
Hyperion Energy Center

6th Annual Canadian Oil Sands Summit- January 2009

Presentation Outline

▶ Hyperion Meeting Objective:

- An overview of the Hyperion Energy Center

▶ America's Energy Supply

- Increasing Crude Oil Imports from Unstable and Unfriendly Nations
- Vulnerability of U.S. Refining Capacity
- Midwest Refined Product Imports

▶ Hyperion's Opportunity

- Increasing Canadian Supply
- Expanding Crude Oil Transportation
- Local Demand
- Existing Product Distribution

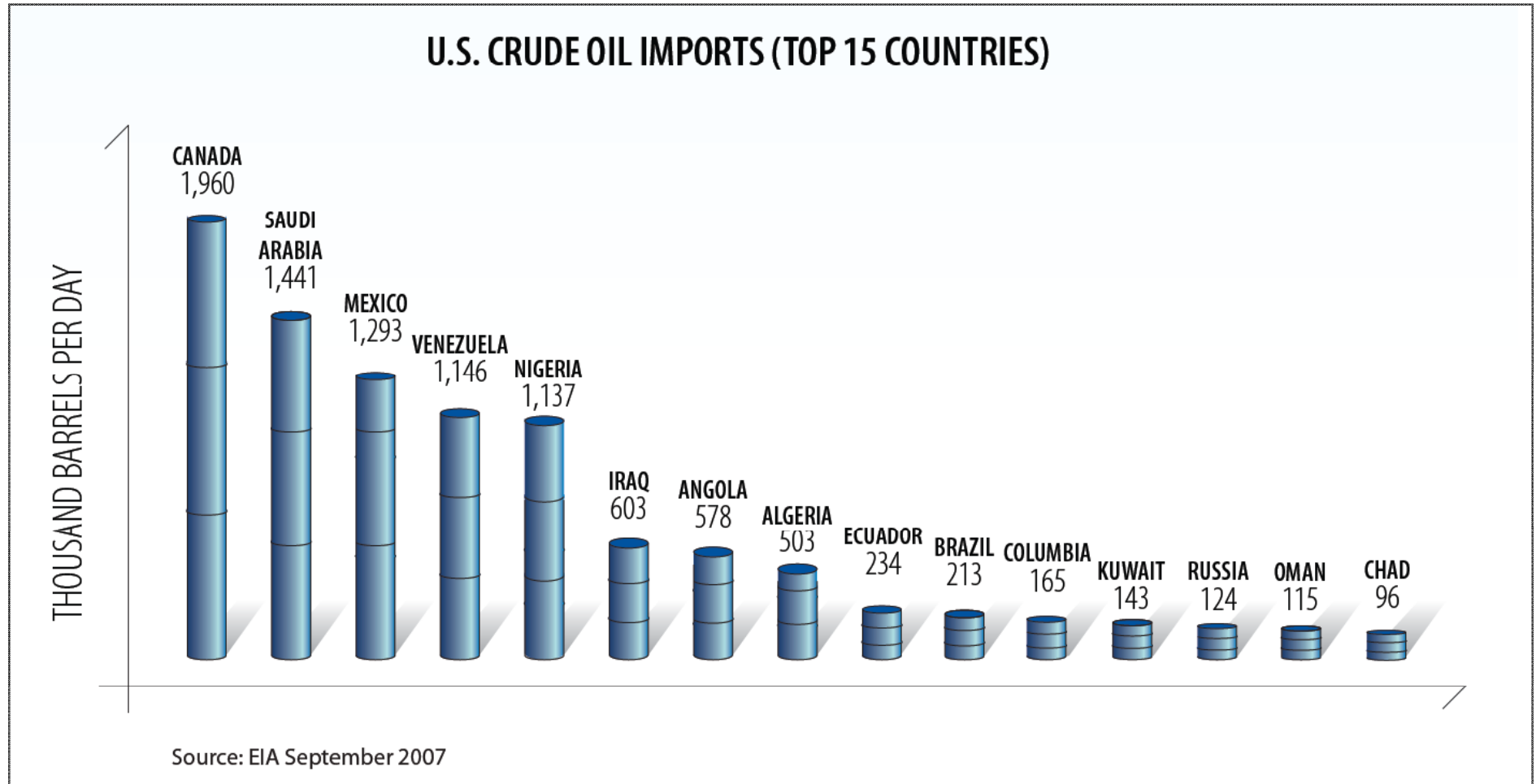
▶ About the Hyperion Energy Center

- Project Overview
- Process Diagram
- Rendering
- HEC Facts

▶ Contact information

AMERICA'S ENERGY SUPPLY

U.S. Crude Oil Imports by Country



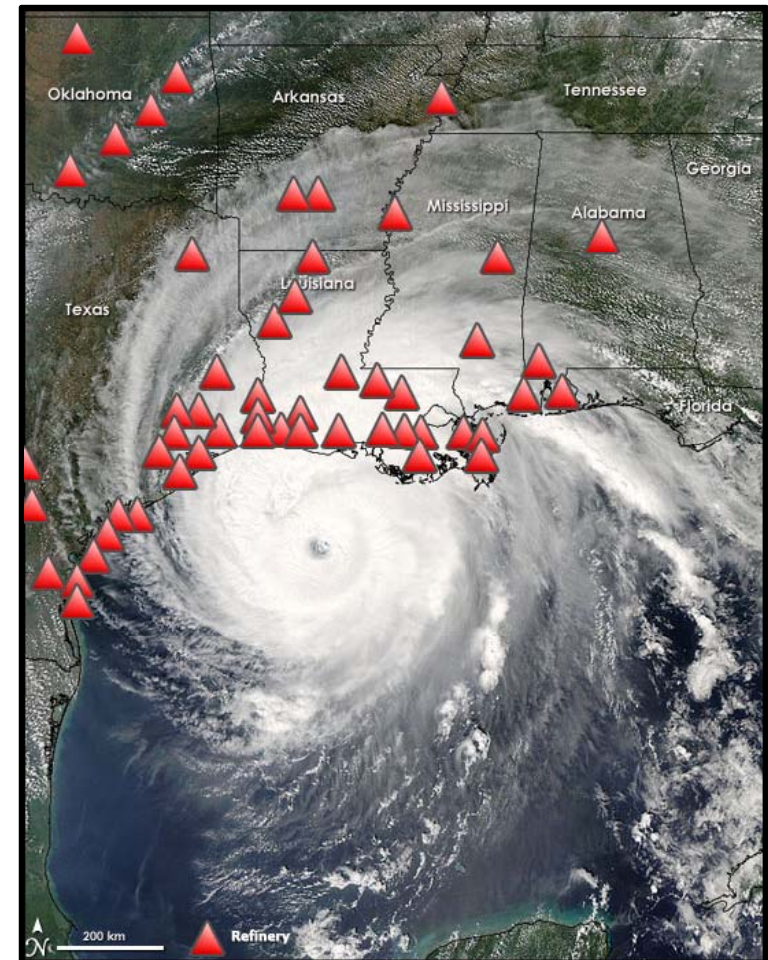
America's Vulnerable Refining Capacity

▶ America's Refining Capacity

- ½ is concentrated on the Gulf Coast
- Disruptions cause product shortages and price spikes throughout the Midwest, Southeast and East Coast

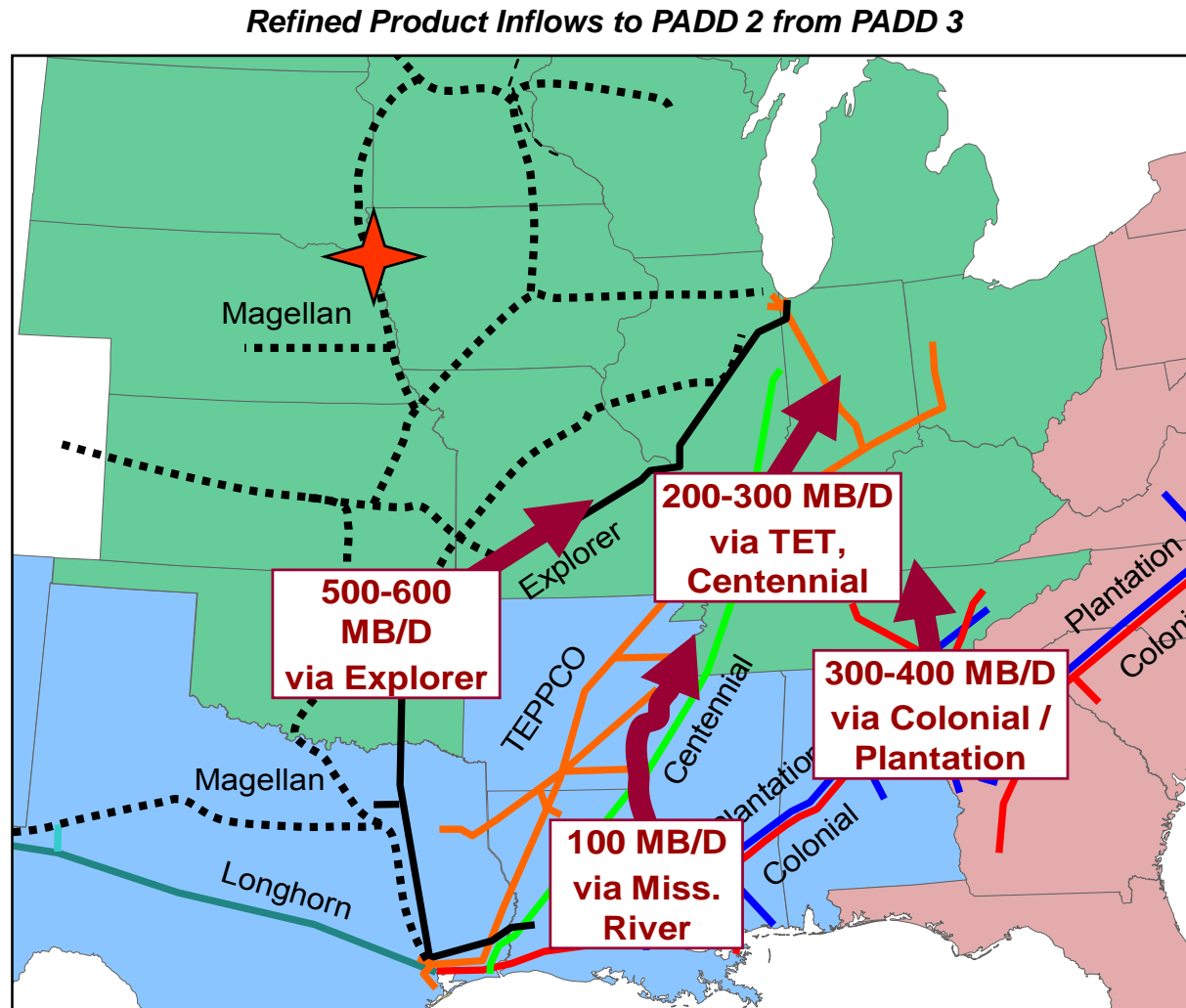
▶ Hurricanes Curtailing Refined Product

- 2005
 - **Katrina**: Shut down 30% of U.S. capacity
 - **Rita**: Shut down 25% of U.S. capacity
- 2008
 - **Gustav**: Shut down over 25% of U.S. capacity
 - **Ike** : Shut down over 25%: of U.S. capacity



PADD 2 Refined Product Deficit

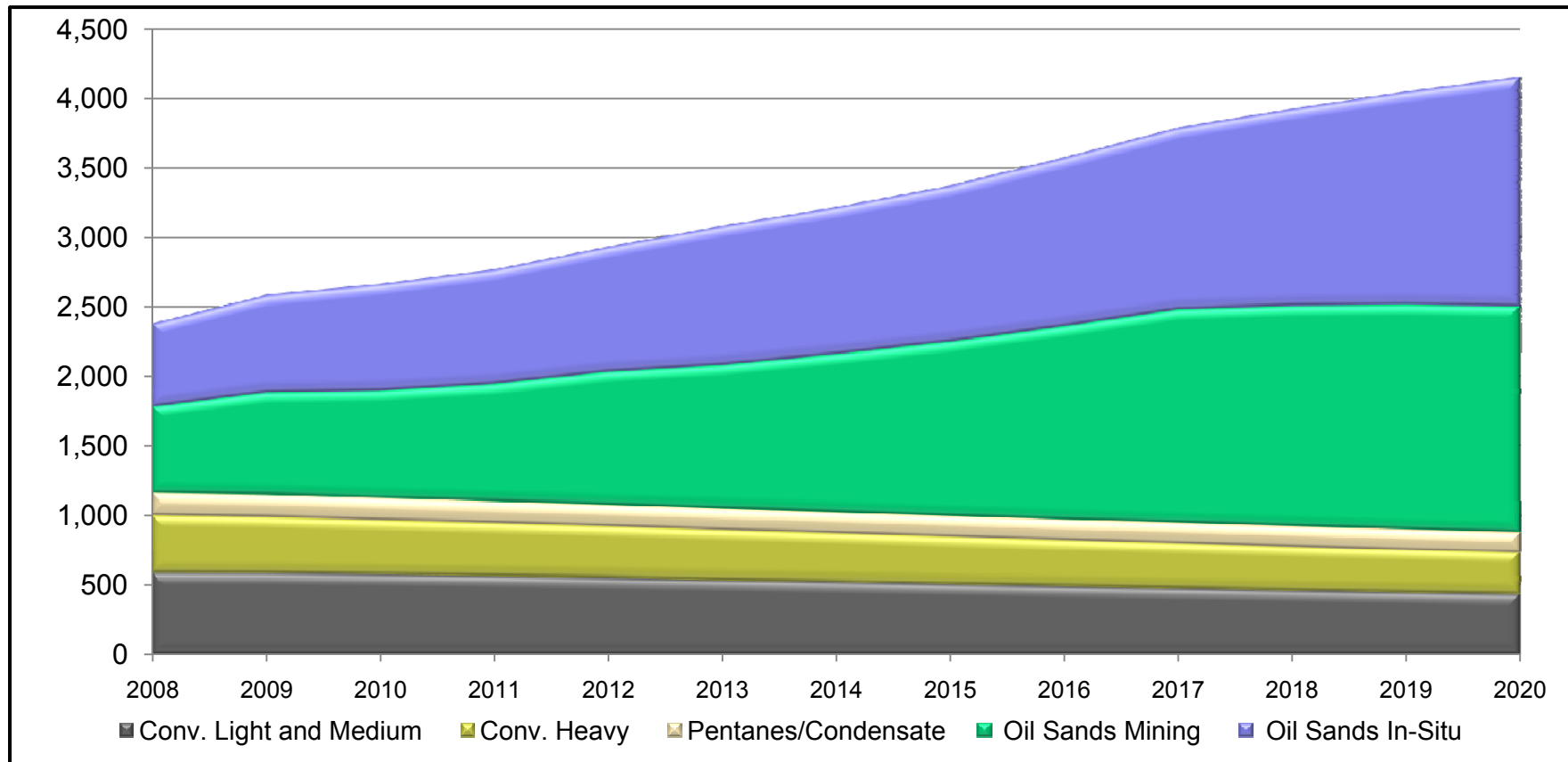
- ▶ In 2007, PADD 2 (Green) imported 922,000 BPD of product from the Gulf Coast (Blue) via pipelines and the Mississippi River.



MIDWEST OPPORTUNITY

Western Canadian Oil Sands

- ▶ Canada, with 173 billion barrels in oil sands reserves, ranks 2nd only to Saudi Arabia in global oil reserves
- ▶ Oil Sands Production forecast (source – CAPP Interim Update, December 2008):
 - 2008 – 1.2 MBPD
 - 2015 – 2.3 MBPD
 - 2020 – 3.2 MBPD



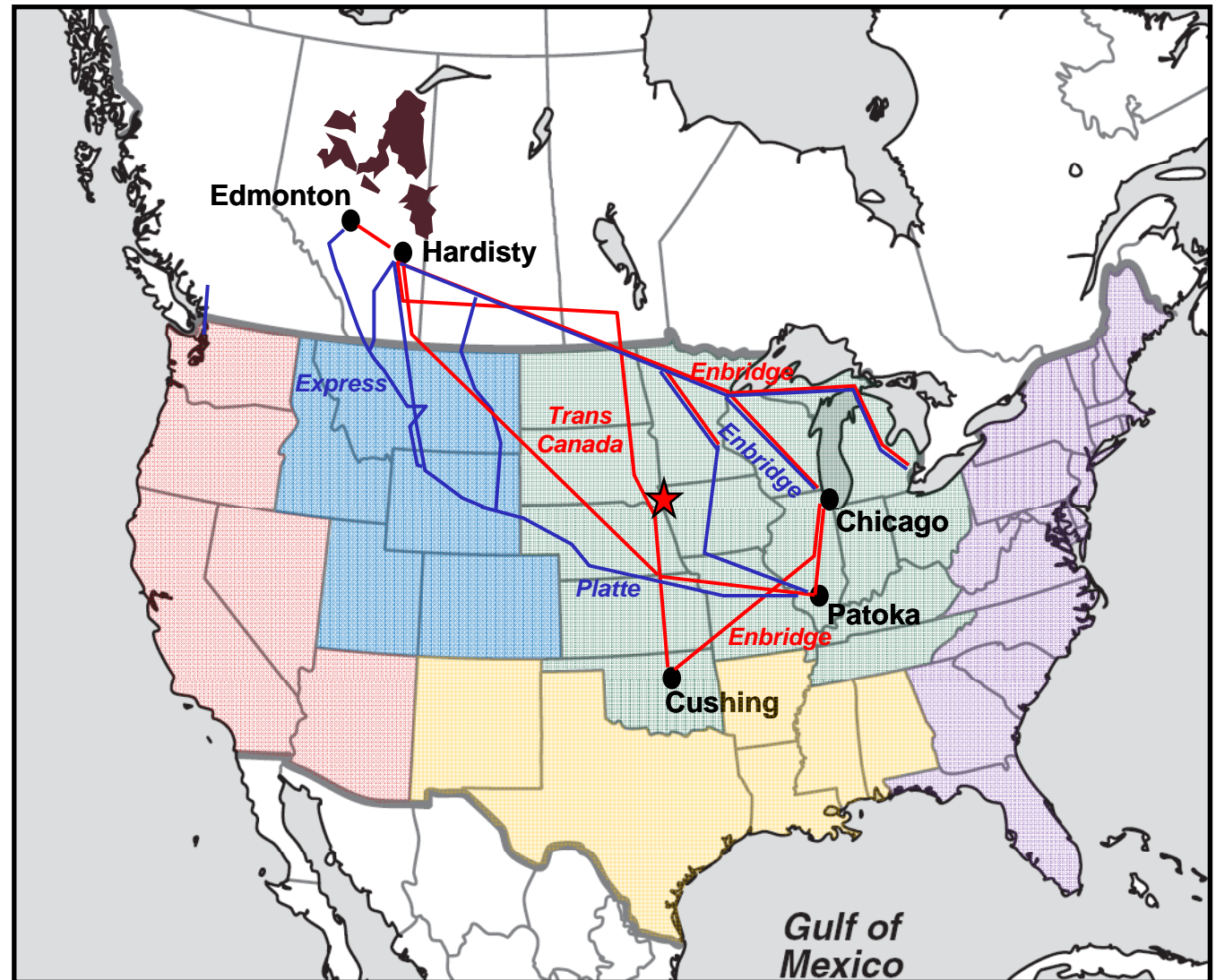
Alberta to PADD II Crude Transportation

► Existing (Blue)

- **Enbridge**
 - Light: 580 mbpd
 - Heavy: 1,153 mbpd
- **Kinder Morgan**
 - Express: 282 mbpd
 - Platte: 143 mbpd

► Proposed (Red)

- **Transcanada**
 - Keystone: 590 mbpd
 - Keystone XL: 36" TBD
- **Enbridge**
 - Clipper: 450-800 mbpd



Tri-State Area (SD, NE, IA) Provides Base Product Offtake Opportunity

- ▶ No refineries in SD, Nebraska or Iowa
- ▶ Total 2006 demand for gasoline and distillate of almost 300,000 BPD.
- ▶ Tri-State area accounts for 8% of the total PADD 2 demand.

Refined Product Demand

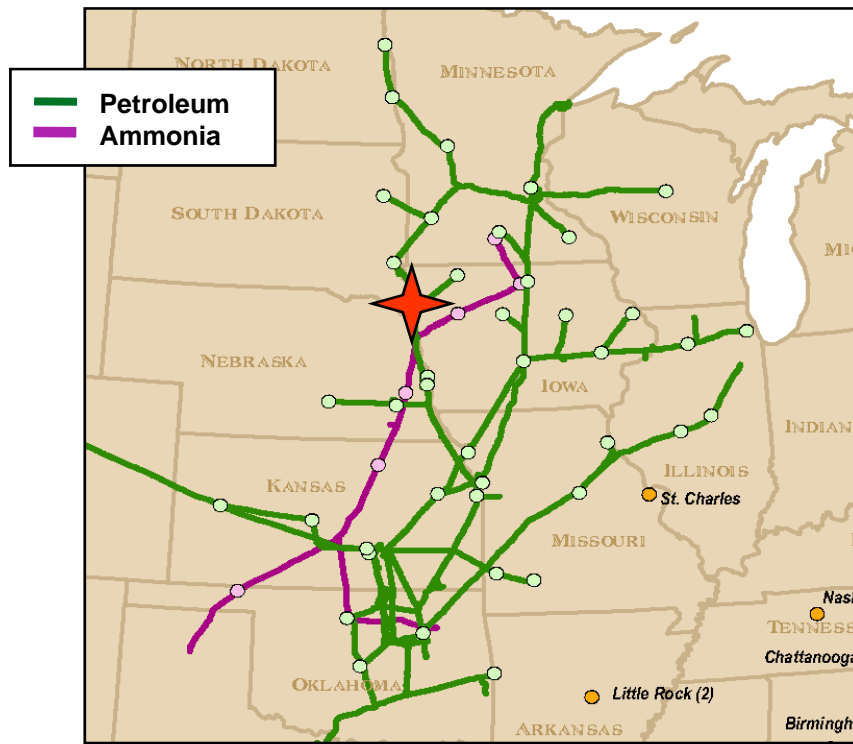
Thousand Barrels Per Day			
	Gasoline	Distillate	Total
Iowa	92	63	154
Nebraska	51	44	95
South Dakota	28	22	50
Total	170	129	299



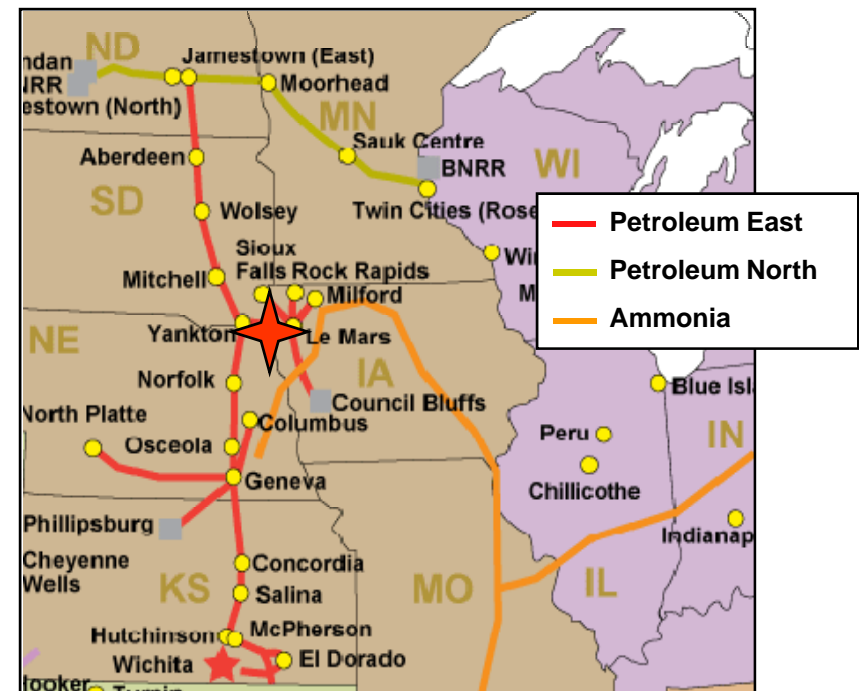
Product Distribution: Existing Logistics will be Utilized Where Possible

- ▶ The HEC site is well positioned with respect to existing pipeline infrastructure.
- ▶ The Magellan and Nustar Energy pipelines currently carry product from refineries in Kansas, Oklahoma and the USGC.
- ▶ HEC production will replace long-haul barrels from refineries in USGC.

Magellan System (excl TX)



Nustar Energy (formerly Valero) System (excl. South)



ABOUT THE HEC

Hyperion Energy Center (HEC)

▶ World-class, state-of-the-art petroleum refinery with fully-integrated petcoke gasification complex providing cost-effective hydrogen, power, and steam

- **400,000 BBL/day full conversion refinery**
 - Delayed Coking
 - Hydrocracking
 - Reforming, Isomerization
 - UOP Oleflex & InAlk
- **Integrated Petcoke Gasification Island**
 - Produces hydrogen, power and steam
 - 8,000 STPD Petcoke
 - Site largely self-sufficient; trim make-up natural gas and base load power from grid

▶ Timeline

- **Acquired necessary site options**
- **Announced Union County, South Dakota Site (June 2007)**
- **Filed for Rezoning of Land (December 2007)**
- **Filed PSD air permit application in South Dakota (December 2007)**
- **Land officially rezoned to Energy Center Planned Development (June 2008)**
- **PSD Air Permit issued (2nd Quarter 2009)**
- **All permits and permissions obtained (4th Quarter 2009)**
- **Begin Construction (2010)**
- **Full Operation (2014)**

Hyperion Energy Center Rendering



Hyperion Energy Center Facts

► Construction of the HEC will require:

- An average of 4,500 employees
- A peak of over 8,000 employees for a 6 month period
- An average employment of 770 pipefitters
- A peak employment of 960 electricians
- A peak employment of 320 Welders
- 215,000 cubic yards of concrete
- 16,000 tons of rebar
- 400,000 tons of steel
- Almost 4 million linear feet of piping
- Nearly 800,000 valves
- 39.8 million feet of wire and cable



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