Liquids Pipeline Emergency Response

RRT 1&2 Joint Meeting
Burlington, VT

April 12, 2017

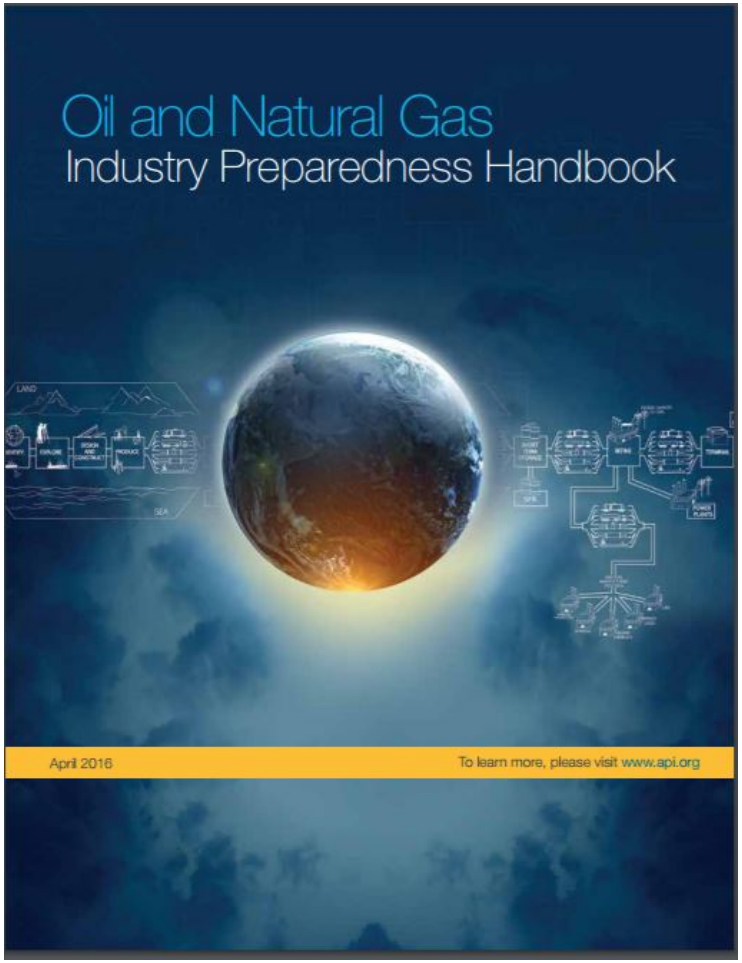
Overview

- Industry Preparedness
- Supply Chain and Markets
- Infrastructure
  - Pipelines
  - Marine
  - Rail/Truck
- Vulnerabilities
- Engagement and Waivers
- Industry Focus
  - Security Issues
  - Safety and Integrity Management
  - Safety Management System
  - Public Awareness
  - First Responder Engagement
  - Spill Impact Mitigation Assessment (SIMA)
- Questions/Discussion

Industry Preparedness

- API Recommended Practice (RP) 1174 – Onshore Hazardous Liquid Pipeline Emergency Preparedness and Response (December 2015)
  - Emergency Management System
  - Management of Change
  - Planning
  - Training and Exercises
  - Response (ICS)
  - Measuring and Continual Improvement

Industry Preparedness



- http://www.api.org/~/media/Files/Policy/Safety/ONG-Industry-Preparedness-Handbook-v2.pdf

Industry Preparedness

- Oil and Natural Gas Industry Preparedness Handbook
  - **Response Strategy**
  - **Energy Supply Chains**
  - National Response Coordination
  - Preparing at the State and Local Levels
  - **Potential Waivers**
  - Distribution and Ownership of Retail Stations

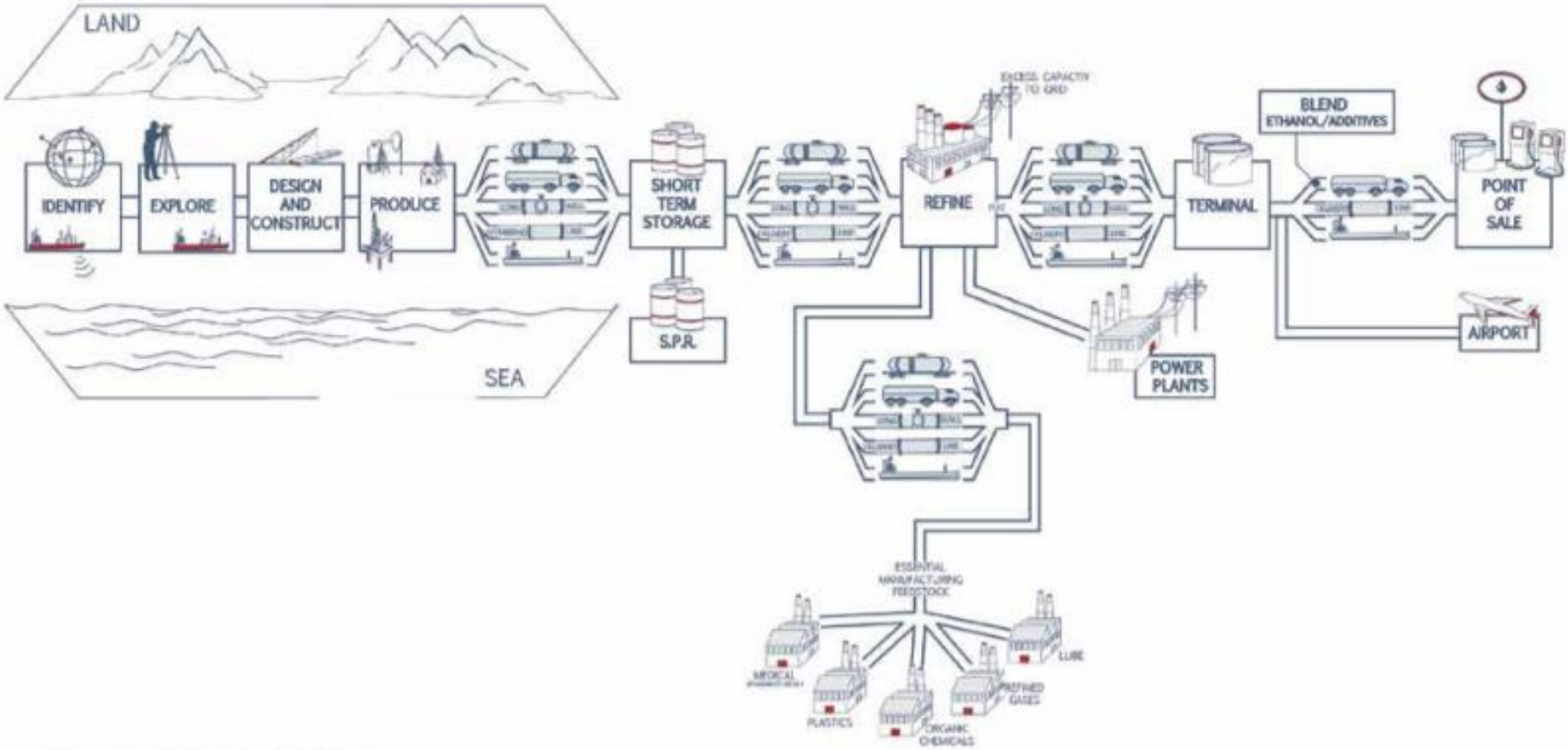
Industry Preparedness

- Educating Stakeholder Groups
  - Utilize and disseminate materials to educate stakeholder groups
  - Hold regular educational sessions with decision makers and stakeholder groups to explain oil and gas systems, markets, and critical functions
  - Utilize existing relationships and mechanisms to ensure channels of communication are open and effective
  - Identify key staffing changes within stakeholder groups that warrant and education of the complexities of the O&G systems.

Industry Preparedness

- Formalizing Processes of Communication and Information Sharing
  - Work with local and state-based industry organizations to identify industry roles and responsibilities surrounding communication
  - Facilitate effective communication between key govt representatives and company/facility reps
  - Develop processes to facilitate information sharing between impacted facilities and govts
  - Utilize existing exercises and drills to understand and institutionalize the processes and procedures once they are recognized and accepted

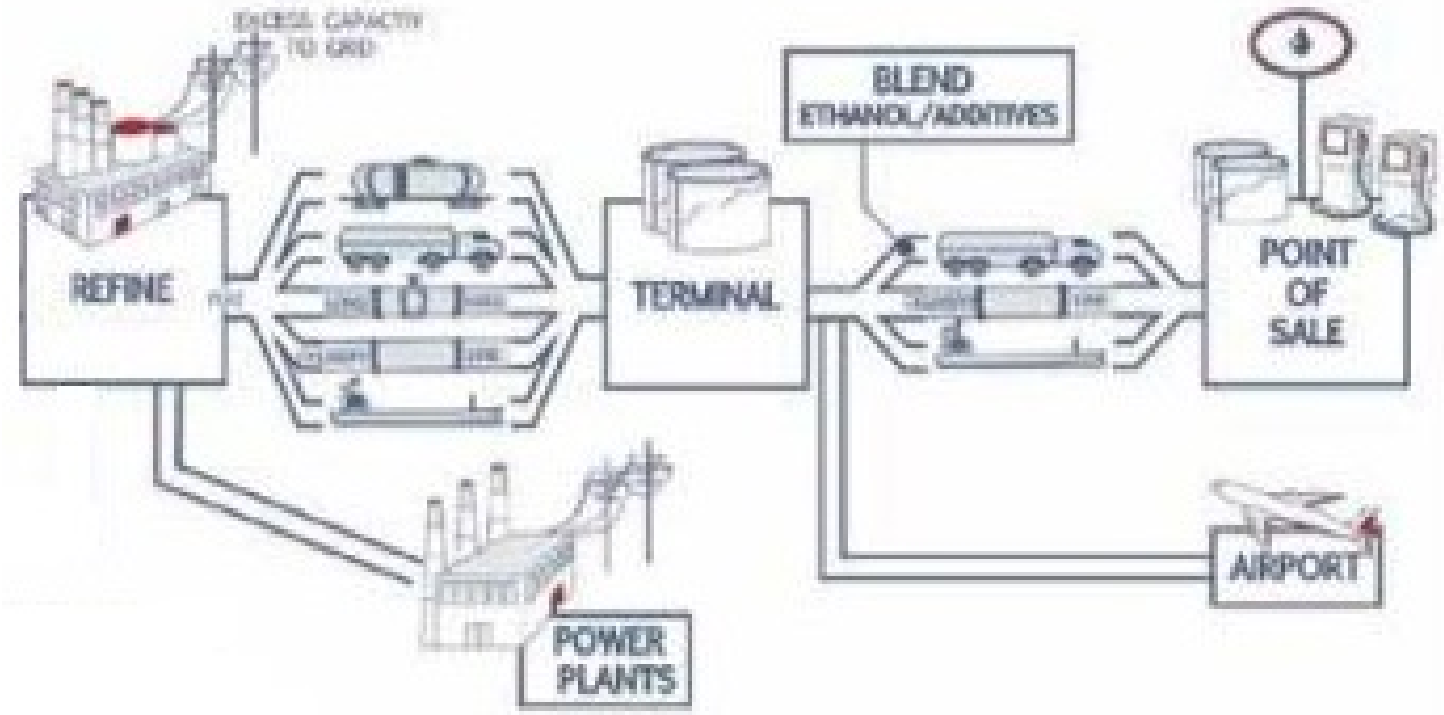
CRITICAL ELEMENTS OF THE OIL SUPPLY CHAIN



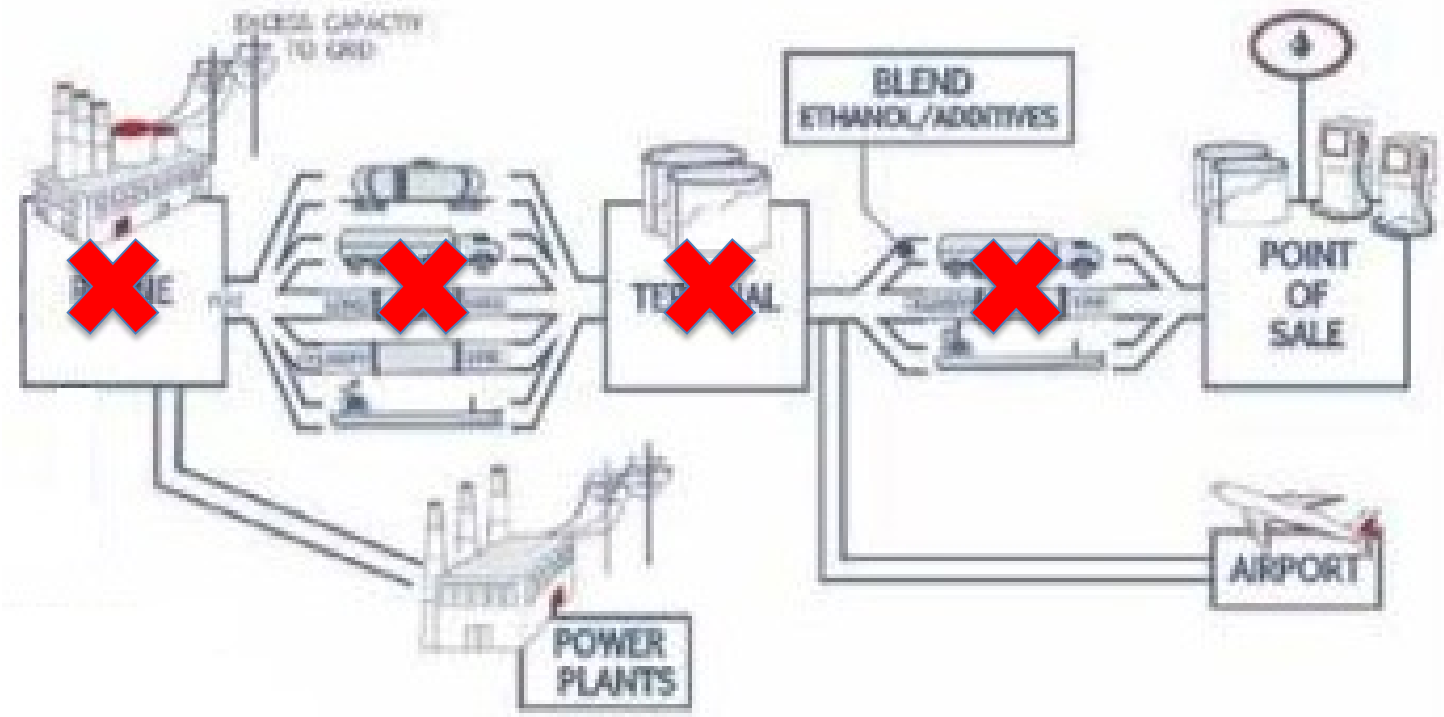
Legend:
S.P.R.: Strategic Petroleum Reserve

RESOURCES:	PEOPLE (HUMAN BEHAVIOR, SKILLED/TRAINED PERSONNEL)	POWER (ELECTRICITY)	WATER	IT (TELECOM, CYBER, ACCESS CONTROL)

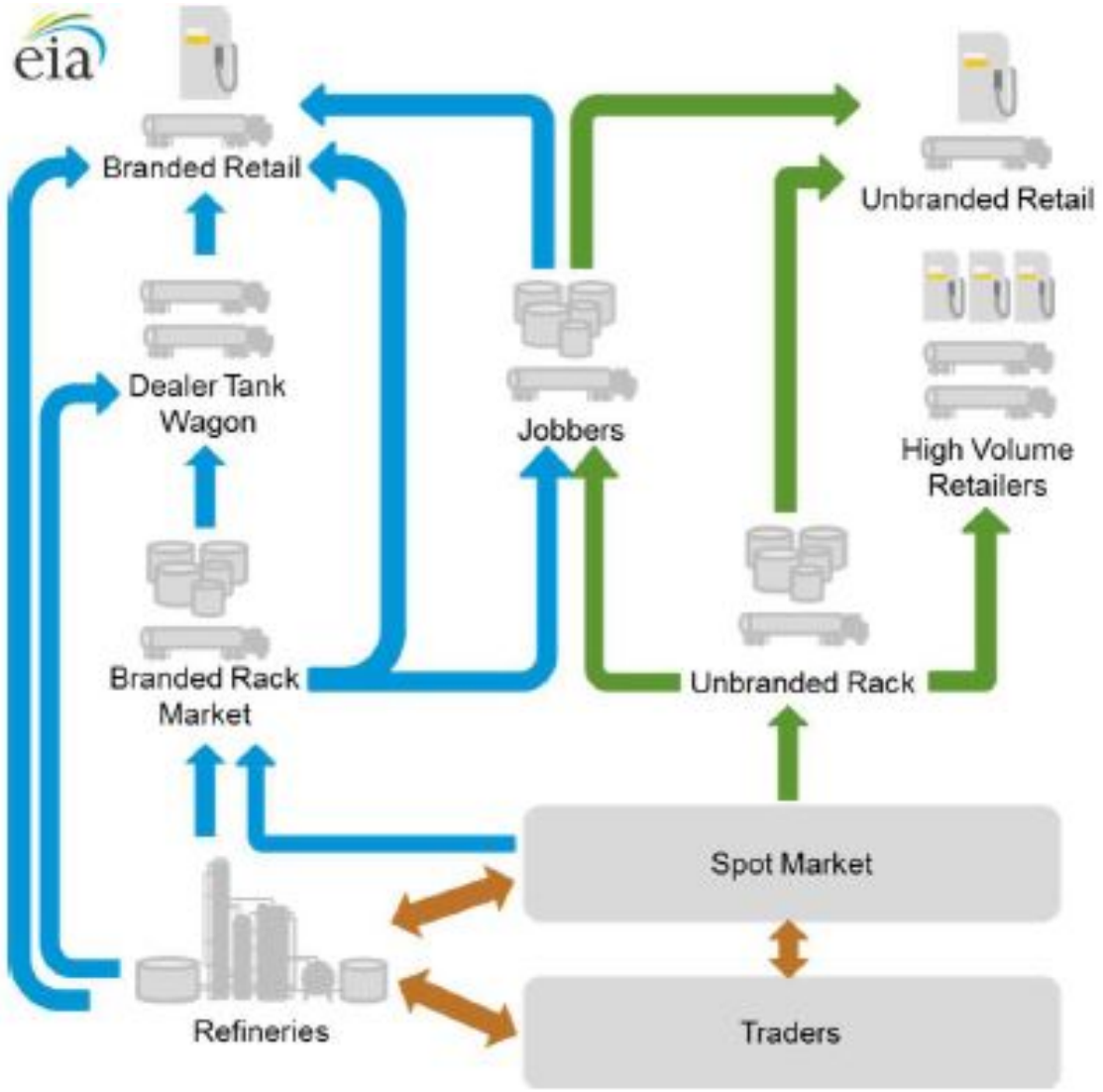
Supply Chain



Supply Chain

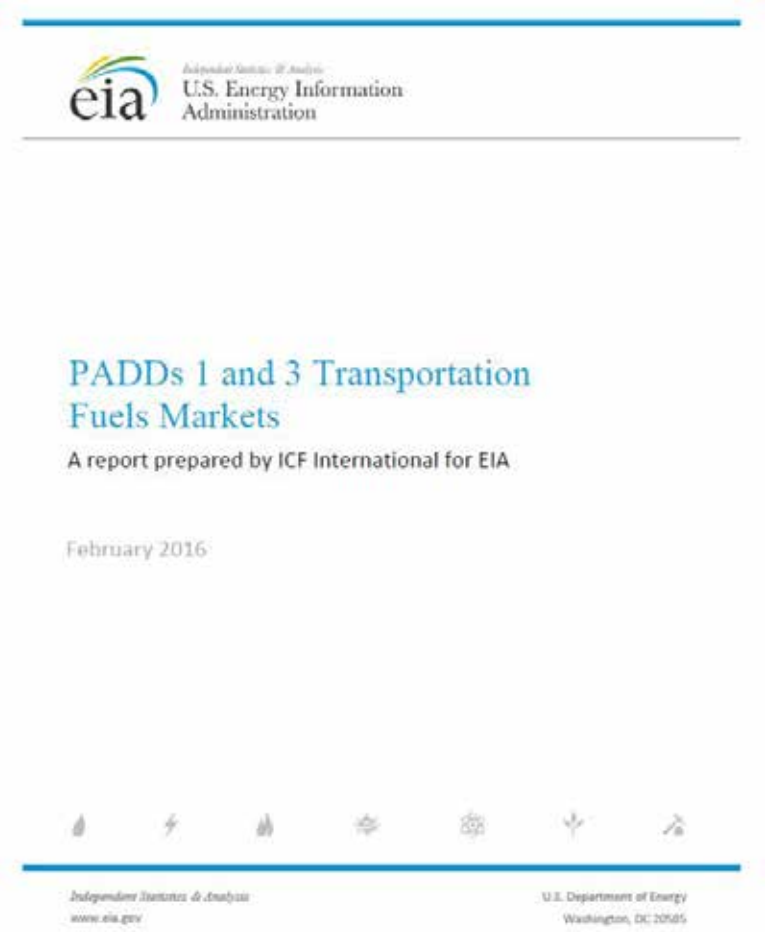


Markets



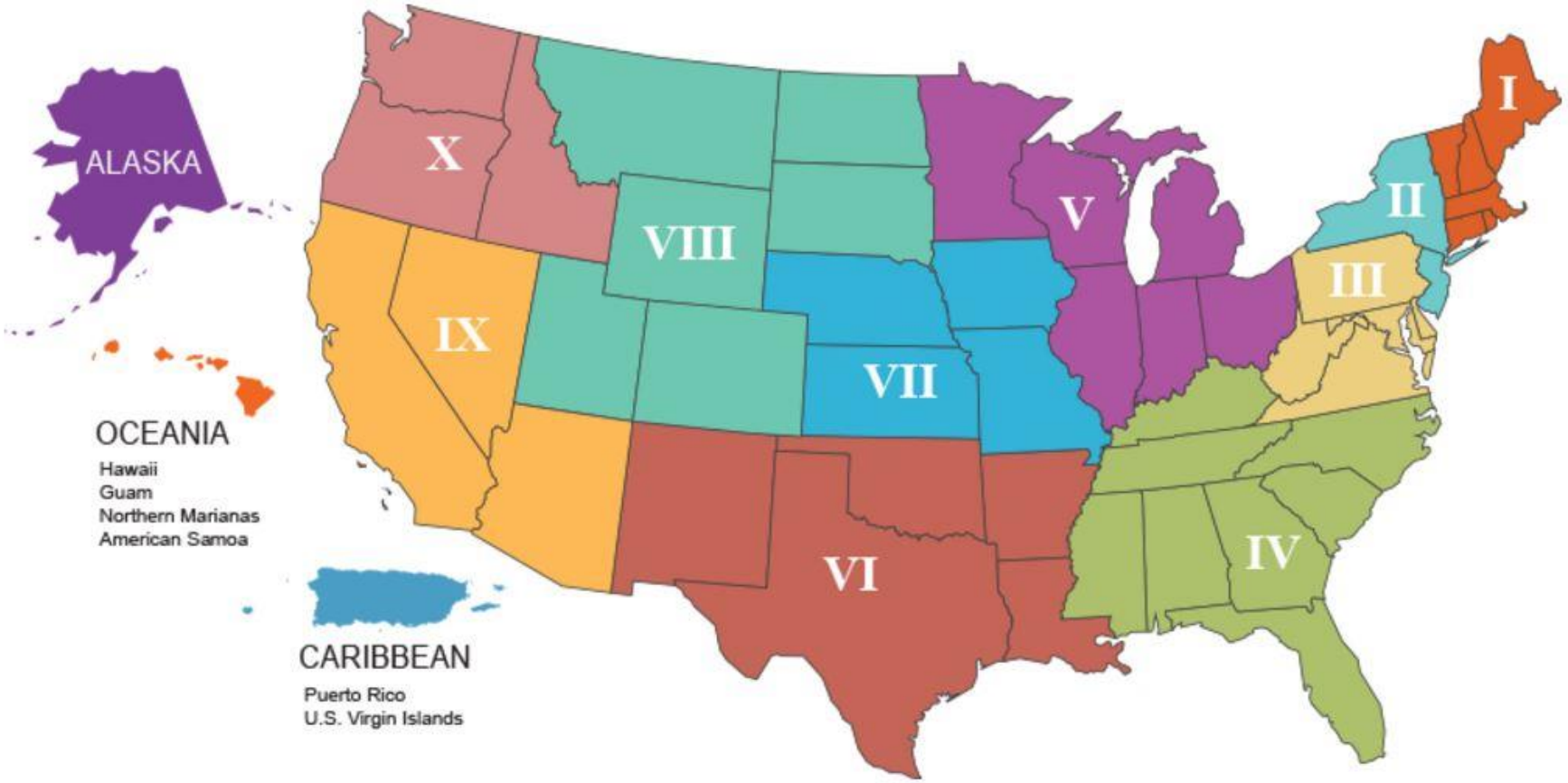
Source: U.S. Energy Information Administration, California Strategic Reserve Study[25]

Infrastructure



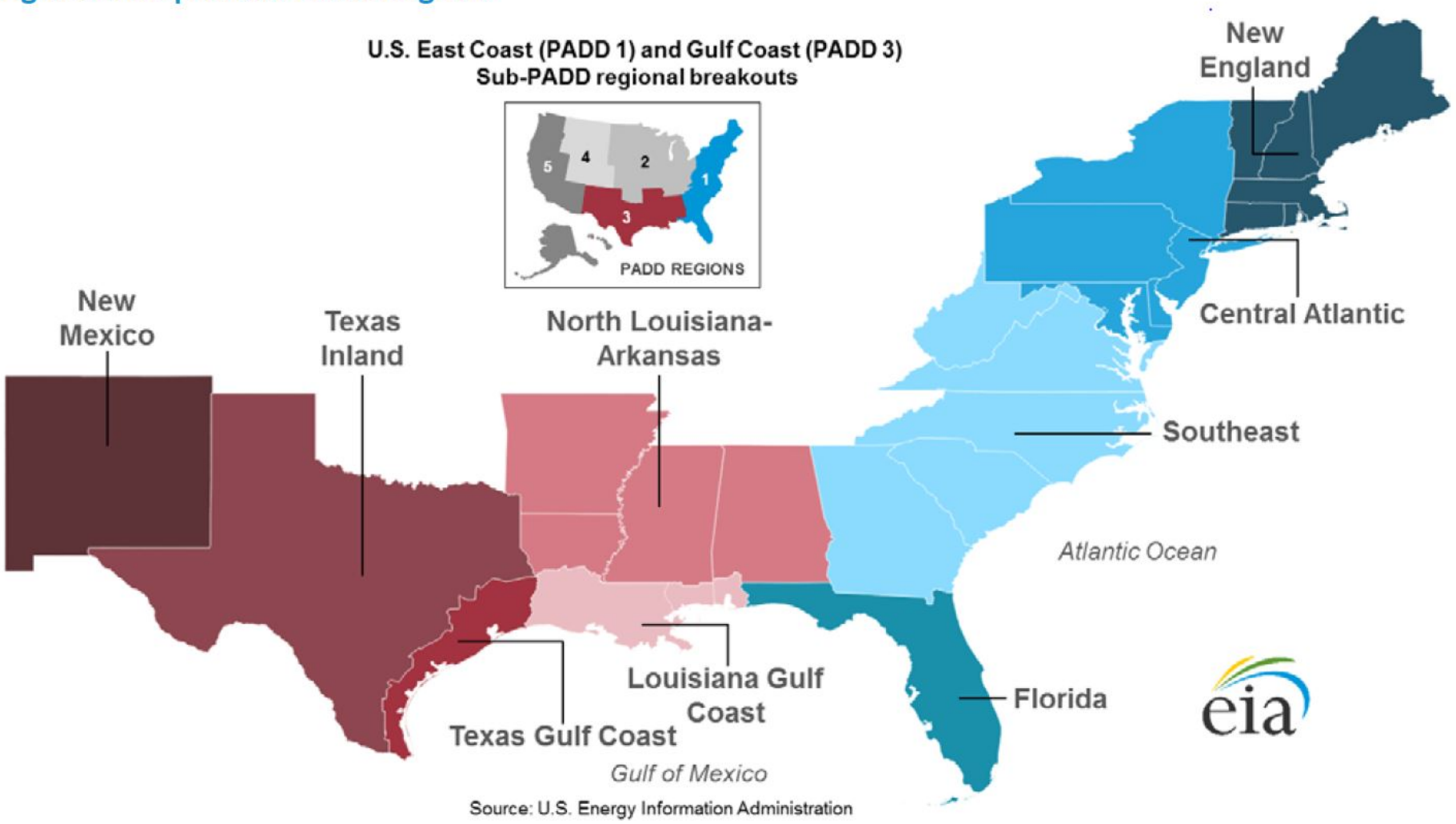
- https://www.eia.gov/analysis/transportationfuels/padd1n3/

Infrastructure



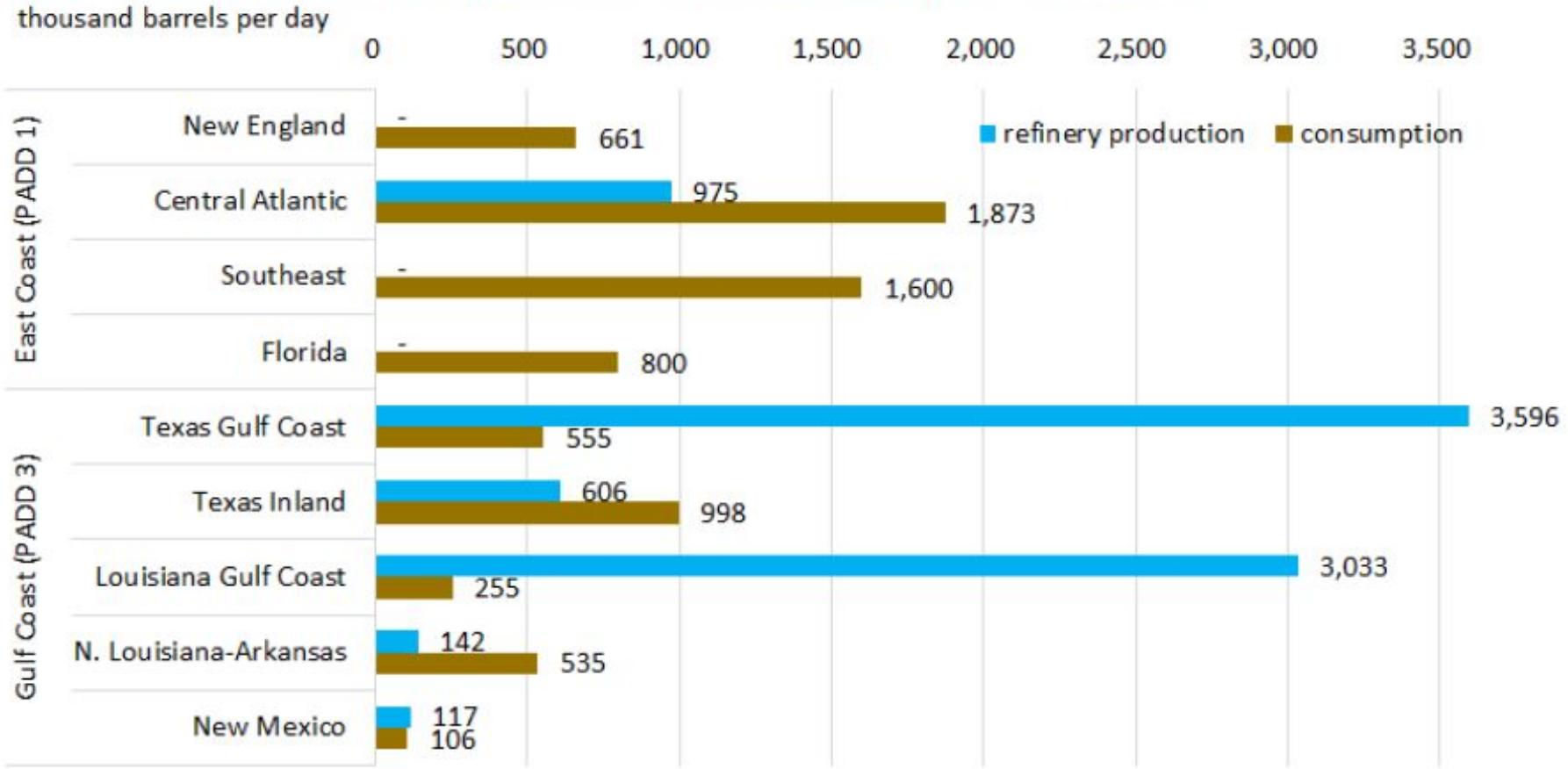
Infrastructure

Figure 2. Map of sub-PADD regions



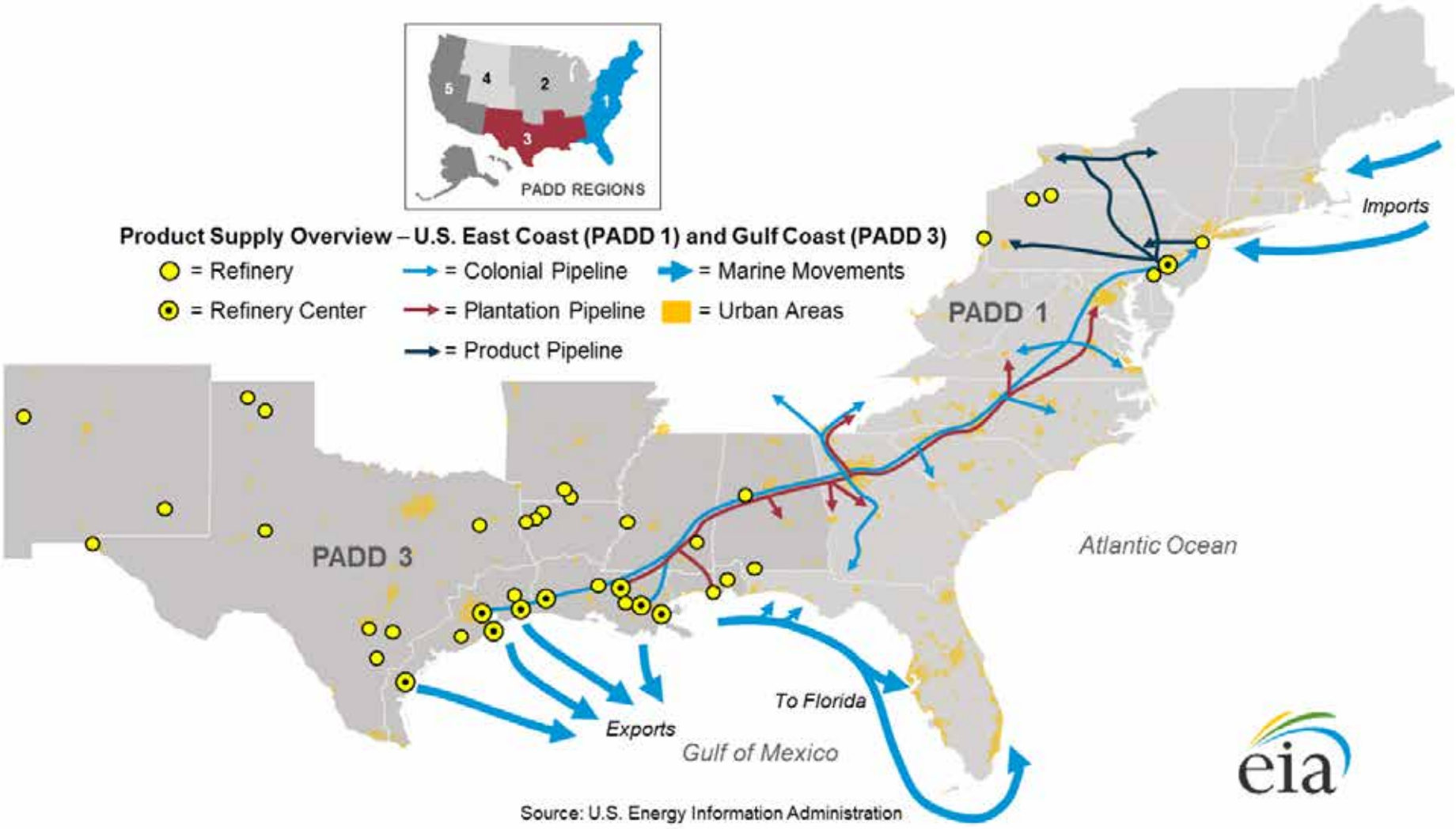
Infrastructure

Figure 4. Transportation fuels production vs. consumption by sub-PADD region



Source: ICF Analysis of EIA, FHWA, and Airlines for America data

Infrastructure



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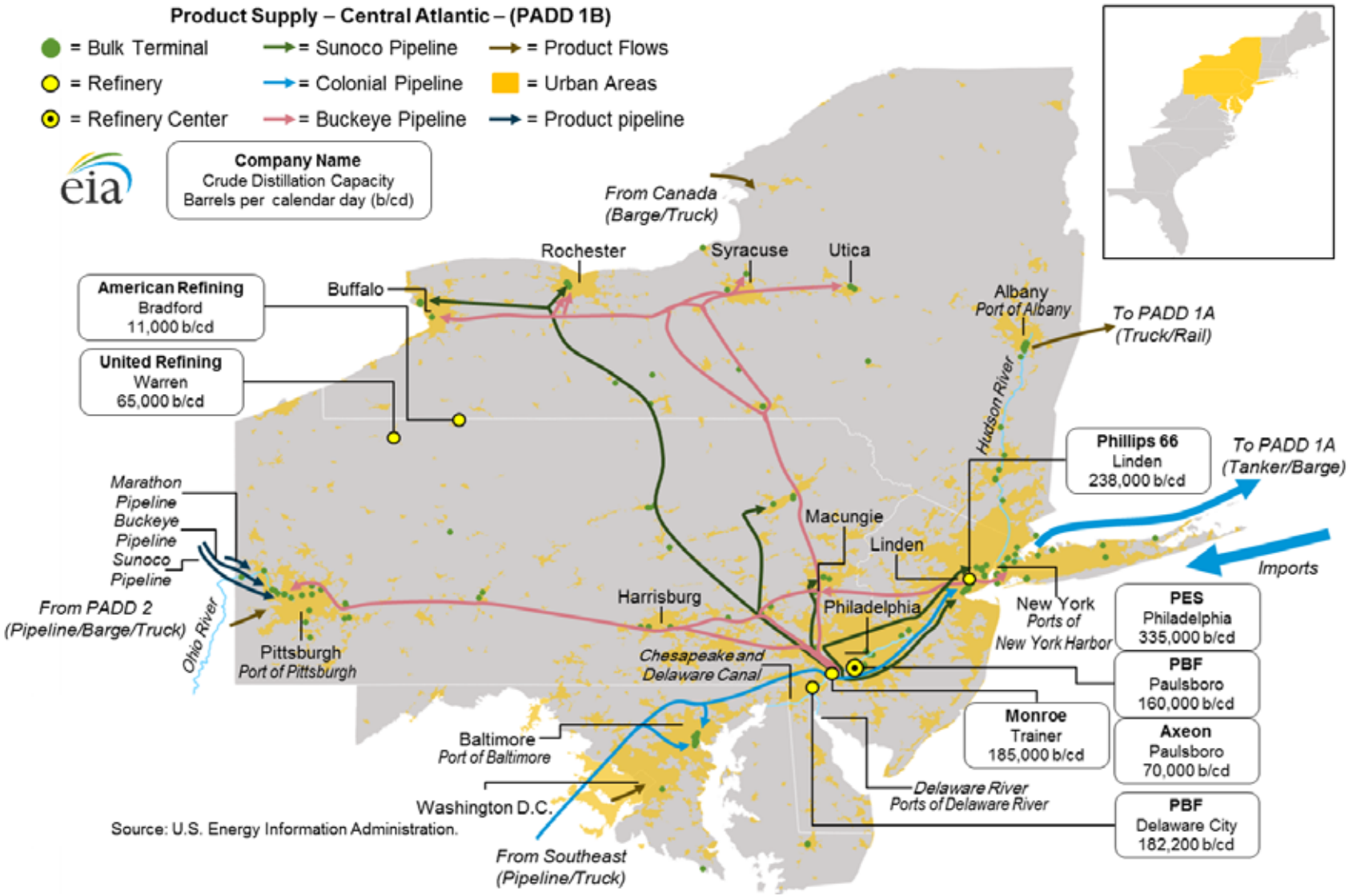
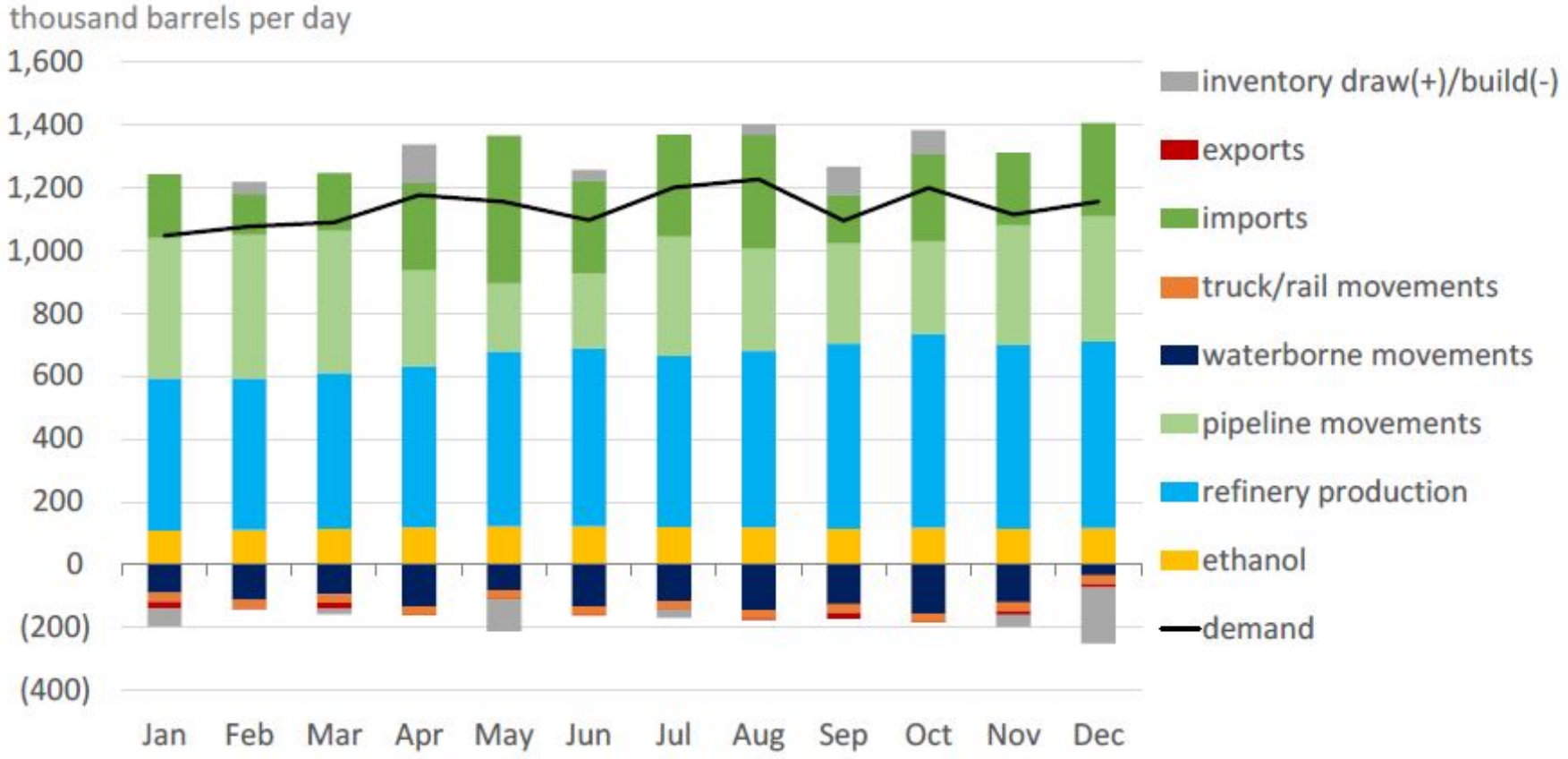


Infrastructure

Figure 16. Central Atlantic motor gasoline supply/demand balance, 2014

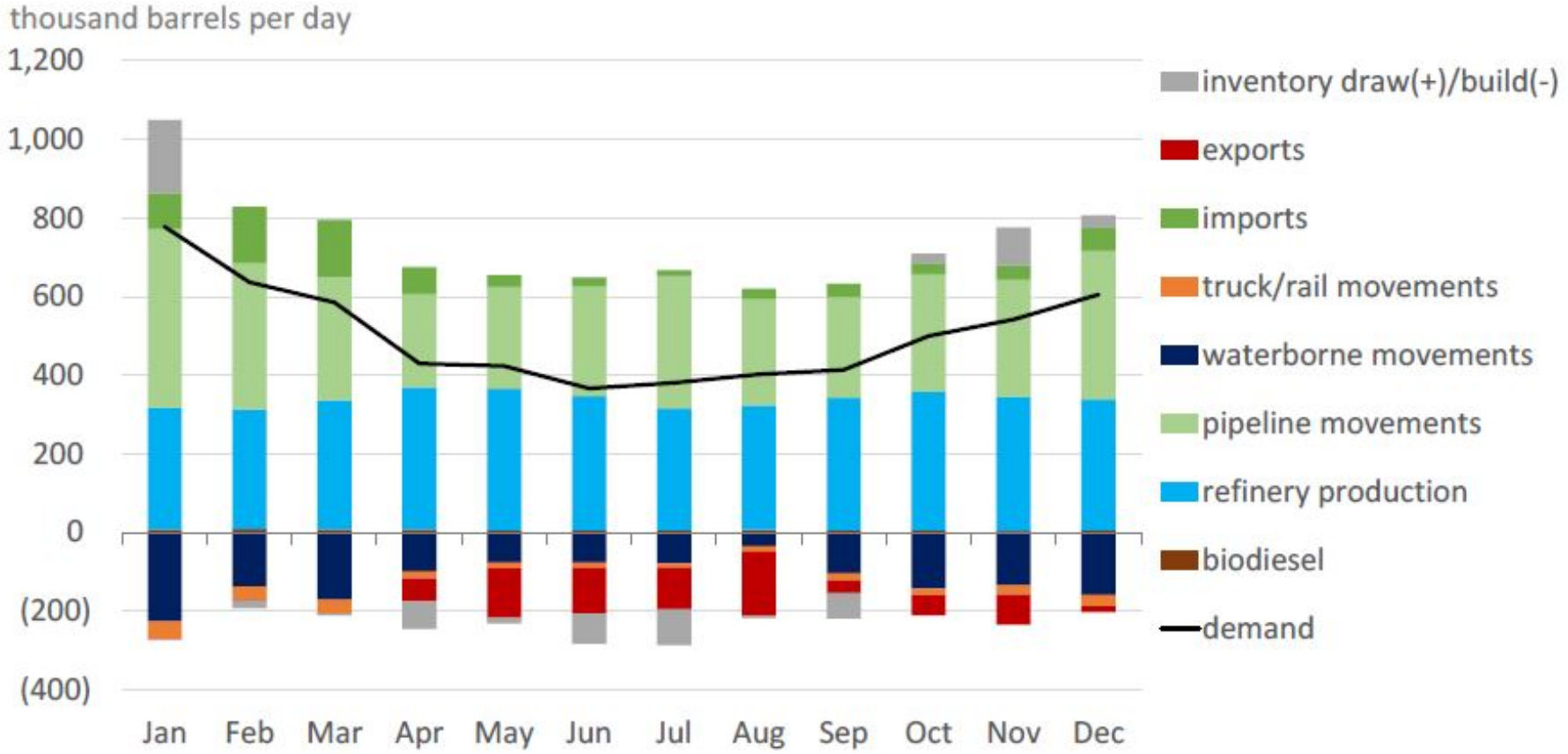


Note: All domestic movements and inventory changes are reported on a net basis.

Source: ICF Analysis of EIA, FHWA, FERC, and company 10-K data

Infrastructure

Figure 17. Central Atlantic distillate supply/demand balance, 2014

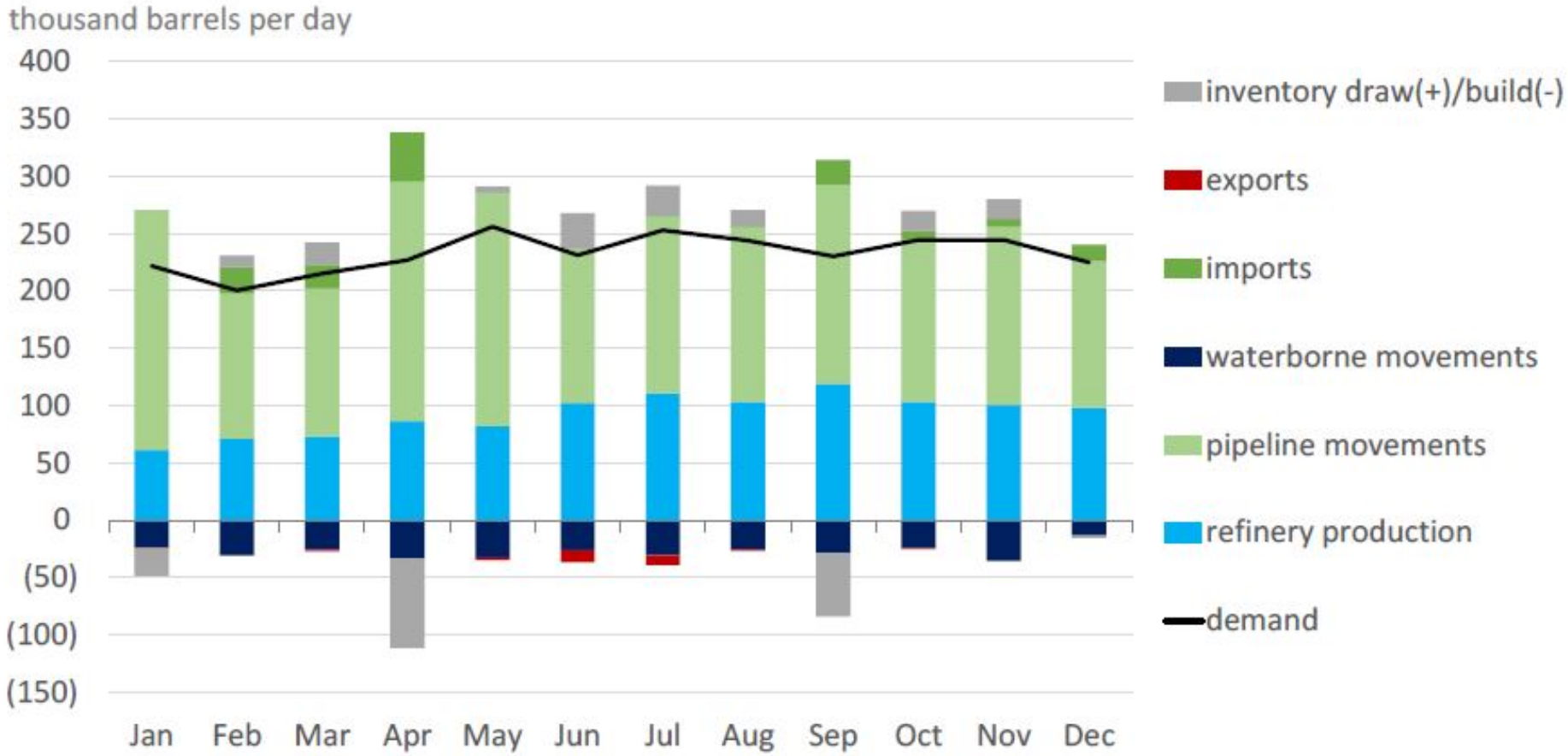


Note: All domestic movements and inventory changes are reported on a net basis.

Source: ICF Analysis of EIA, FHWA, FERC, and company 10-K data

Infrastructure

Figure 19. Central Atlantic jet fuel supply/demand balance, 2014

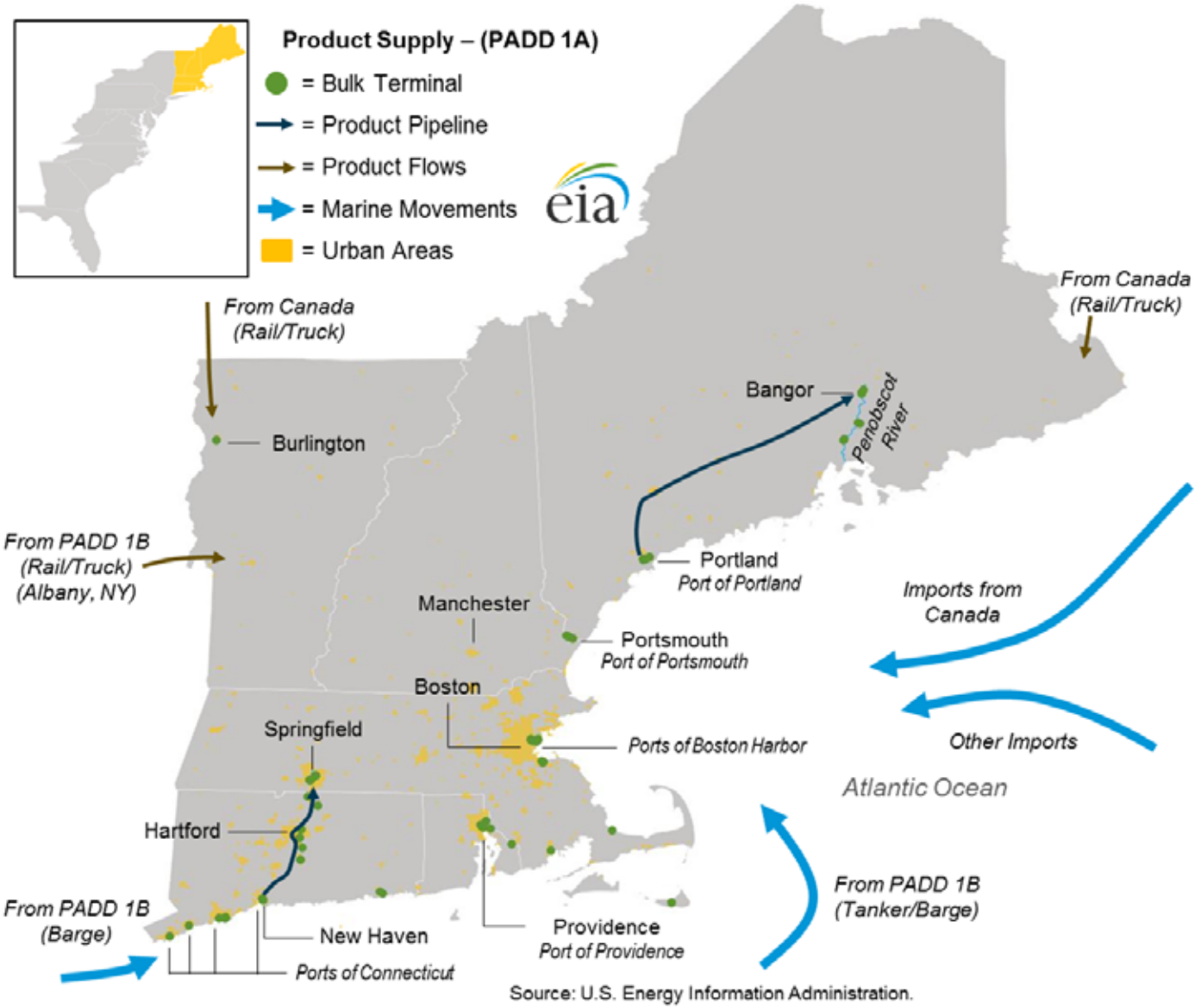


Source: ICF Analysis of EIA, FHWA, FERC, and company 10-K data

Vulnerabilities

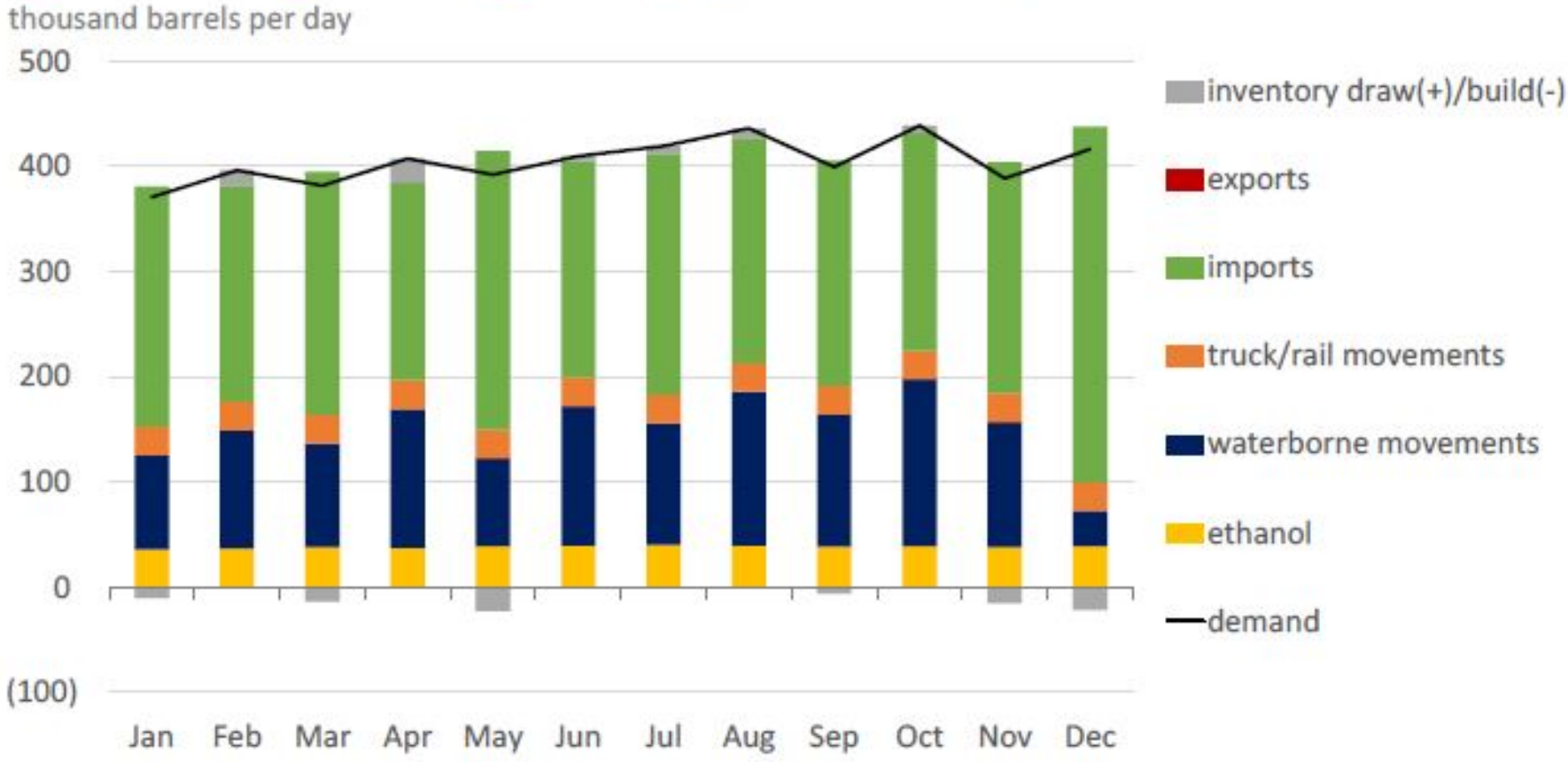
- Positives
  - Highly flexible; many supply sources (Colonial Pipeline, refineries, imports)
  - NY harbor has approx. 70 million barrel storage capacity (manage disruptions)
  - DOE NE Gasoline Supply Reserve – 700,000 barrels in NY harbor area.
- Negatives
  - Highly interconnected pipeline system; infrastructure damage could result in cascading effect (as we saw in Sandy with Colonial Pipeline fully backed up to NC)
  - No DOE emergency reserve of heating oil (18% of homes in sub-PADD region)

Infrastructure



Infrastructure

Figure 10. New England motor gasoline supply/demand balance, 2014



Source: ICF Analysis of EIA, FHWA, FERC, and company 10-K data

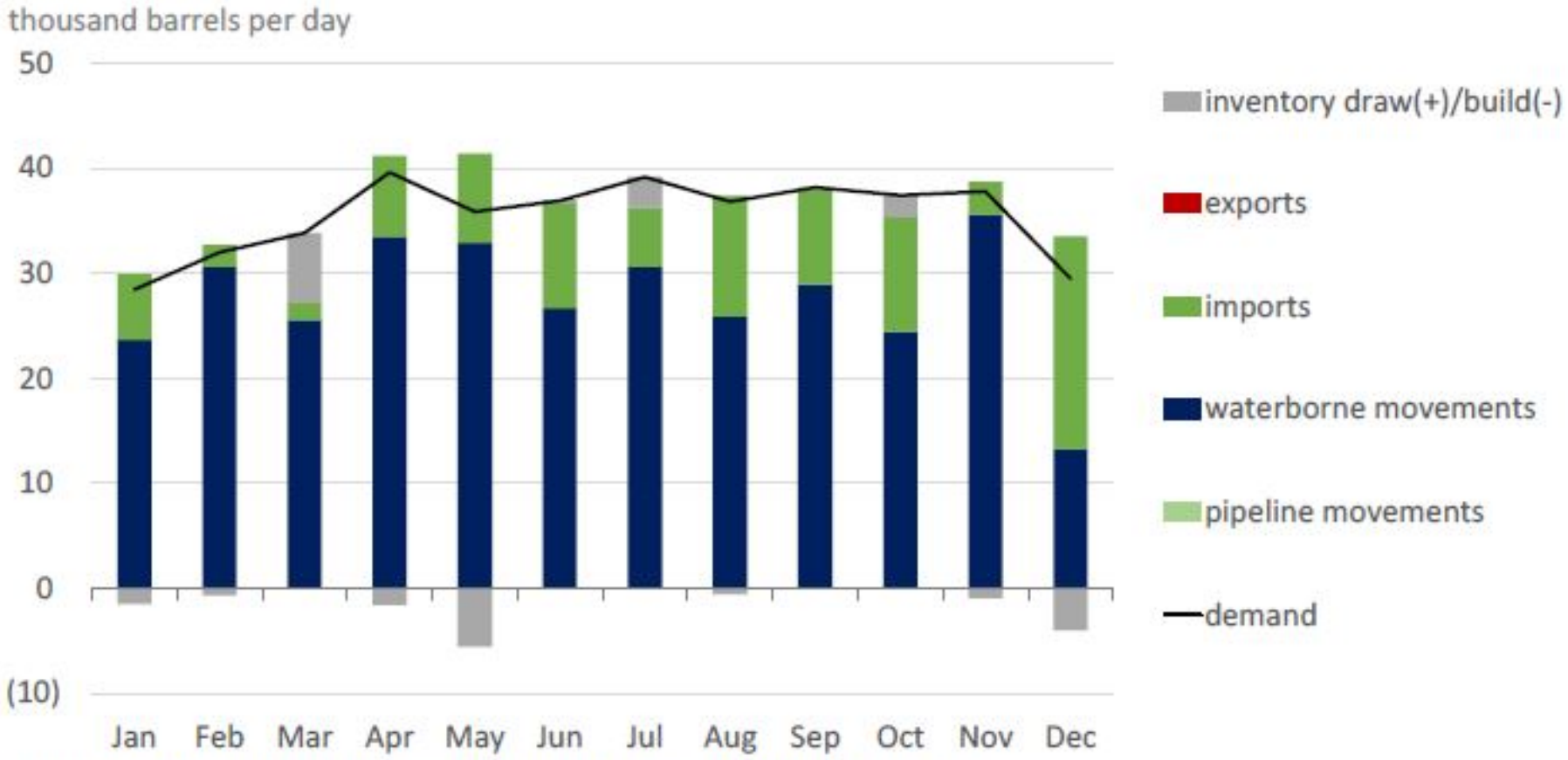
Infrastructure

Figure 11. New England distillate supply/demand balance, 2014

Source: ICF Analysis of EIA, FHWA, FERC, and company 10-K data

Infrastructure

Figure 12. New England jet fuel supply/demand balance, 2014



Source: ICF Analysis of EIA, Airlines for America, FERC, and company 10-K data

Infrastructure

Table 11. Waterborne receipts of transportation fuels at New England ports, 2013

barrels per day

Port	Domestic	Foreign	Total	Canadian % of foreign
Boston, MA	83,166	110,304	193,470	61%
New Haven, CT	95,217	50,868	146,085	46%
Providence, RI	40,100	64,356	104,456	34%
Portland, ME	10,865	54,608	65,473	94%
Portsmouth, NH	7,041	8,501	15,542	100%
Penobscot River, ME[(B)]	1,493	7,438	8,931	100%
Other, CT[(C)]	22,907	0	22,907	0%
Other, MA[(C)]	2,489	0	2,489	0%
Total	**263,278**	**296,077**	**559,353**	**60%**

(A) Includes Searsport, Belfast, and Bucksport, Maine

(B) Includes Bridgeport, New London, and Stamford, Connecticut

(C) Includes Fall River, New Bedford, Nantucket, and Martha's Vineyard, Massachusetts

Source: U.S. Army Corp of Engineers 2013 Waterborne Commerce of the United States Waterways and Harbors; EIA Company Level Imports, 2013

Vulnerabilities

- Pros
  - DOE emergency reserves of gasoline and heating oil in sub-PADD 1a
  - Can offset disruptions in supply domestically by increasing imports from Canada
- Cons
  - Almost all coming in via marine shipment; a disruption to area ports can have large impacts, especially in winter months
  - Heavy reliance on distillates for home heating (39% in 2013; over 50% of distillate consumption in region)
  - Jones Act sensitivities during emergency situations that heavily impact supply centers

Engagement and Waivers

GOVERNMENT & OIL INDUSTRY ENGAGEMENT (ESF-12)

DOE/EIA
- Fuel Supply Chain Analysis & Information Coord

DHS/FEMA/USCG/CBP
- Conduct Pre & Post Incident Assessments
- Coordinate Marine Transportation System Recovery (MTS) thru ESF-1
  - Restore Marine Navigation System
- Support Response thru ESF-9,10

DOT/MARAD
- MTS Assessment and Recovery thru ESF-1
  - Assess Economic Impact

DOD/USACE/SUPSALV/MSC
- Repair MTS Infrastructure thru ESF-1,3
- Provide SUPSALV & MSC Resources

State/Local
- National Guard
- Response thru all ESFs

DOE/EIA
- Fuel Supply Chain Analysis & Information Coordination

DOT/FMCSA
- Declaration of Regional Emergency
- Provide Highway Assessment
  - Assess Economic Impact
- Coordinate Transportation System Recovery thru ESF-1

DOD/USACE
Repair Infrastructure thru ESF-1,3

State/Local
- National Guard
- Response thru all ESFs

DOE/EIA
- Fuel Supply Chain Analysis & Information Coordination

DOT/PHMSA
- Provide Pipeline Assessment
  - Assess Economic Impact
- Coordinate Transportation System Recovery thru ESF-1

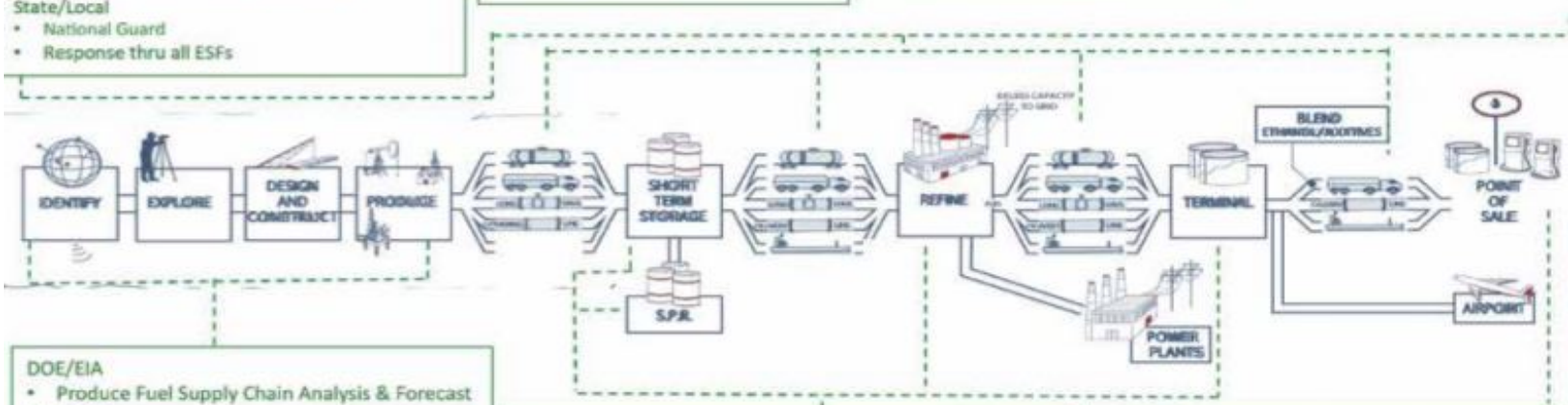
EPA
- Waive Fuel Requirements

State/Local
- National Guard
- Response thru all ESFs

DOE/EIA
- Fuel Supply Chain Analysis & Information Coordination

DOT/FRA
- Approval to Restart
- Provide Railway Assessment
  - Assess Economic Impact
- Coordinate Transportation System Recovery thru ESF-1

State/Local
- National Guard
- Response thru all ESFs



DOE/EIA
- Produce Fuel Supply Chain Analysis & Forecast

DOI/BSEE
- Produce Facility "Shut-In," Fuel Amount Affected & Personnel Evacuation List

DHS/OIP/FEMA/USCG
- Produce Infrastructure of Concern (IOC) List
- Manage Ports and Waterways Operations
- Support Response thru ESF-1,5,7,9,10,14

EPA
- Response thru ESF-10

State/Local
- Response thru all ESFs

DOE/EIA
- Produce Fuel Supply Chain Analysis & Forecast

DHS/OIP/FEMA/USCG
- Produce IOC List; Support Response thru ESF-5,7,10,14

EPA
- Waive Fuel Requirements
- Response thru ESF-10

State/Local
- Response thru all ESFs

Industry
- Return All Operations to Steady State

DOE/EIA
- Produce Fuel Supply Chain Analysis & Forecast

DHS/FEMA
- Support Response thru ESF-5,7,10,14

EPA
- Waive Fuel Requirements
- Response thru ESF-10

State/Local
- Waive Fuel Requirements
- Response thru all ESFs

Engagement and Waivers

POTENTIAL GOVERNMENT WAIVERS AND THE OIL SUPPLY CHAIN

DOT
- Jones Act
- Foreign Oil Spill Response Vessels
- Anchor Handling Waiver

State
- Vapor Recovery

DOT/FMCSA
- Declaration of Regional Emergency
- Safety Regulations (Hours of Service, Record Keeping, Driver Qualifications, Inspections)
- Non-Hazmat Spec Trucks

EPA
- Fuel Specs (RFG, ULSD)

State
- Comm. Truck Weight Limits & Registration
- Vapor Recovery
- Importer/Exporter License
- Interstate Fuel Taxes (IFTA, IRP)

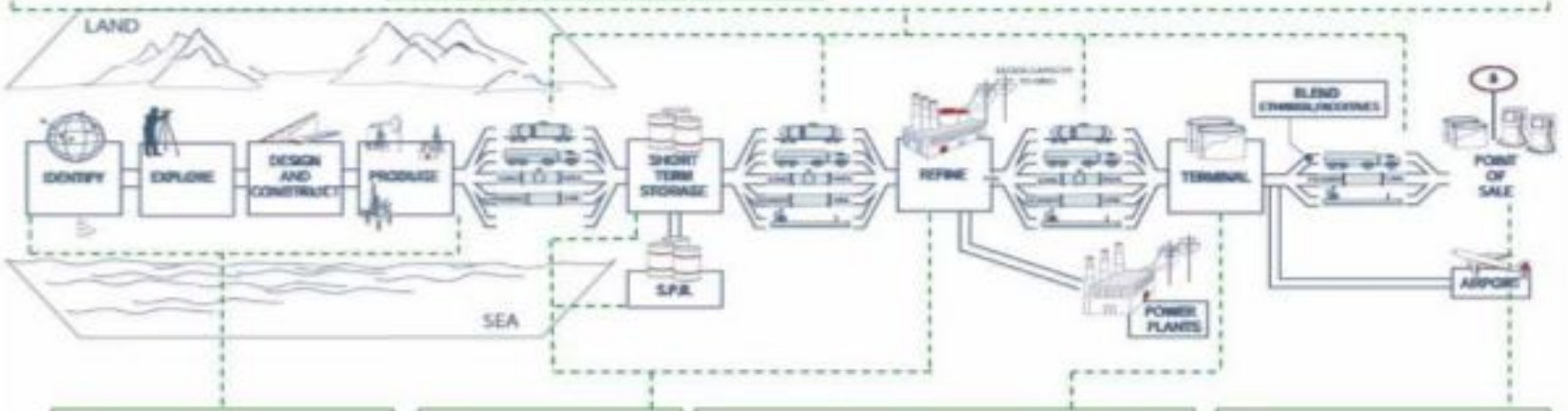
DOT/PHMSA
- Variance to Company Operations and Maintenance Plan

EPA
- Fuel Specs (RFG, ULSD)
- Tank Roof Landing Emissions

State
- Fuel Specs
- Air Quality Startup Emission, Vapor Containment Units

EPA
- Fuel Specs (RFG, ULSD)

State
- Importer/Exporter License
- Vapor Recovery
- Interstate Fuel taxes (IFTA, IRP)



DOT/MARAD
- Anchor Handling Waiver

EPA
- Fuel Specs (RFG, ULSD)

State
- Fuel Specs

EPA
- Fuel Specs (RFG, ULSD)

State
- Fuel Specs

EPA
- Fuel Specs (RFG, ULSD)
- Tank Roof Landing Emissions

Revenue (IRS & State)
- Motor Fuel Tax Exemption

State
- Fuel Specs (ASTM, RVP Waiver)
- Air Quality (Vapor Recovery/ Containment Units and No Action Assurance)

EPA
- Fuel Specs (RFG, ASTM, ULSD)
- Tank Roof Landing Emissions

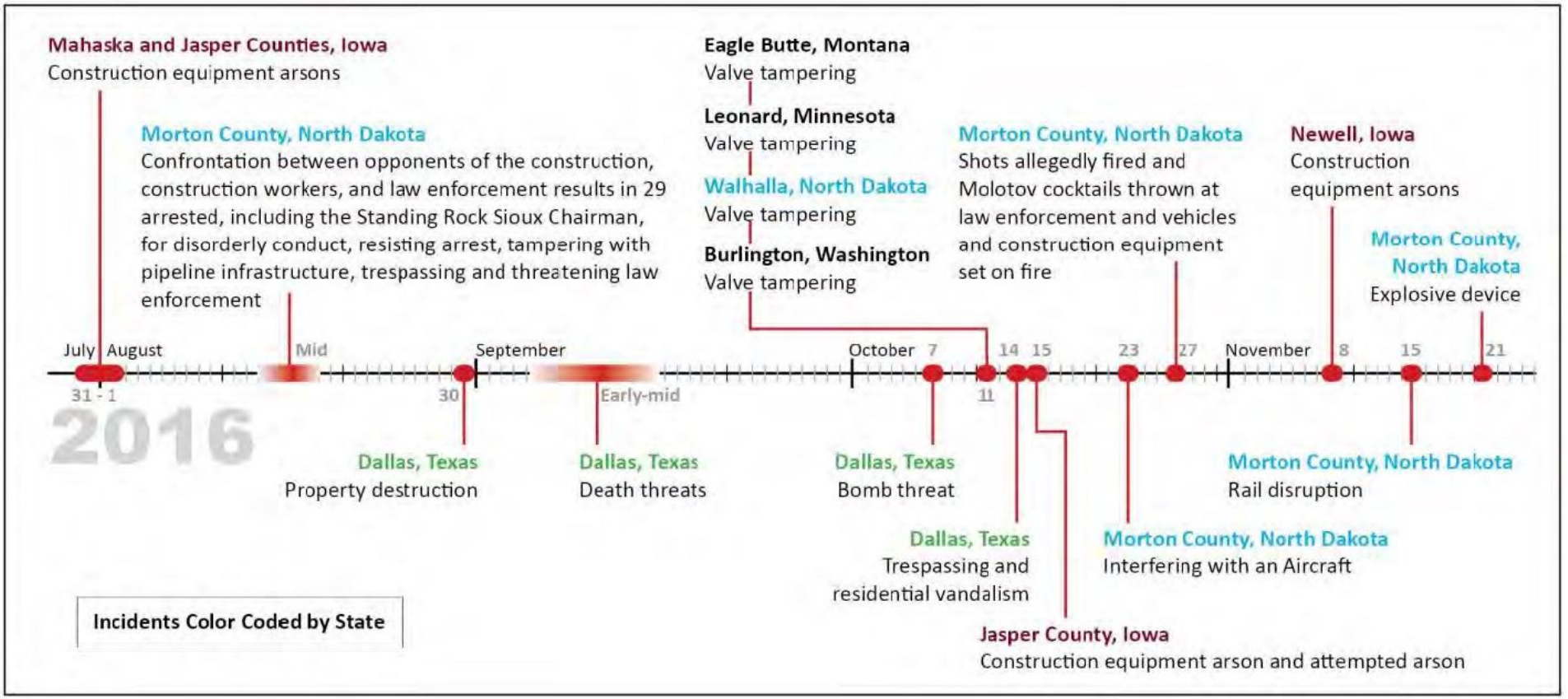
IRS
- Diesel Fuel Penalty

State
- Air Quality - Vapor Recovery
- Pump Labeling

This is not a comprehensive list of waivers but an example of the many types that can be requested.

Industry Focus Areas

Focus: Pipeline Security



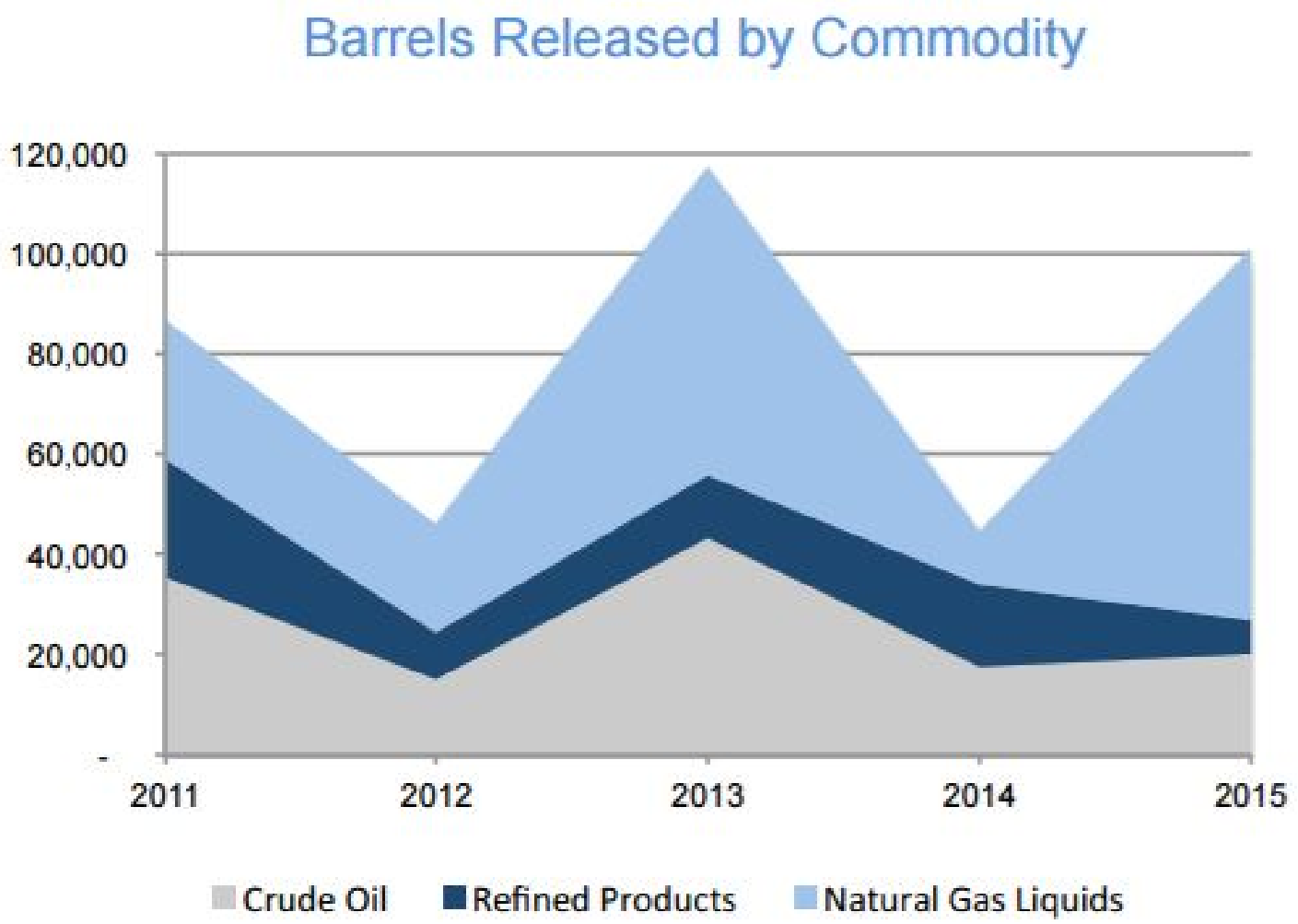
Focus: Integrity Management

- API RP 1176 – Assessment and Management of Cracking in Pipelines
- API RP 1160 – Managing System Integrity for Hazardous Liquid Pipelines
- API Technical Report 1178 – Data Management and Integration Guideline
- API Technical Report 1179 – Guidelines for Use of Hydrostatic Testing as an Integrity Management Tool

Focus: Safety

- 99.999% by volume safety rate of pipelines (FERC and PHMSA data)
- Crude by rail has a 99.99% by volume safety rate (American Association of Railroads)
- Shipment of crude by rail has decreased by 60% to PADD 1 (58,653 mbbl in 2016 vs. 143,973 mbbl in 2014; EIA Data)

Focus: Safety



Focus: Safety Management System

- API RP 1173 – Pipeline Safety Management Systems
  - Leadership Commitment
  - Stakeholder Engagement
  - Risk Management
  - Operational Controls
  - Incident Investigations and Learnings
  - Safety Assurance
  - Management Review and Continual Improvement
  - Emergency Preparedness and Response (RP 1174)
  - Competence and Training
  - Documentation and Recordkeeping
  - Safety Culture

Focus: Public Awareness

- API Recommended Practice 1162 – Public Awareness Programs for Pipeline Operators
- Inland Educational Leaflets
- First Responder Engagement

Focus: First Responder Engagement

- Emergency Responder Forum
  - Biannual meeting
- Conferences:
  - API Pipeline Conference
  - International Oil Spill Conference
  - International Association of Fire Chiefs (IAFC)
  - National Association of State Fire Marshals (NASFM)
  - National Volunteer Fire Council (NVFC)
  - Clean Waterways

Spill Impact Mitigation Assessment

- Spill Impact Mitigation Assessment (SIMA) is currently in draft form and in Industry will replace Net Environmental Benefit Analysis (NEBA)
- Will be published under API, IPIECA, and IOGP logos
- Expected finalization by late summer

Questions/Discussion

Colin M. Frazier
Policy Advisor – Midstream and Industry Operations
American Petroleum Institute
1220 L Street, NW | Washington, DC 20005
Office (202) 682-8186
FrazierC@api.org