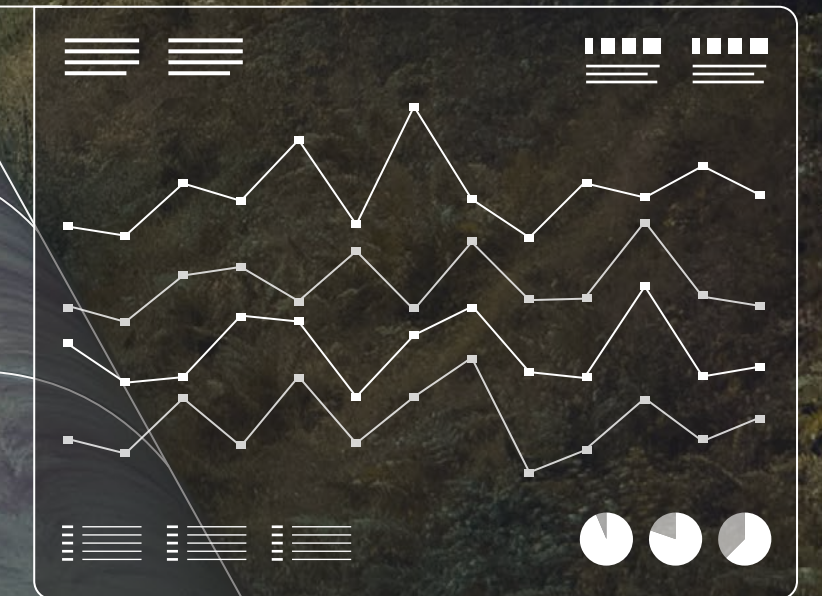
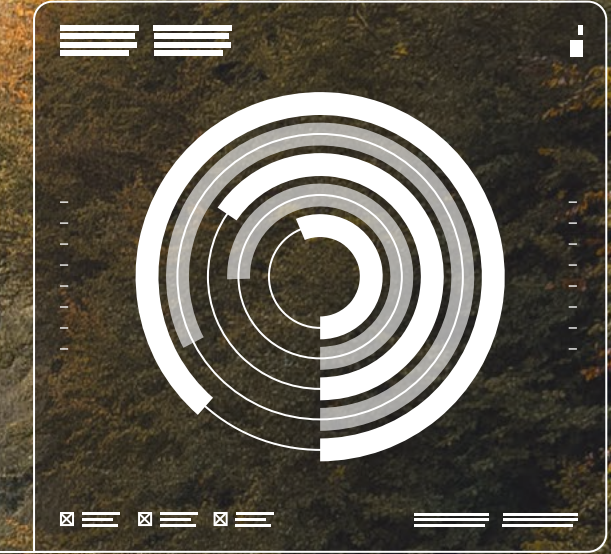
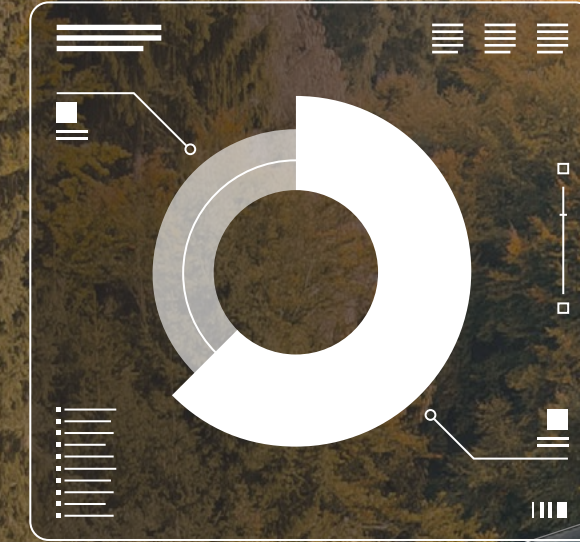




SURFACING THE SCIENCE: US PIPELINE OPERATORS

2023

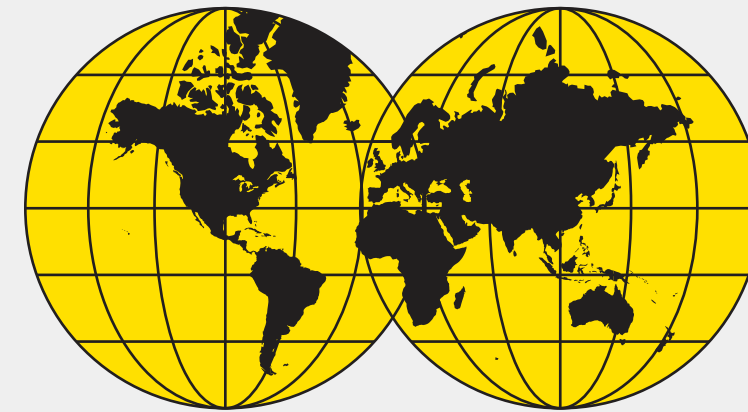




SURFACING THE SCIENCE: US PIPELINE OPERATORS

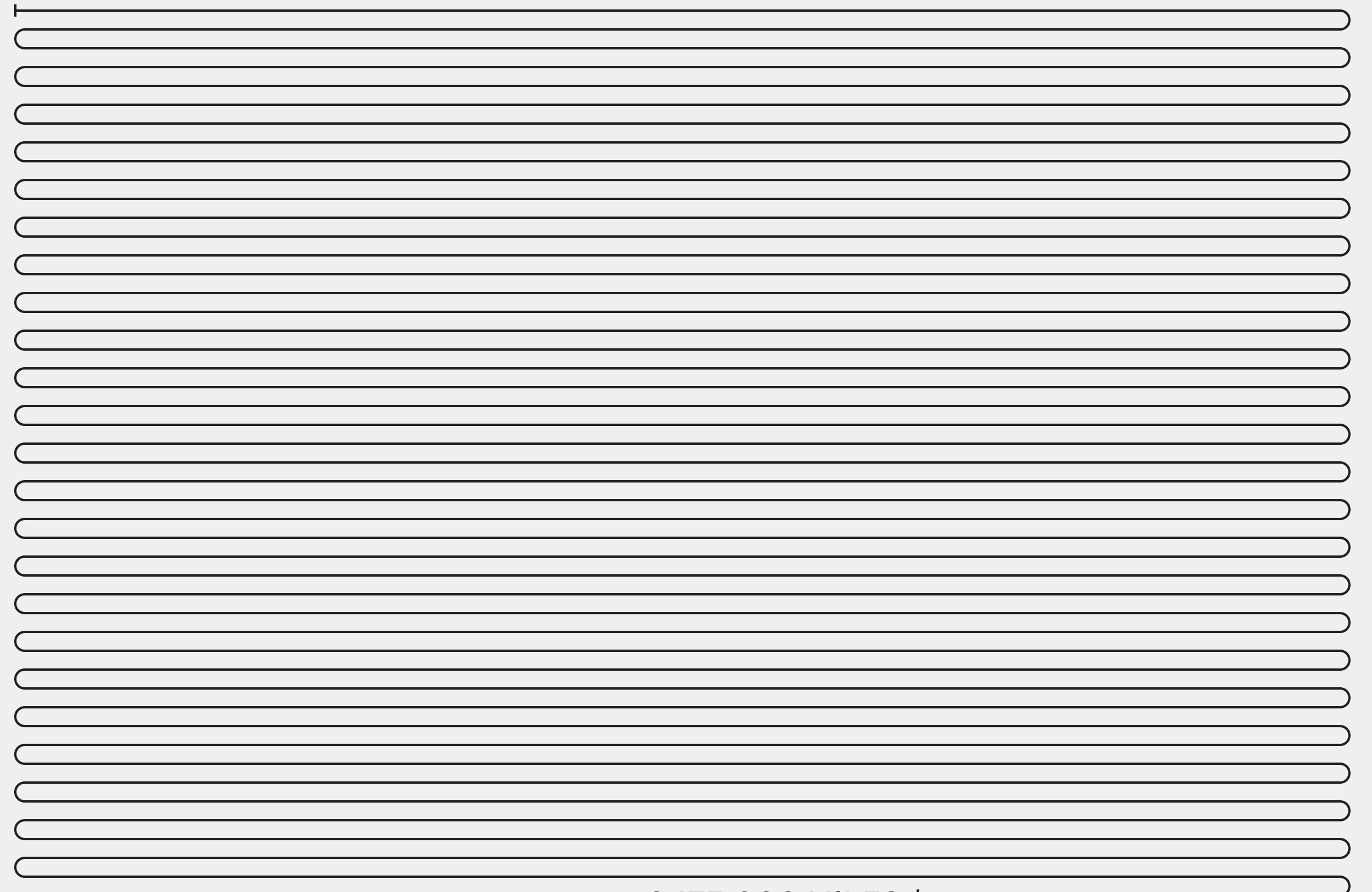
There are enough pipelines on the planet to wrap around the earth over **87** times (space.com), with **65%** of the planet's pipelines located in the US (worldatlas.com). Given this vast infrastructure, it's perhaps no wonder that when an accident happens it can have wide reaching and very expensive consequences. These are normally characterised by a pollution incident from a liquid pipeline, where hydrocarbons escape and can enter water courses which carry the pollutants for many miles and may cause extreme damage to the environment.

Alternatively, a gas explosion in a populated area can have devastating consequences for people and property. As an asset owner the purchase of liability insurance is key to managing these risks, and as an underwriter, there's never been a better time to use the huge amount of data we are able to access in order to accurately price for these volatile and complex risks. This will help ensure Inigo's longevity in the market and provide clients with a long term insurance solution.



There are enough pipelines on the planet to wrap around the earth over

87 TIMES



2,175,000 MILES

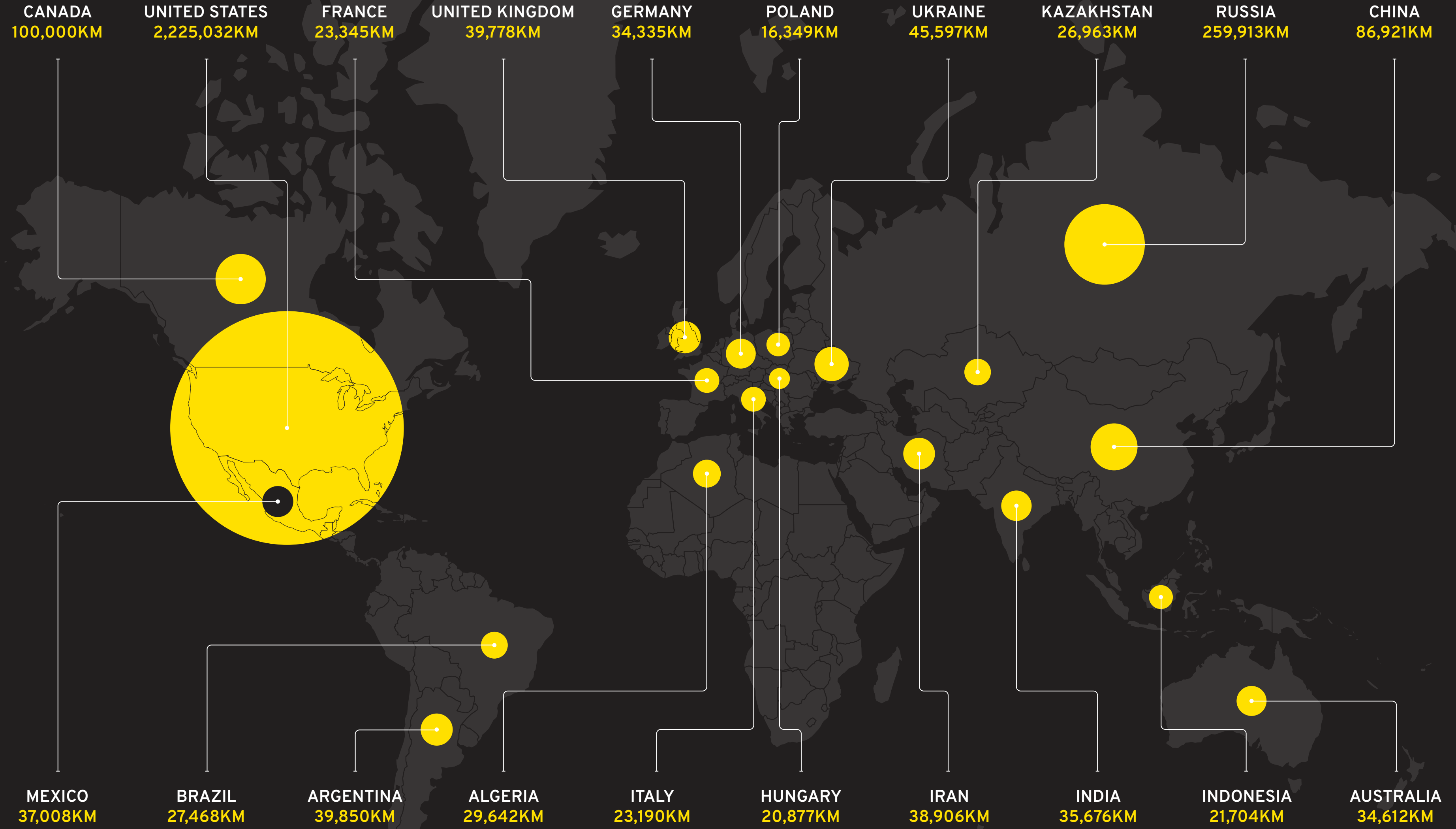


65%

of the planet's pipelines
are located in our target market

TOP 20 COUNTRIES BY LENGTH OF PIPELINE

- 01 United States
- 02 Russia
- 03 Canada
- 04 China
- 05 Ukraine
- 06 Argentina
- 07 United Kingdom
- 08 Iran
- 09 Mexico
- 10 India
- 11 Australia
- 12 Germany
- 13 Algeria
- 14 Brazil
- 15 Kazakhstan
- 16 France
- 17 Italy
- 18 Indonesia
- 19 Hungary
- 20 Poland





WHY USE PIPELINES?



EFFICIENT DELIVERY OF LARGE QUANTITIES

Pipelines are essential at moving large quantities of fuel both from offshore production assets, and onshore from areas of production to areas of fuel demand, which can often be many hundreds of miles apart.



REDUCING TRUCKS ON THE ROAD

Pipelines have the advantage of taking trucks off the road. From a liability perspective, this is a risky area in itself, with automobile liability making up a large portion of an energy underwriters' claims. By using pipelines, the number of trucks on the road can be significantly reduced.



ENERGY EFFICIENCY

Additionally, moving fuel by pipeline is much more environmentally friendly than moving it by other means, as the energy consumption of operating a pipeline is small. Fuel can be transported day and night at the same speeds, unaffected by weather conditions. Pipelines are often buried and out of sight, therefore invisibly transporting energy for hundreds of miles.

A HIGHLY COMPLEX INFRASTRUCTURE

Pipeline infrastructure is extremely varied which makes pricing these assets highly complex. Factors include:

- The assets aging over time
- Maintenance schedules vary between operators
- Different materials are used to construct pipelines
- The varied topography and type of product in the pipe makes pricing these assets highly complex
- The variability of environmental regulation
- Differences in third party exposure from state to state and between countries

With all of these factors, it's easy to see how tricky this area is to underwrite.



LEVERAGING DATA

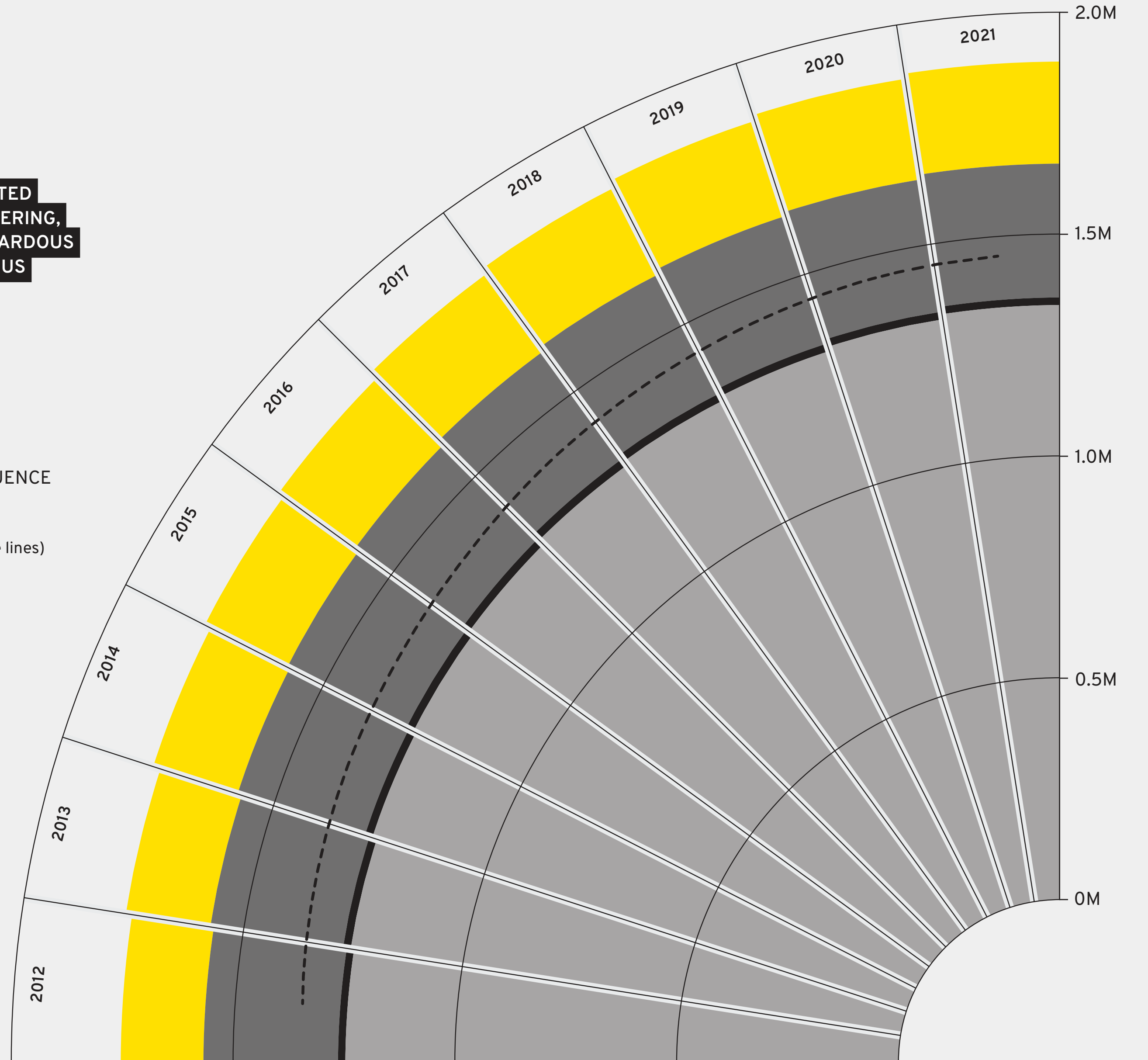
TO GAIN INSIGHTS INTO CLIENTS

Using publicly available data which is submitted by **4076 pipeline operators** to the US regulator, we are able to map and expose detailed information on all US regulated pipe.

MILEAGE OF ALL REGULATED
GAS DISTRIBUTION, GATHERING,
TRANSMISSION AND HAZARDOUS
LIQUID PIPELINES IN THE US

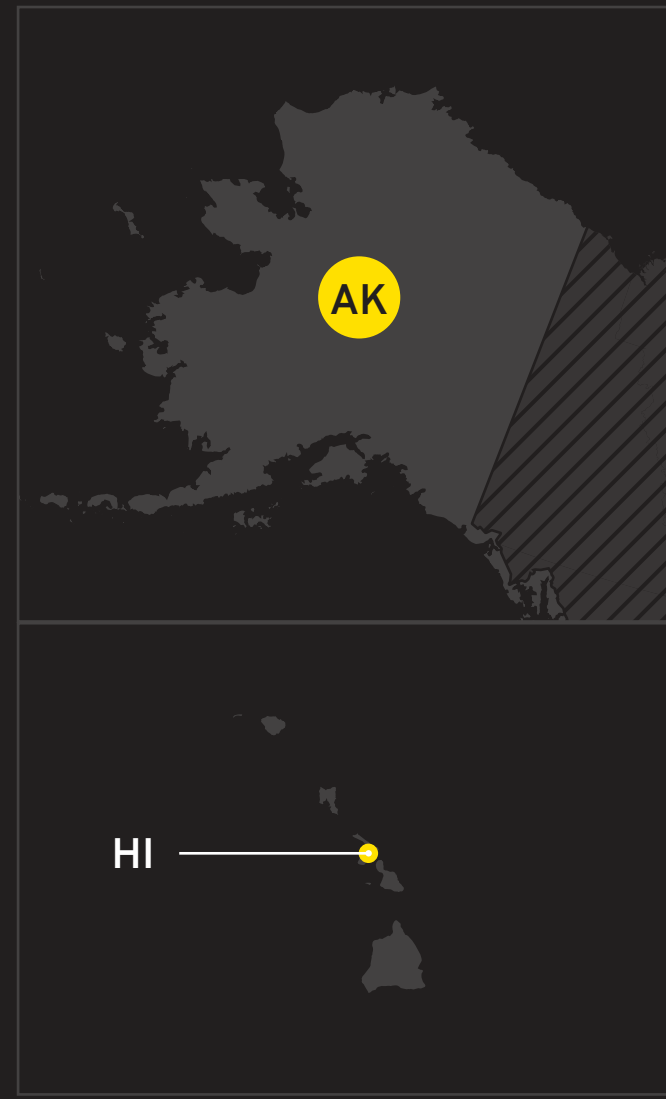
- GAS DISTRIBUTION
- GAS TRANSMISSION
- GAS GATHERING
- HAZARDOUS LIQUIDS
- TOTAL HIGH CONSEQUENCE AREA MILES

(excludes gas distribution service lines)

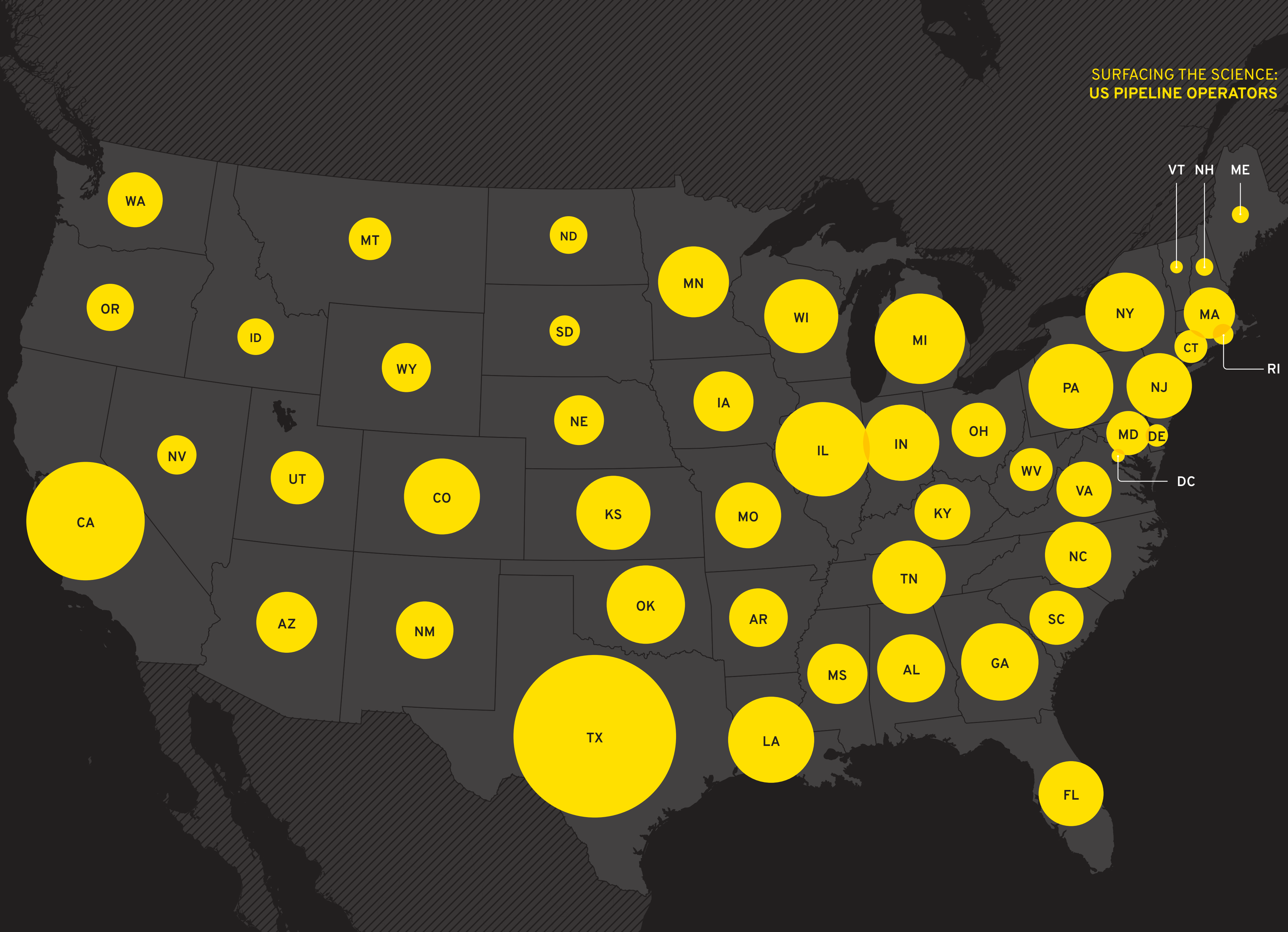




DISTRIBUTION OF PHMSA
REGULATED PIPELINES
ACROSS THE US



(excludes gas distribution service lines)

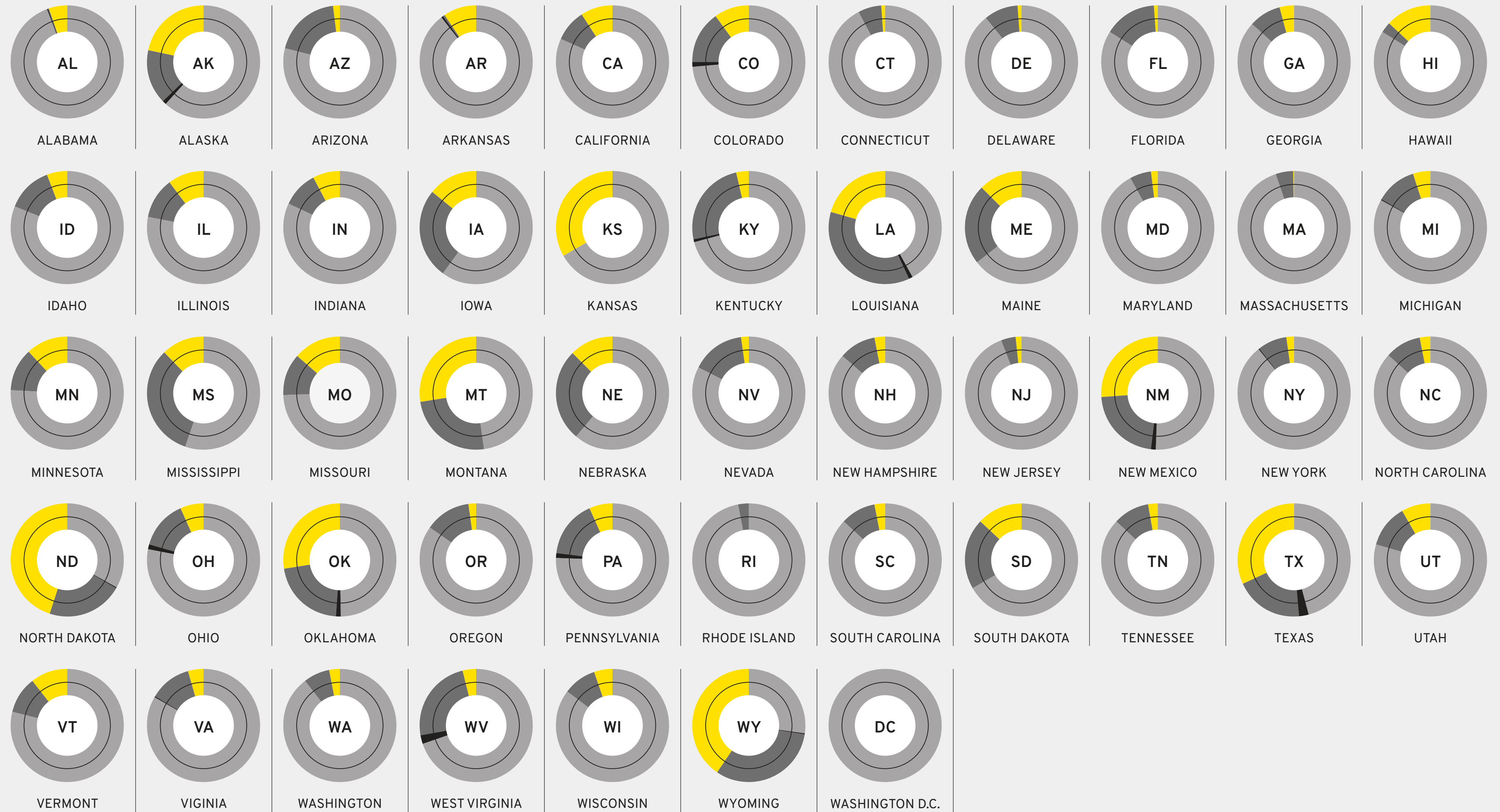




**TYPES OF PIPELINES
PER US STATE**

- GAS DISTRIBUTION
- GAS TRANSMISSION
- GAS GATHERING
- HAZARDOUS LIQUIDS

(excludes gas distribution service lines)



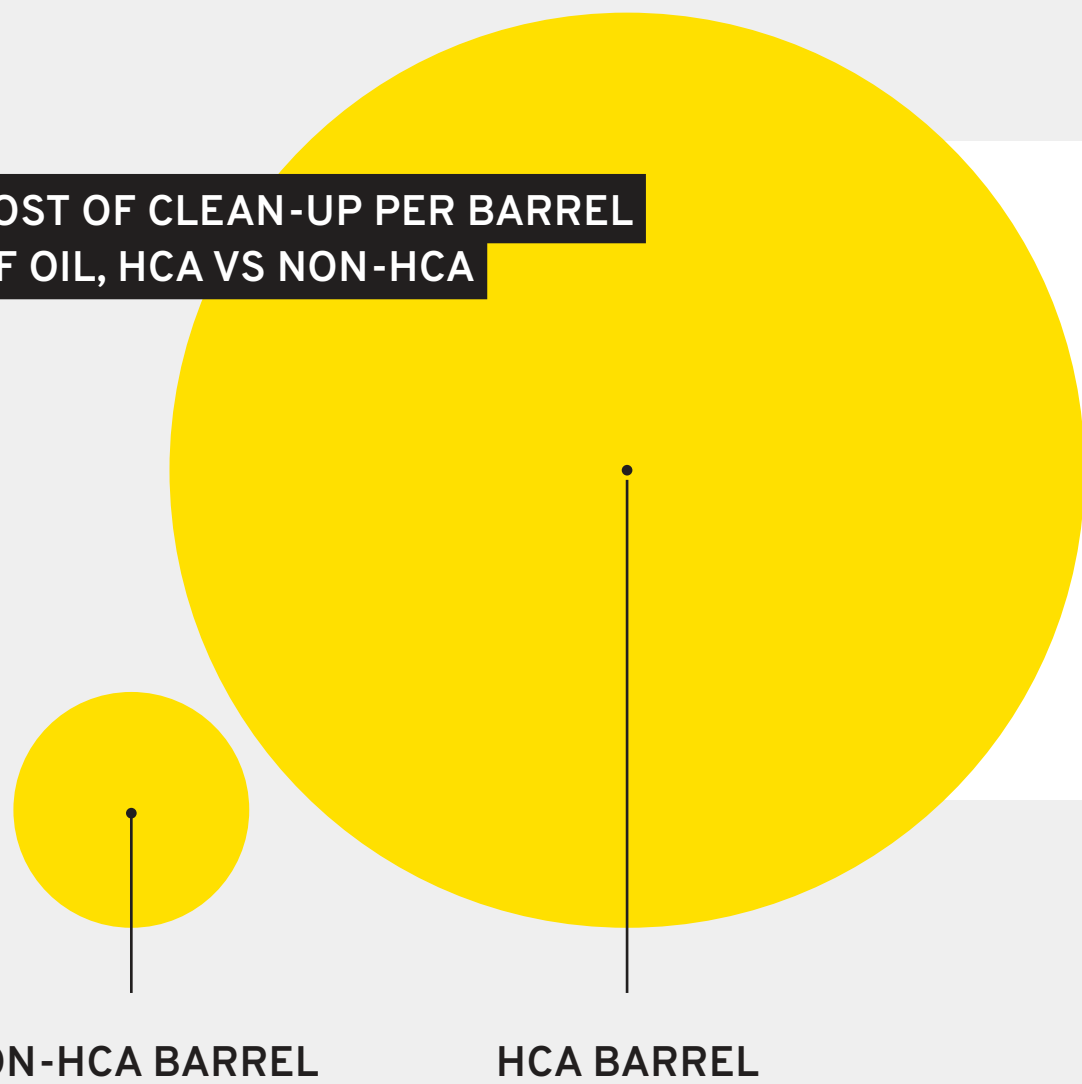


BUILDING A **BIGGER PICTURE**

By collating data for each risk we are able to build up a macro picture of the biggest risk factors as well as softer underwriting features, ranging from pigging (inspection) frequencies, type of material used to build the pipeline, product carried in the pipeline, date of construction, states crossed and third party interactions including water courses and residential areas. The key is then to match these up with relevant claim data to build up risk profiles for different types of pipe.

This has surfaced fascinating insights and quantified underwriting 'hunches', for example on average it costs around 16x more to clean up a barrel of oil in a High Consequence Area (HCA) than outside of an HCA. This is further compounded in California. When analysing states with more than 30 HCA spills since 2010, the data has indicated that it costs approximately 7x more per barrel in California than the other states.

COST OF CLEAN-UP PER BARREL OF OIL, HCA VS NON-HCA

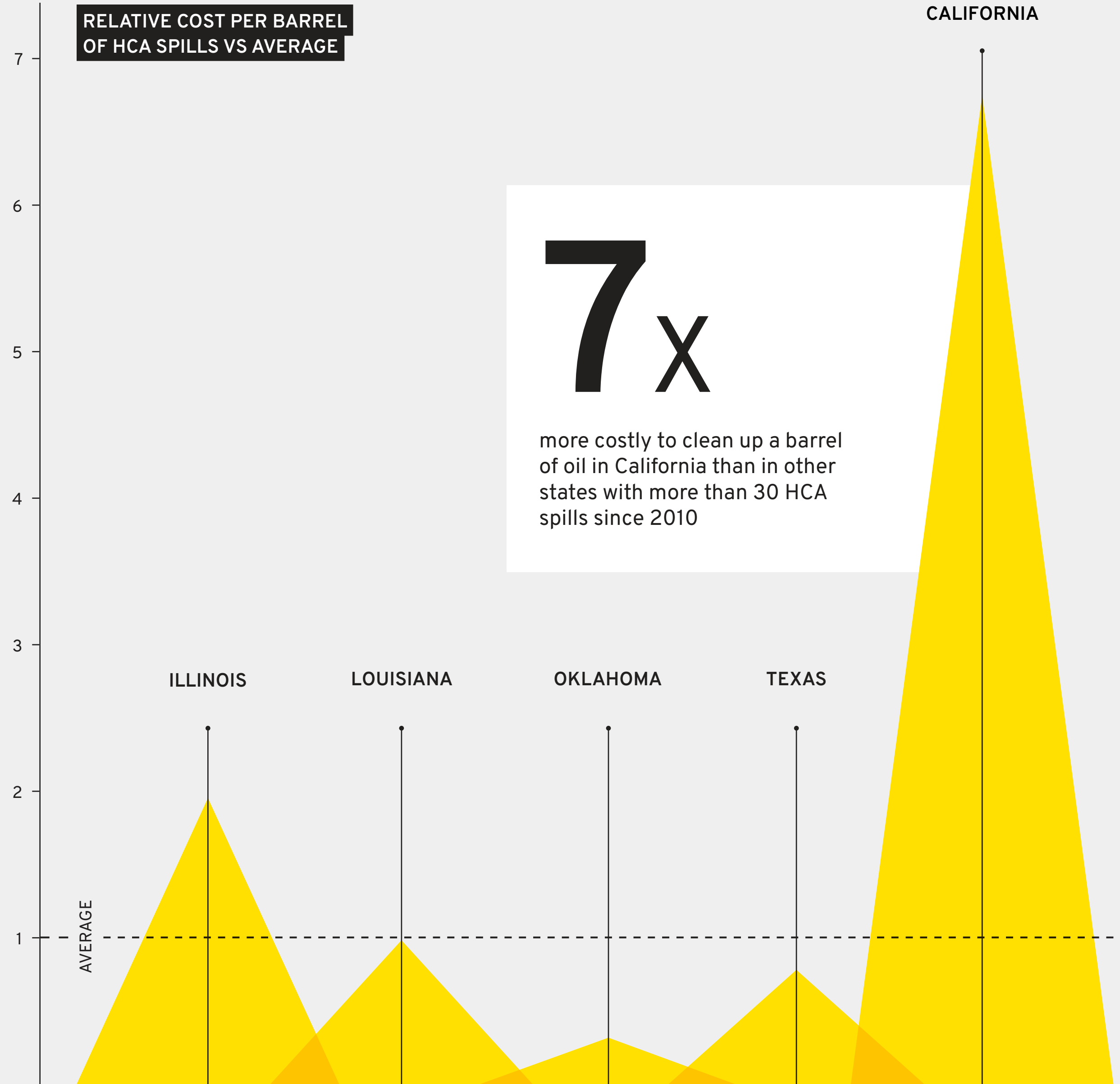


It is on average

1,500%

more costly to clean up a barrel of oil in a High Consequence Area (HCA)

RELATIVE COST PER BARREL OF HCA SPILLS VS AVERAGE



7x

more costly to clean up a barrel of oil in California than in other states with more than 30 HCA spills since 2010



ADDING VALUE

By having enhanced information ahead of client meetings, as well as the ability to contextualise exposures in relation to our insured's competitors, we are able to:



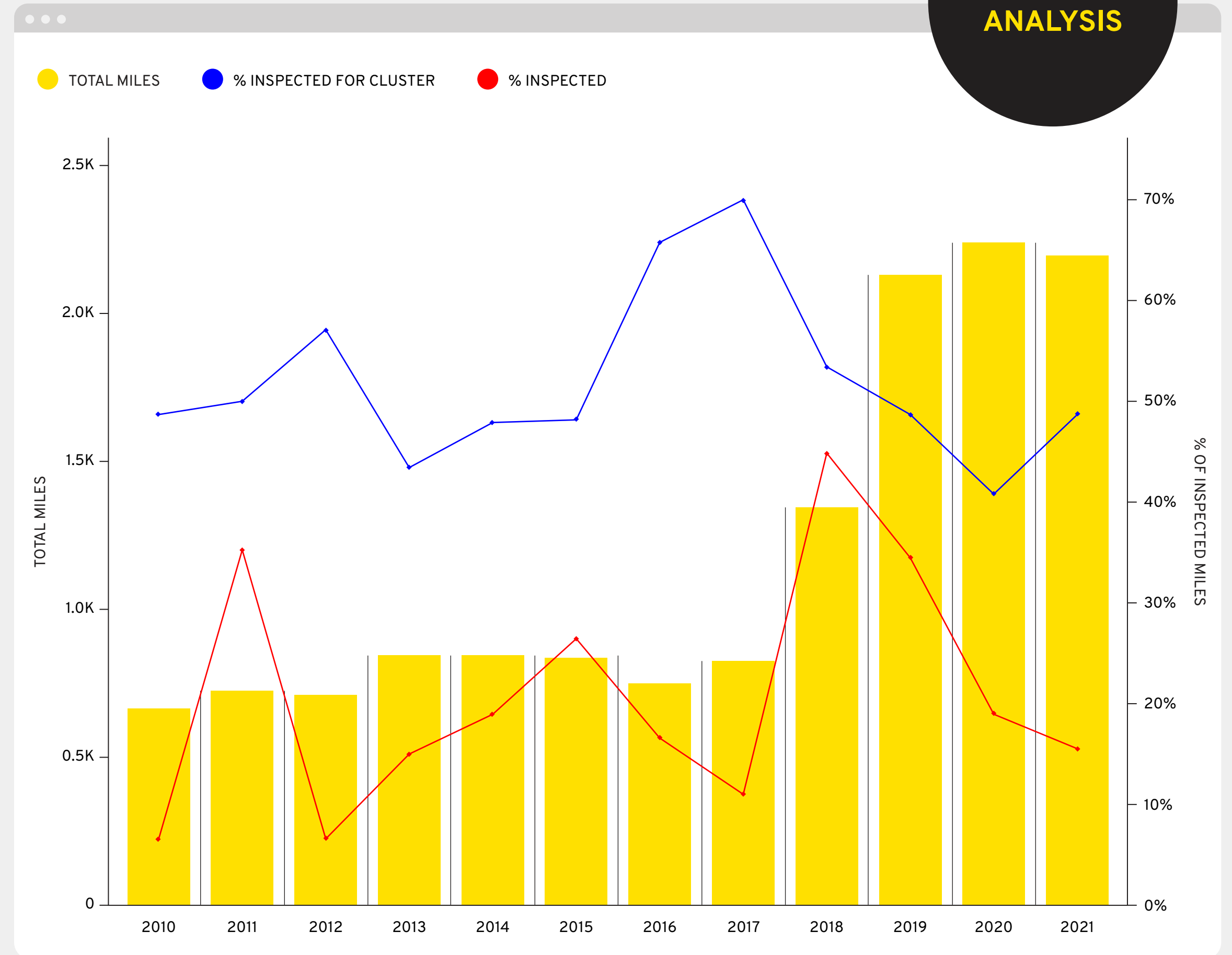
HOLD MORE MEANINGFUL MEETINGS WITH CLIENTS



ADD VALUE BY HIGHLIGHTING DIFFERENCES BETWEEN THEM AND THEIR PEERS

**AN EXAMPLE OF OUR CAPABILITIES:
INSPECTION RATES FOR AN OPERATOR
RELATIVE TO THEIR PEERS**

**OUR DATA
ANALYSIS**



I

WIN-WIN

WIN FOR OUR CLIENTS

For clients, this means we are able to offer an alternative quote to their existing pricing which is based on their unique risk factors. Their current pricing may previously have been driven by a small sample of risks that the lead underwriter has experience of, or an individual loss, rather than all US regulated pipeline data. We will therefore either be able to provide a quote where we may win business that the market has historically over-priced, and avoid business where the client already has an option that presents better value than the exposures they represent.

WIN FOR INIGO

For Inigo this is a great opportunity to expand our appetite into niche areas of the pipeline space that had been previously difficult to have certainty around pricing, e.g. high excess layers where return periods are more uncertain, which we therefore historically avoided.



By using a blend of **risk management data** and **factual historical evidence** from our dataset we are able to create a successful union between the art and science of underwriting which uses **micro scale management data** combined with thousands of data points from all US regulated pipelines.

We believe this is **unique in the market** and a **game changer** for pipeline asset underwriting.



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