Storage Hub Acceleration and Development
Overview and Background

2017 Governor’s Energy Summit
Advancing Energy Development

Kevin DiGregorio, Ph.D.
Executive Director
Chemical and Other Manufacturing from Marcellus Shale

- Huge supply of natural gas
- Not just lots of Methane, but also large amounts of Ethane
- Ethane is like baker’s flour … a major chemical feedstock

“Friends Don’t Let Friends Burn Ethane”
Chemical and Other Manufacturing from Marcellus Shale

- Regional Crackers
  - Braskem in WV
  - Shell in PA
  - PTT Global in OH

- US Methanol in WV

- Many Other Opportunities
Chemical and Other Manufacturing from Marcellus Shale

POTENTIAL ECONOMIC IMPACTS OF CHEMICAL AND PLASTICS MANUFACTURING IN APPALACHIA

Martha Gilchrist Moore, Sr. Director – Policy Analysis and Economics

The Scenario and Opportunity
- 350,000-400,000 bpd ethane by 2025
- $35.8 billion in new investment
- 5 ethane crackers + other facilities
- Storage and pipeline infrastructure built

Four-State Economic Impact
- 25,664 Direct Jobs
- 100,818 Total Jobs
- $6.2 Billion Total Payroll
- $2.9 Billion Taxes
Appalachian Storage Hub … Storage and Pipeline Infrastructure

PROPOSED APPALACHIAN STORAGE HUB

Chemical Intermediate and Raw Material Infrastructure

Ethylene and Propylene Production

West Virginia

SOURCE: MATRIC
Appalachian Storage Hub …
Storage and Pipeline Infrastructure

Three Storage Areas Identified

Northern Prospect Area

Central Prospect Area

Southern Prospect Area
Appalachian Storage Hub …
Storage and Pipeline Infrastructure

TYPES OF UNDERGROUND STORAGE

• Mined-Rock (Limestone) Caverns
• Solution-Mined Salt Caverns
• Depleted Gas Reservoirs
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Storage and Pipeline Infrastructure

Northern Prospect Area

Stacked Storage
- NGL 1 ... Sandstone
- NGL 2 ... Salt Caverns
- NGL 3 ... Salt Caverns
- NGL 4 ... Sandstone
Appalachian Storage Hub … Storage and Pipeline Infrastructure

Central Prospect Area

Stacked Storage

NGL 1 ... Limestone Mines
NGL 2 ... Depleted Gas Fields
NGL 3 ... Inactive Gas Fields
NGL 4 ... Salt Caverns
Appalachian Storage Hub …
Storage and Pipeline Infrastructure

Southern Prospect Area

Stacked Storage
NGL 1 … Limestone Mines
NGL 2 … Depleted Gas Fields
NGL 3 … Sandstone
NGL 4 … Depleted Gas Fields