SUSTAINALYTICS

SUSTAINALYTICS

SUSTAINABLE FINANCE SOLUTIONS

Second-Party Opinion on Transition Frameworks

About Sustainalytics

25 YEARS
of developing innovative solutions

35% MARKET SHARE
on sustainable bonds in 2019*

600
of the world's leading asset managers and pension funds

Green Bond Awards 2019 2018 Climate Bonds

Environmental Finance Sustainable Investment Awards 2019 Winner Best ESG research

Environmental Finance Sustainable Investment Awards 2019 Winner Best ESG data provider for investors

GlobalCapital THE VOICE OF THE MARKETS SRI Awards

IRI SURVEY INDEPENDENT RESEARCH in RESPONSIBLE INVESTMENT

- Understanding Transition Finance
- Sustainalytics' Approach to Transition Finance
- Sector Criteria for Steel and Natural Gas
- Q&A

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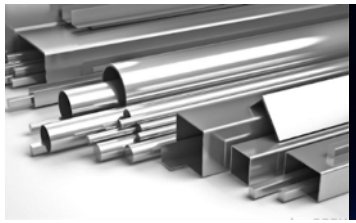
Transition Finance in Context

- According to climate models, achieving climate change mitigation ambitions as outlined in the Paris Agreement requires global decarbonization by around 2050.
- Green finance has experienced tremendous growth in recent years, focusing primary on activities/assets that offer solutions to climate challenges.
- However, achieve Paris Agreement will require the expansion beyond “green” to include investment in “hard-to-abate” activities that will incrementally shift toward green
- **Transition Bonds**
  - Finance activities/projects that contribute to the decarbonization of hard-to-abate activities along a trajectory that aims to align with the Paris Agreement
  - Targeted at carbon-intense sectors for which low-carbon solutions/technologies are generally not yet available at scale
  - Sustainalytics’ Transition Taxonomy focuses on six industries, to be released on a staggered basis:

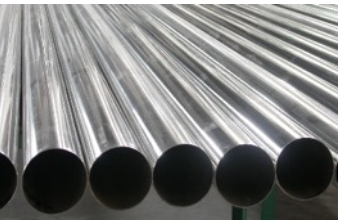

Steel


Natural Gas


Shipping

Aviation


Cement

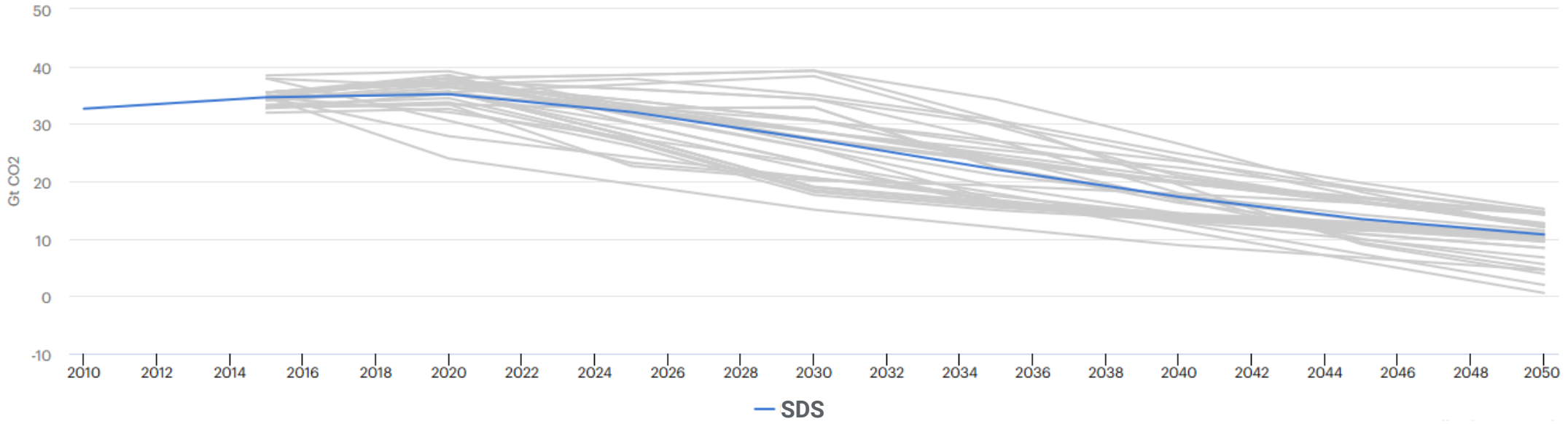

Aluminum

Understanding Transition

How to achieve the climate goals under the Paris Agreement

- The Paris Agreement sets out a global framework to limit global warming to below 2°C and to pursue efforts to limit it to 1.5°C
- This will require that the global economy transition to net-zero carbon emissions around mid-century
- Sustainalytics' Transition Taxonomy relies primarily on the International Energy Agency's Sustainable Development Scenario (SDS), which has developed pathways which are compatible with the aims of the Paris Agreement

GHG from the energy sector and industrial process:
A comparison of SDS 2019 with IPCC scenarios that produce a 1.5-1.6 °C temperature rise by 2100



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Sustainalytics’ Approach

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Defining Transition

- ***Transition is the decarbonization of economic activity – often incremental – along a pathway that is plausibly consistent with the economy-level goal of net-zero carbon by 2050***
  - This definition can apply to areas other than carbon, but our current focus is on decarbonization without compromising other environmental goals.

- While overarching climate goals are defined at the level of the economy, when it comes to use-of-proceeds debt instruments, ***eligibility is defined at the level of activities***

- ***Companies/issuers and their transition strategies are critical*** to the transition of activities

Principles for Transition Eligibility

1. Transition finance may be appropriate for activities that:
    - » Are inherently carbon-intensive
    - » Face major barriers to decarbonization (are “hard to abate”)
2. Eligibility should be anchored in *credible/plausible decarbonization pathways*
3. Eligibility should be based on a systems approach
4. Transition uses of proceeds should follow the most *direct path toward decarbonization available*
5. Technology sometimes matters
6. A transition taxonomy and approach should be dynamic and evolving

Sustainalytics' Approach to Assessing Transition Bond Frameworks

Evaluating the alignment and credibility of a transition bond framework requires an assessment of both *issuance-level considerations* and *issuer-level considerations*.

ISSUANCE-LEVEL CONSIDERATIONS

a) Use of proceeds: Alignment of financed business activities and projects with Sustainalytics' transition eligibility criteria

b) Project evaluation and selection

c) Management of proceeds

d) Allocation and impact reporting

ISSUER-LEVEL CONSIDERATIONS

a) Alignment of the issuer's transition strategy and commitments with internationally established decarbonization pathways

b) Alignment of the use of proceeds with the issuer's strategy and implementation plan

Steel Production

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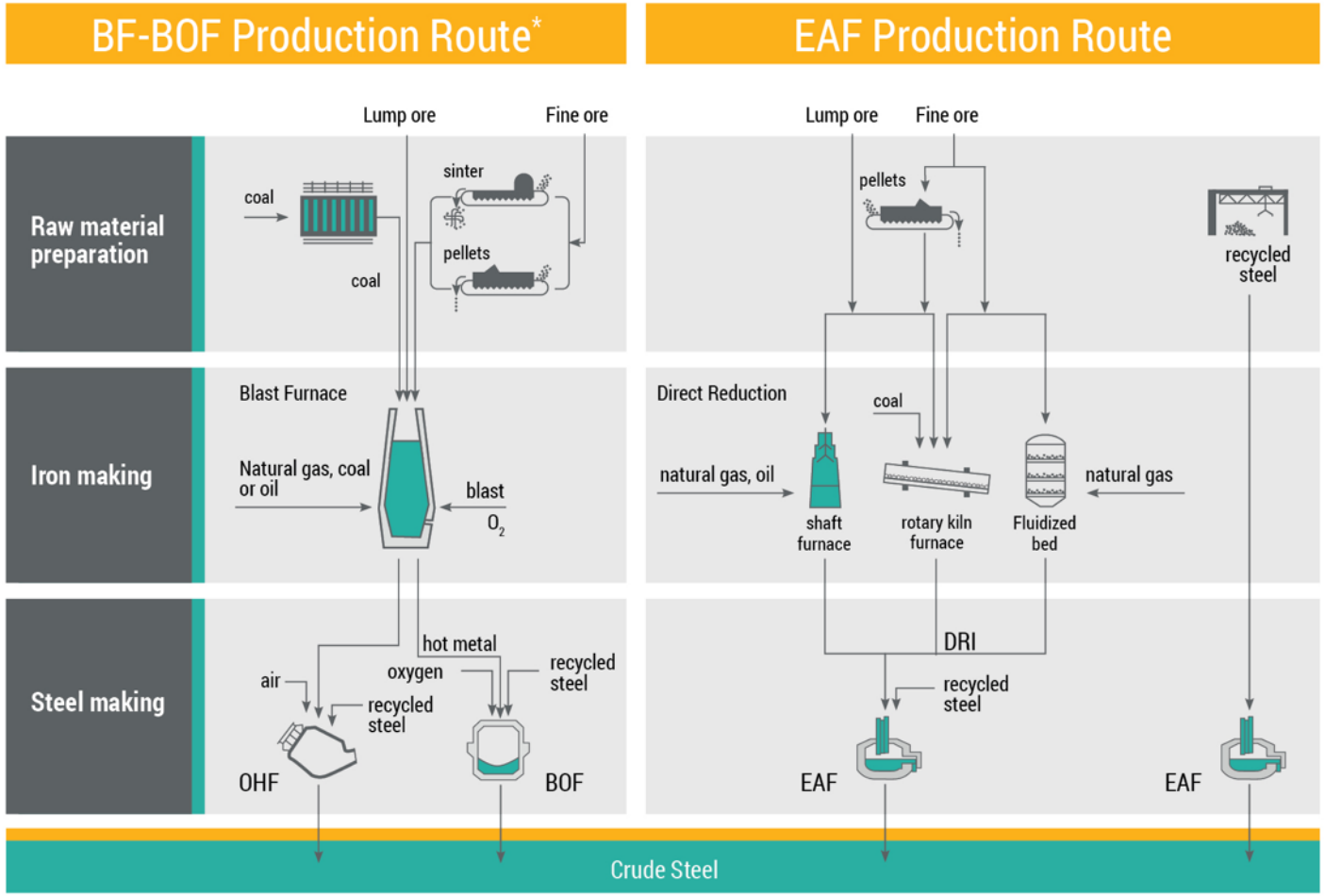
The Challenge of Decarbonizing Steel Production

- There are two major production routes:
  - Blast Furnace-Basic Oxygen Furnace (BF-BOF)
  - Electric Arc Furnace (EAF)
- Most steel is produced through BF-BOF (~72%), and many carbon-free technologies are not yet available at scale.
- Key opportunities to decarbonize steel production:
  - Energy efficiency
  - Materials efficiency
  - Low-carbon solutions (some of which have potential to achieve near-zero emissions)



** Eligibility subject to carbon intensity threshold for hot metal or crude steel production in line with credible emissions targets.*

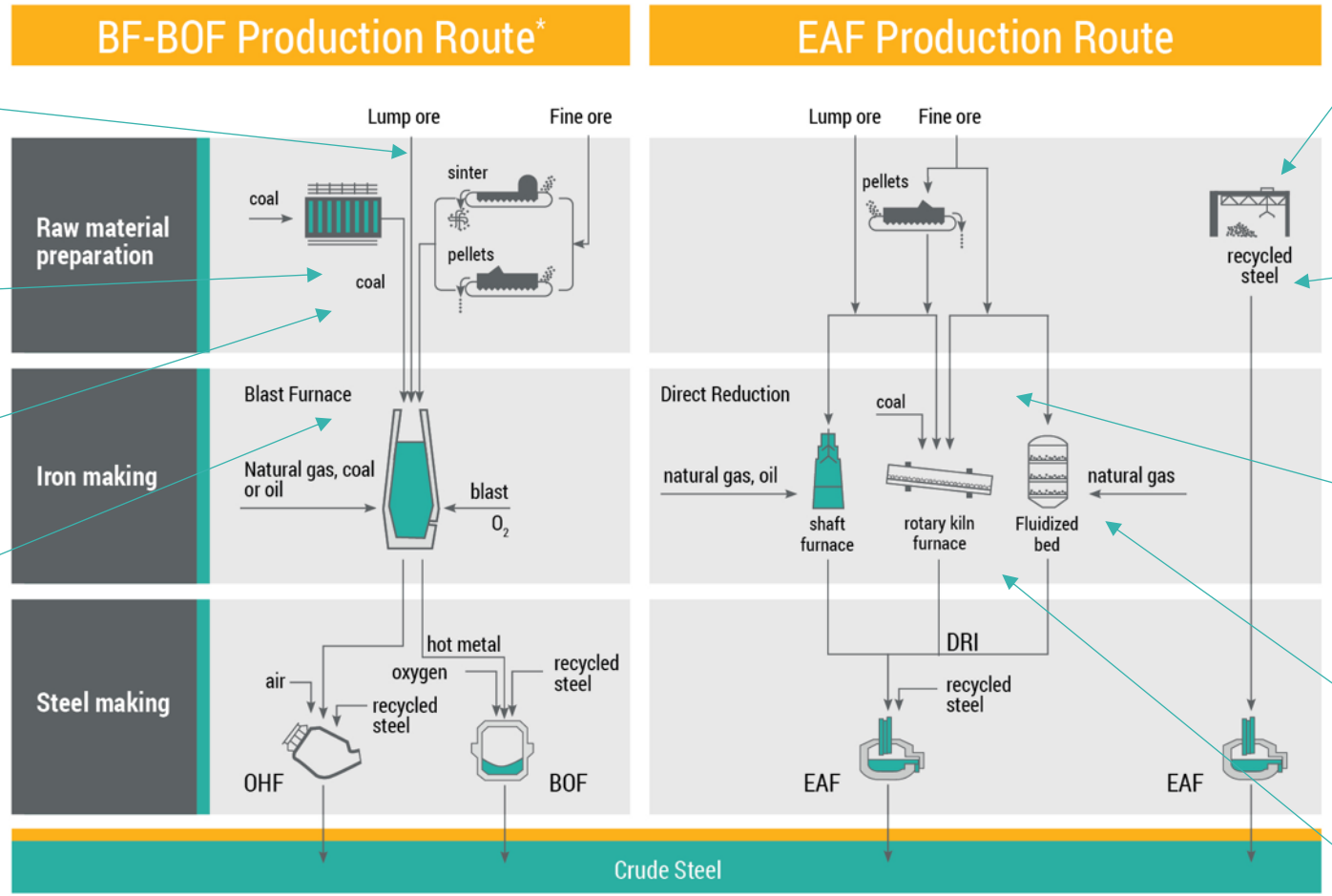
Steel: Potential Uses of Proceeds

Processes that eliminate pre-processing of iron ore, sinter / pellet production

BF-BOF with low-carbon feedstock, such as charcoal / biocoal

- Heat recovery system
- Waste gas reuse
- Pulverized coal / natural gas injection

BF-BOF carbon capture, incl. Top gas recycling blast furnace with CCS



** Eligibility subject to carbon intensity threshold for hot metal or crude steel production in line with credible emissions targets.*

Scrap steel and EAF

Scrap steel and EAF with low-carbon electricity

- Smelting Reduction (with CCS)
- Direct Electrolysis (with low-carbon electricity)

DRI-EAF using natural gas / biogas

DRI-EAF using hydrogen

** Eligibility subject to carbon intensity threshold for hot metal or crude steel production in line with credible emissions targets*

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Energy efficiency | Low-carbon solutions | Near-zero emissions technologies

Natural Gas

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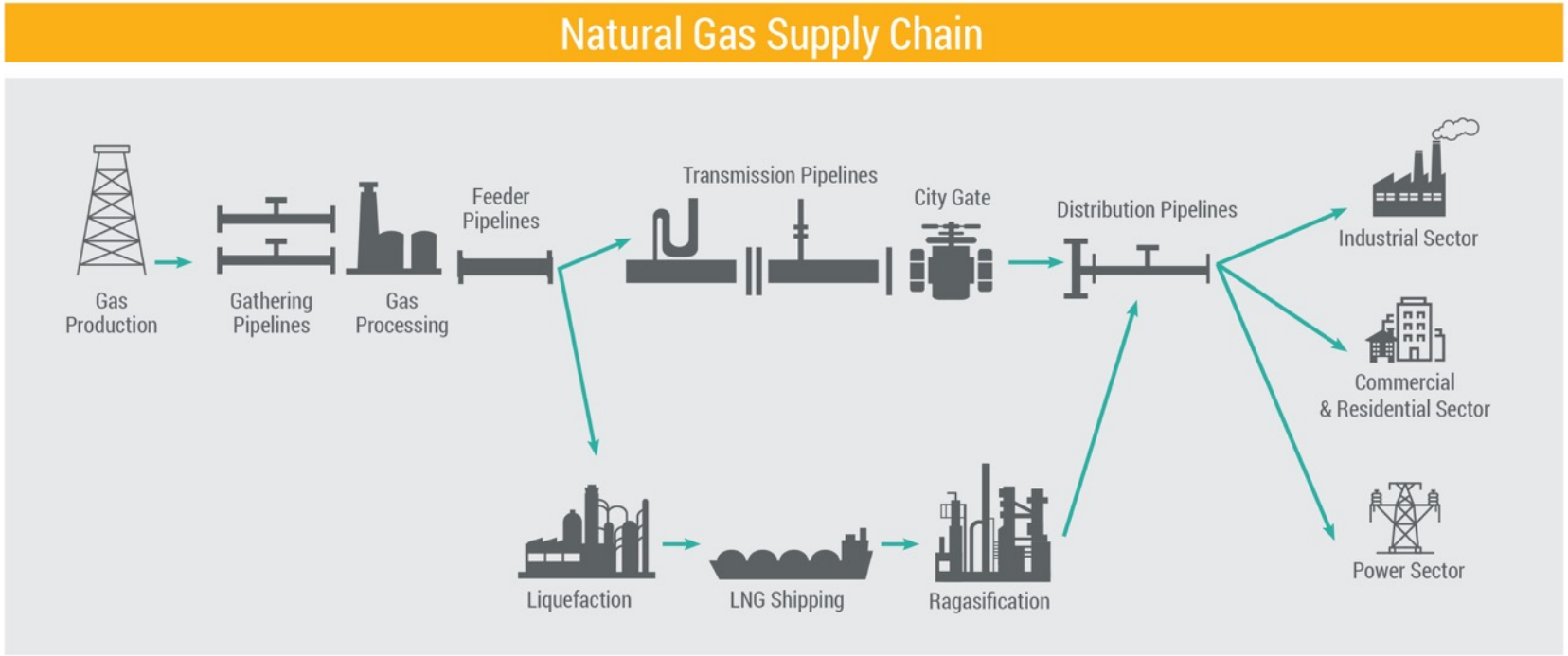
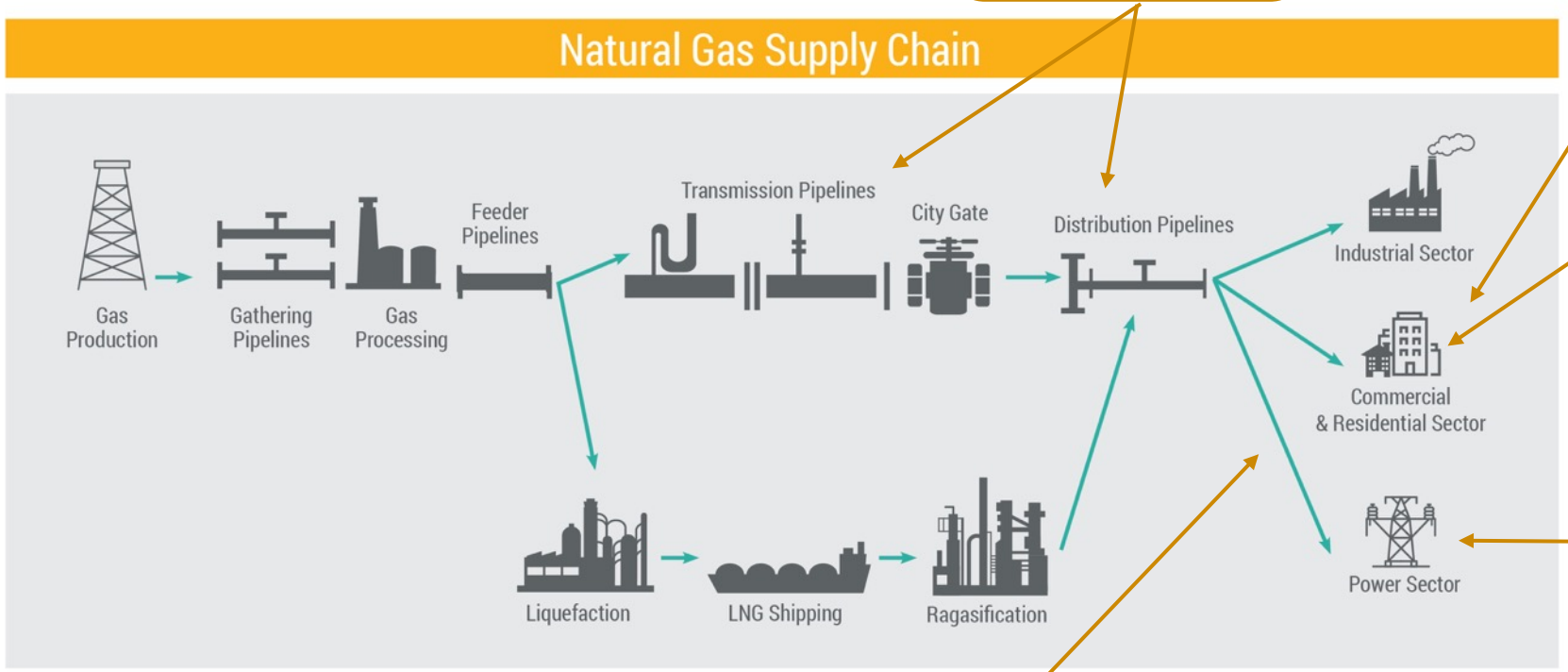
The Role of Natural Gas in the Energy Transition

- Natural gas has the lower direct emissions compared to higher-polluting (fossil fuel) sources, such as coal.
- It can support the integration or expansion of (variable) renewable energy.
- Natural gas infrastructure holds the potential to be 'repurposed' for zero- or low-carbon fuels.



Natural Gas: Potential Uses of Proceeds



Retrofit of gas T&D pipeline networks to reduce methane leakage and integrate (increase) blends of hydrogen and low-carbon gases

Maintenance and repair of gas fittings and gas-fired equipment to substitute coal-fired boilers and enhance energy efficiency or reduce gas leakage

Development and operation of district heating networks connected to gas-fired CHP unit (with CCS)

Production of electricity or co-generation of electricity and heating from gas (with CCS)

Installation of energy-efficient systems within the grid connecting gas-fired power plant (with CCS) and substation or network, upgrades to existing grid to reduce losses

Q&A

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