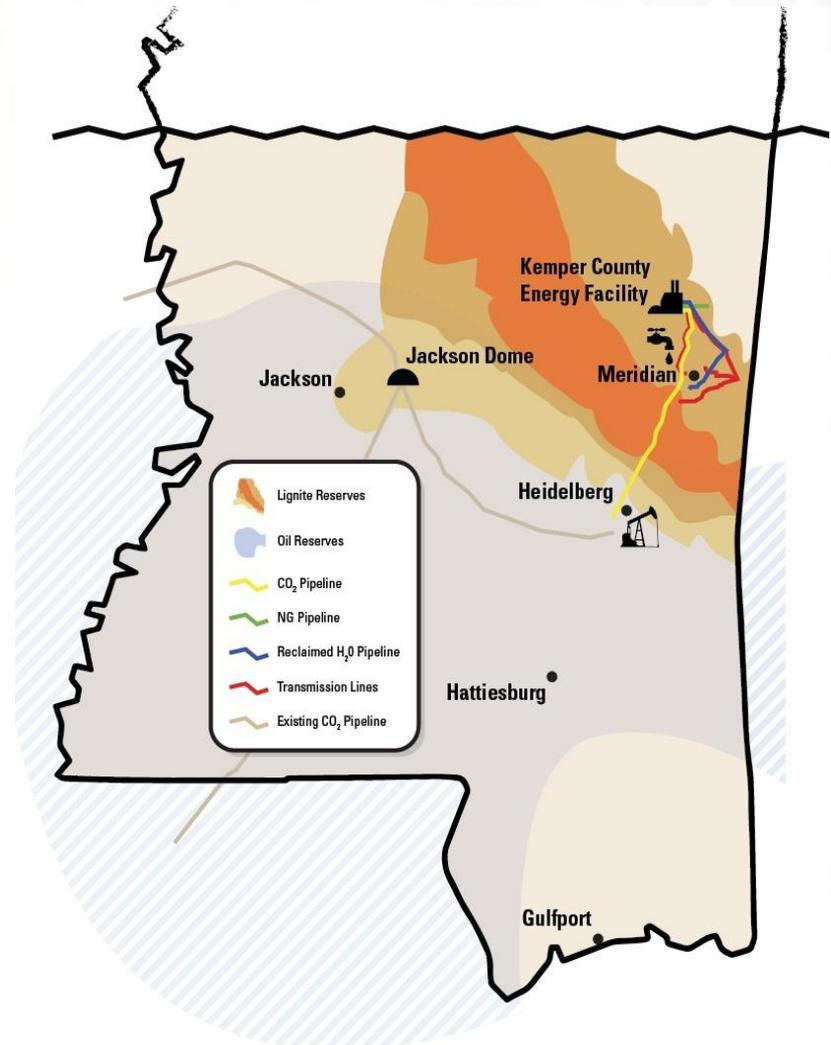
* Includes unit retirement and fuel switch announcements (7/4/14)

CO₂ Utilization – Commodity not Waste



Kemper: Why it works in Mississippi

- **Lignite mine mouth**
 - 31,000 acre mine site
- **Enhanced oil recovery**
 - 60 mile CO₂ Pipeline for EOR
- **Meridian treated effluent**
 - 30 miles of treated effluent pipeline
- **Transmission**
 - 70 new miles
- **Off Gulf Coast**
 - 80% Current Generation on Gulf Coast



Safety

- Industry leaders in maintaining a safe workplace – through every area of the company
- .54 Project Recordable Incident Rate
 - 3-5 times safer than Construction Industry Average
- 28 Million Man-hours
 - 14,000 FTE for a year



Economic Benefits

- **\$1 Billion in Mississippi contracts**
- **12,000 direct and indirect jobs**
- **500 Mississippi companies**
- **500 permanent employees**
- **\$75 Million state and local taxes during construction**
- **\$30 Million state and local taxes annually in operation**



Project Current Status

Construction

- Essentially complete except for heat tracing & insulation. Support for startup and operations now through COD

Startup

- Gasifier first-fire is expected in the 4th quarter.

Operations

- Plant staff at 173, planning for 220 by COD. Operation and Maintenance training in progress. Team participation in startup and commissioning

Combined Cycle

- CC in service Aug. 9, 2014

Mine

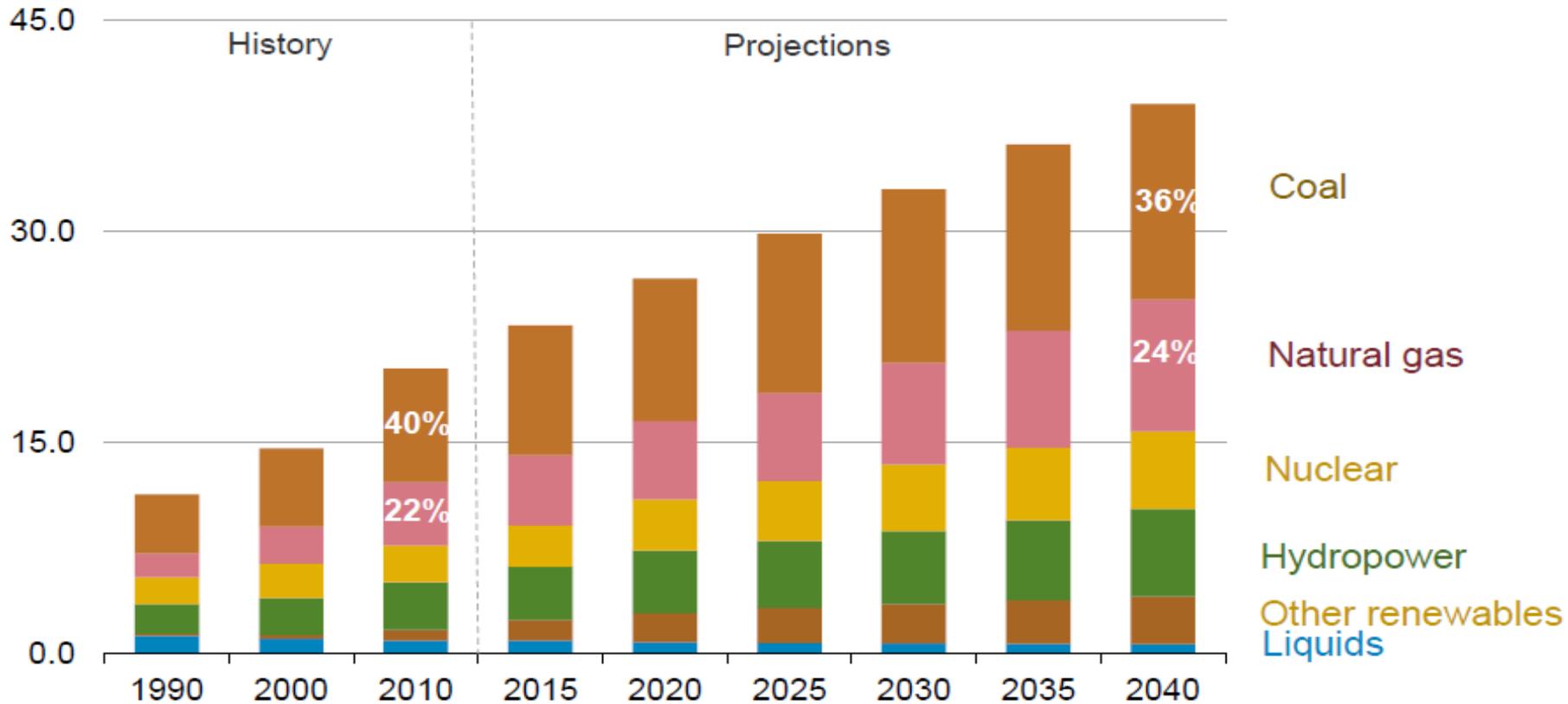
- Mine staffing at 120, estimated 220 at full operations. ~890,000 tons of lignite mined

International Considerations for Advanced Coal Technologies



In electricity generation, renewables and natural gas are the fastest growing sources, but coal still fuels the largest share in 2040

world electricity generation by fuel
billion kilowatthours



Source: EIA, International Energy Outlook 2013

World LNG Estimated September 2014 Landed Prices



Source: *Waterborne Energy, Inc.* Data in \$US/MMBtu

Note: Includes information and Data supplied by IHS Global Inc. and its affiliates ("IHS"); Copyright (publication year) all rights reserved.

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"We're going to need not 10, maybe 100 more of these plants across the country."

– U. S. Secretary of Energy Ernest Moniz, Nov. 8, 2013

