



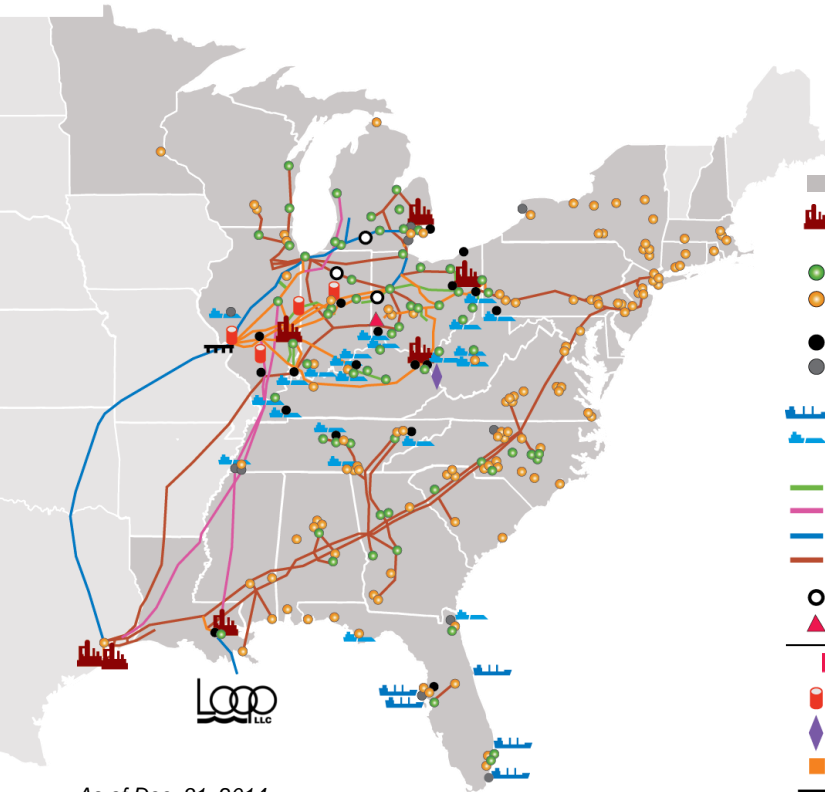
**Marathon
Petroleum Company LP**

High Octane Gasoline Production

May 5, 2015

- MPC Overview
- Potential to produce high octane motor gasoline
- Timetable
- Challenges
- Questions

Focused and Integrated Network



- Marketing Area
- 🏭 **MPC Refineries**
- **Light Product Terminals**
- MPC owned and Part-owned
- Third Party
- **Asphalt/Heavy Oil Terminals**
- MPC Owned
- Third Party
- 🚢 **Water Supplied Terminals**
- 🚢 Coastal
- 🚢 Inland
- 📏 **Pipelines**
- 📏 MPC Owned and Operated
- 📏 MPC Interest: Operated by MPC
- 📏 MPC Interest: Operated by Others
- 📏 Pipelines Used by MPC
- Ethanol Facility
- ▲ Biodiesel Facility
- MPLX**
- 🚛 Tank Farms
- 📏 Butane Cavern
- 📏 Pipelines
- 🚢 Barge Dock



As of Dec. 31, 2014



Refineries



Biodiesel/Ethanol Facilities



Terminals



Pipelines



Coastal Water Terminals



Inland Water Terminals



Speedway



Brand Marketing

Potential for Refining Industry to Produce High Octane Motor Gasoline



- Increasing the production of high octane gasoline would likely come from increased hydrocarbon gasoline component octane or from increased ethanol blending
- A combination of well-developed hydrocarbon processing technologies, including catalytic reforming, isomerization, and dehydrogenation/dimerization would likely be employed to increase the octane of blending components currently in the gasoline pool
- Product distribution and retail infrastructure currently exists to deliver a hydrocarbon based, high octane motor gasoline product
- Increased ethanol blending would likely require the construction of new ethanol manufacturing capacity, product distribution systems, and retail infrastructure

A hydrocarbon based solution is both feasible and likely given the lower infrastructure requirements

- The timetable would likely run concurrently with the automotive fleet turnover given the minimal logistics infrastructure requirements and the capacity to initiate the increased production of high octane blends with limited capital investments
- As the market need for higher octane fuels increases, the refinery industry capital investments needed to produce the high octane gasoline blending components would likely proceed
- 87 AKI gasoline would continue to be offered in parallel with the high octane gasoline until the automotive fleet is effectively turned over

The current capacity to manufacture and deliver increased high octane gasoline allows the automotive fleet turnover to determine the pace of implementation

- The net carbon emission balance is unclear given the increased processing and energy required to manufacture either ethanol or higher octane hydrocarbon gasoline blending components
- The increased processing at refineries will likely increase the aromatic content of the finished gasoline product while staying below current aromatic content specifications
- Increased ethanol manufacturing and blending may increase formaldehyde emissions, ozone precursors, and Particulate Matter (PM)
- High octane motor gasoline will likely cost more to produce than 87 AKI gasoline
- Misfueling the new high octane engines with 87 AKI gasoline is a concern

Both hydrocarbon and ethanol based solutions have issues and implications

For both increased gasoline component octane and increased ethanol production:

- Is there a “well to wheels” carbon emissions benefit?
- What are the other environmental impacts?
- What are the economic impacts?