

# U.S. Natural Gas Industry Overview

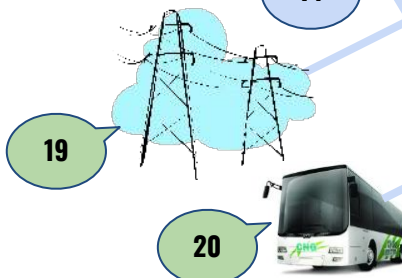
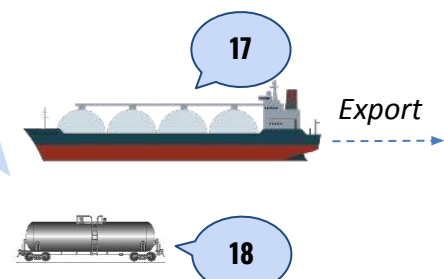
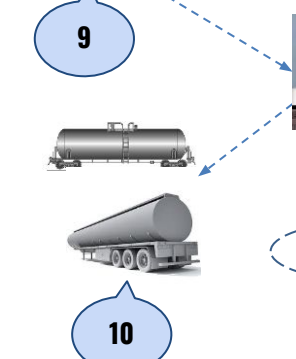
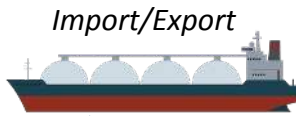
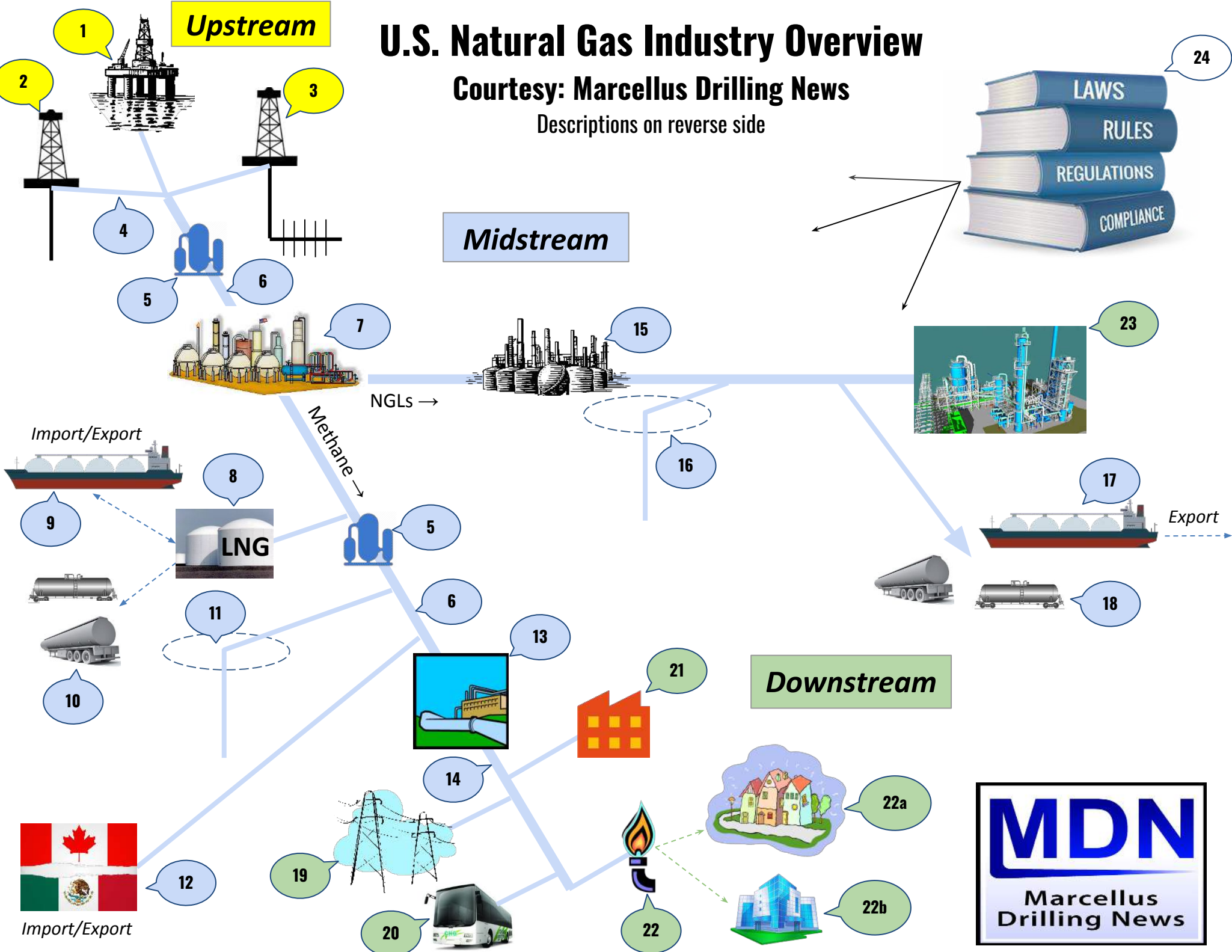
Courtesy: Marcellus Drilling News

Descriptions on reverse side

## Upstream

## Midstream

## Downstream



## Upstream

### *Exploration & production (supply)*

1. **Offshore** oil and gas drilling
2. **Conventional** (vertical) onshore oil and gas drilling
3. **Unconventional** (horizontal) onshore oil and gas drilling

## Midstream

### *Transportation & storage*

4. **Gathering pipelines** (small diameter) connect wells to transmission lines
5. **Compressor stations** along gathering and transmission lines pressurize gas to move it along
6. **Transmission pipelines** (large diameter) flow gas over longer distances
7. **Cryogenic processing plant** separates methane from natural gas liquids (NGLs), sending NGLs to a fractionation plant for further separation
8. **LNG (liquefied natural gas) liquefaction** (export) and **regasification** (import) facilities, draw from or add to domestic supplies
9. **LNG vessels** ship product to or from the U.S.
10. **Trucks** and **rail cars** transport LNG to domestic customers
11. **Underground storage** injected during lower-demand summer months and retrieved during peak-demand winter months
12. **Border pipelines** with Canada and Mexico; imports and exports to Canada, exports only to Mexico
13. **Citygates**, the regulating stations where utilities and other large customers source their gas supplies
14. **Distribution main** pipeline, coming from the citygate
15. **Fractionation plant** used to further separate NGLs into their separate components - ethane, propane, butane, isobutane and condensate
16. **Storage**, typically underground caverns, used to store NGLs until they are needed by customers (e.g. ethane for petrochemical plants; propane for heating)
17. **NGL vessels** ship product overseas
18. **Truck** and **rail** carriers to transport NGLs to domestic customers

## Downstream

### *End user customers (demand)*

19. **Electric generating** power plants
20. **CNG (compressed natural gas) fueling stations** for fleets or public
21. **Large industrial customers** which often buy gas directly from the pipe
22. **LDCs** (local distribution companies), local gas utilities that distribute via pipeline networks to...
  - a. **Residential** natural gas customers, and
  - b. **Commercial** natural gas customers
23. **Petrochemical plants** “crack” ethane into ethylene and produce a myriad of other plastic products

## Government

24. **Government oversight**, a plethora of rules, regulations, laws and compliance measures created and administered by federal, state and local governments, applicable to all aspects of the natural gas industry

Please note this chart is a vastly simplified view of the complex natural gas marketplace.

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