



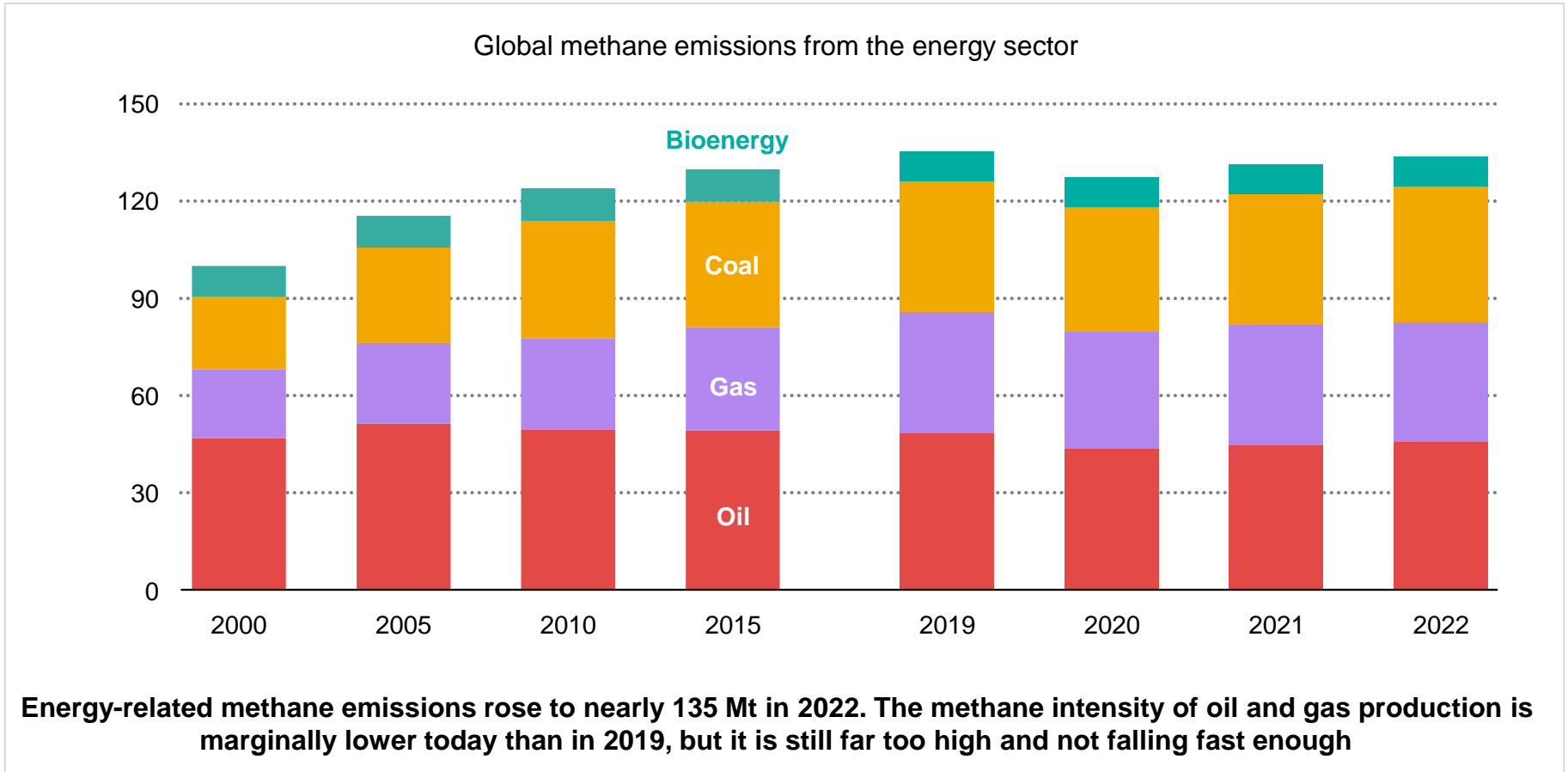
# Global Methane Tracker 2023

Methane Mondays

K.C. Michaels and Tomás Bredariol

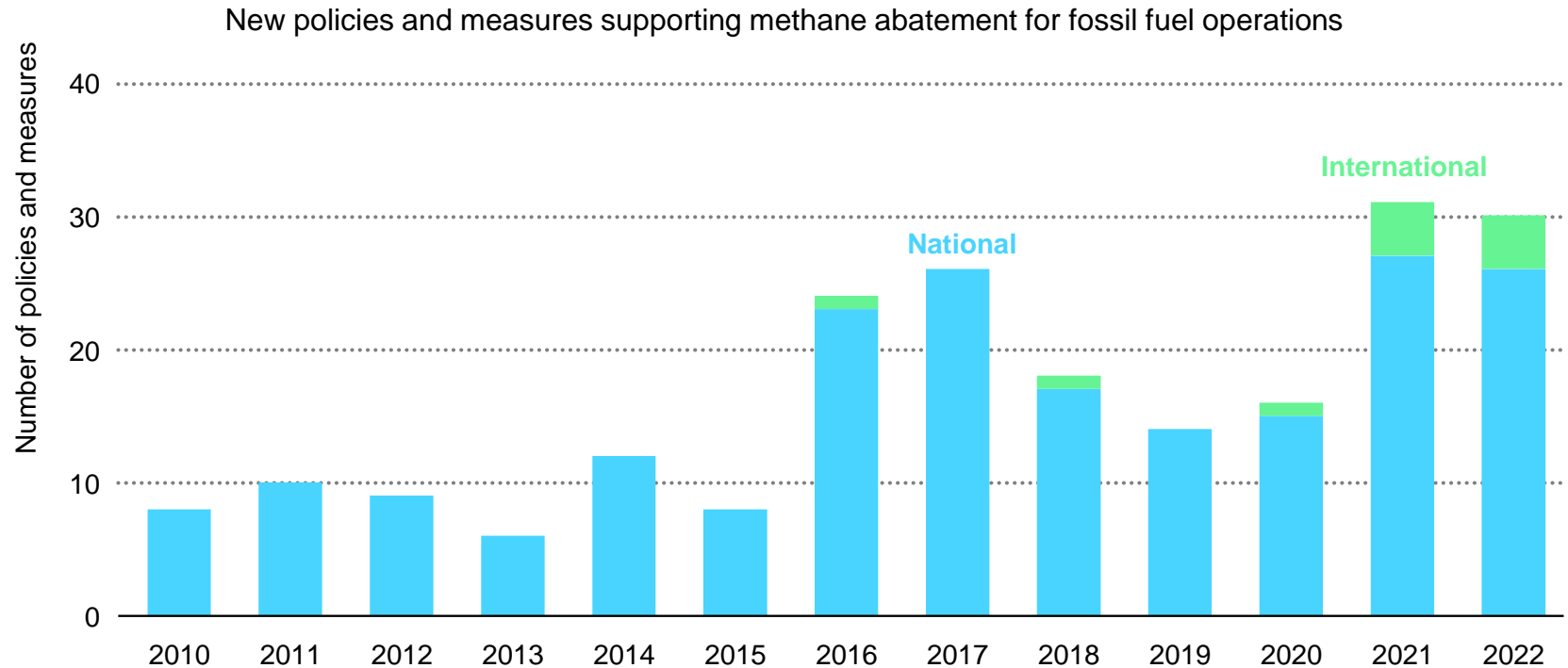
6 March 2023

# High gas prices in 2022 did not drive deep reductions in methane



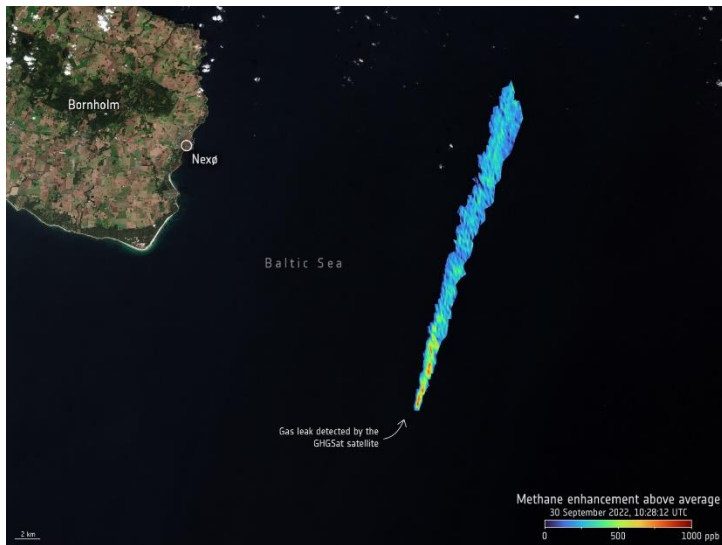
**Energy-related methane emissions rose to nearly 135 Mt in 2022. The methane intensity of oil and gas production is marginally lower today than in 2019, but it is still far too high and not falling fast enough**

# Methane action is gaining momentum, but needs to show results

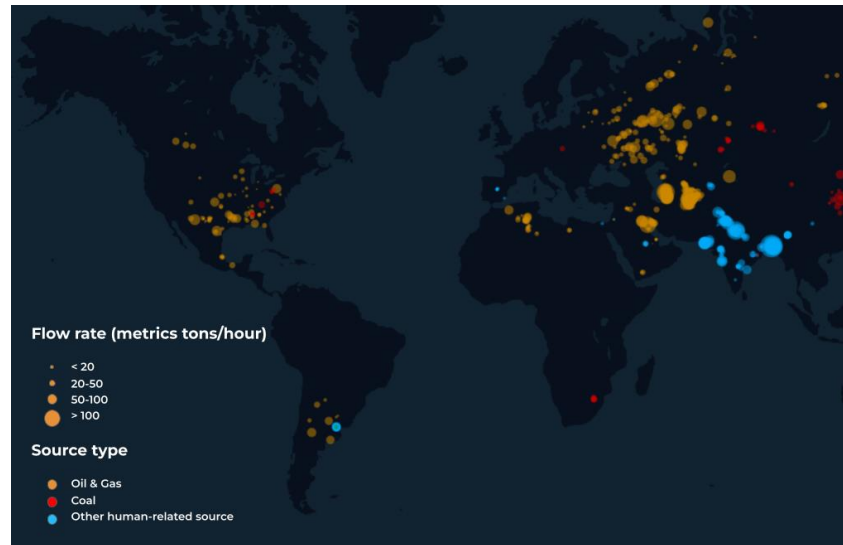


**Around 150 countries, representing 55% of methane emissions, have now signed the Global Methane Pledge. Fossil fuel producers need to step up and policy makers need to step in – and both must do so quickly**

## Nordstream leak and other super-emitting events, 2022



Source: GHGSat, 2022

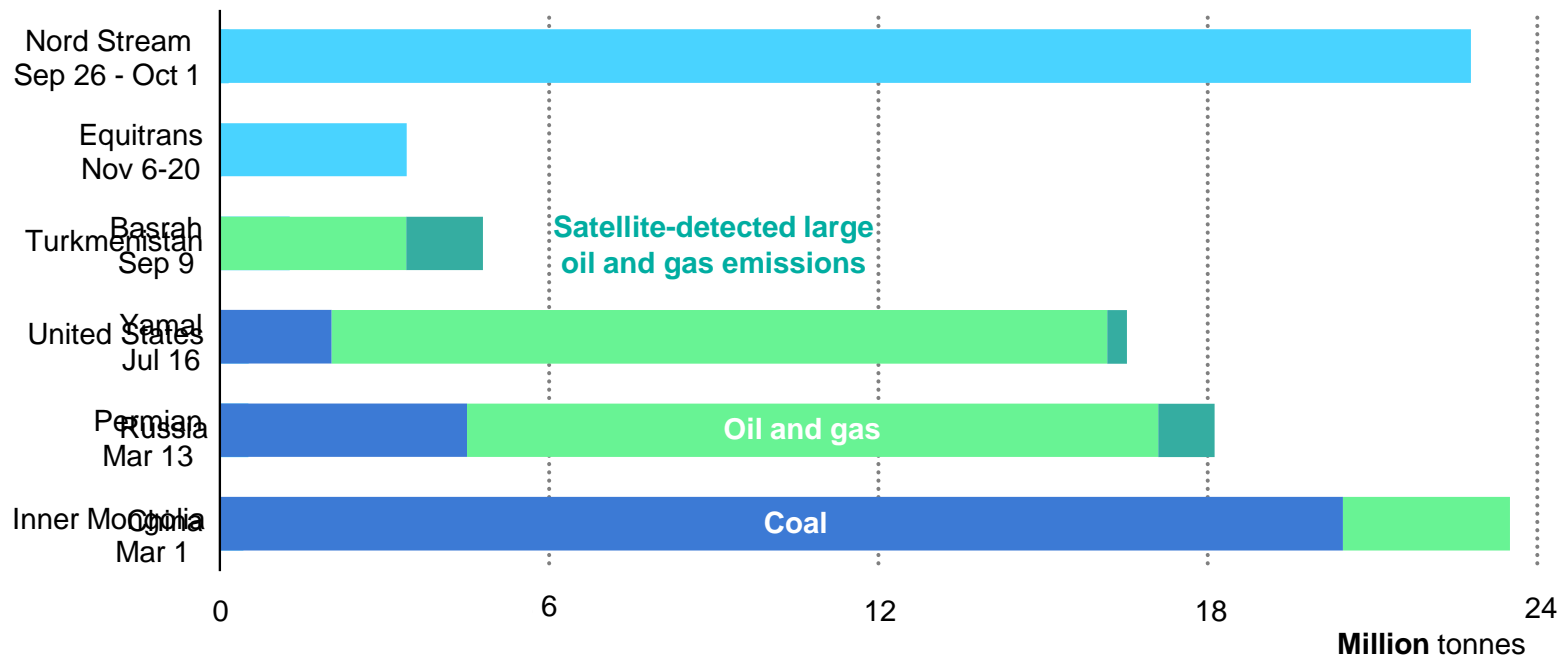


Source: Kayrros, 2023

**More than 500 super-emitting events were seen by satellites at oil and gas operations in 2022. Preventing and quickly addressing these very large leaks is a key opportunity to rapidly reduce emissions**

# Putting accidents and super-emitters into context

Methane emissions from oil and gas operations in selected countries and events, 2022

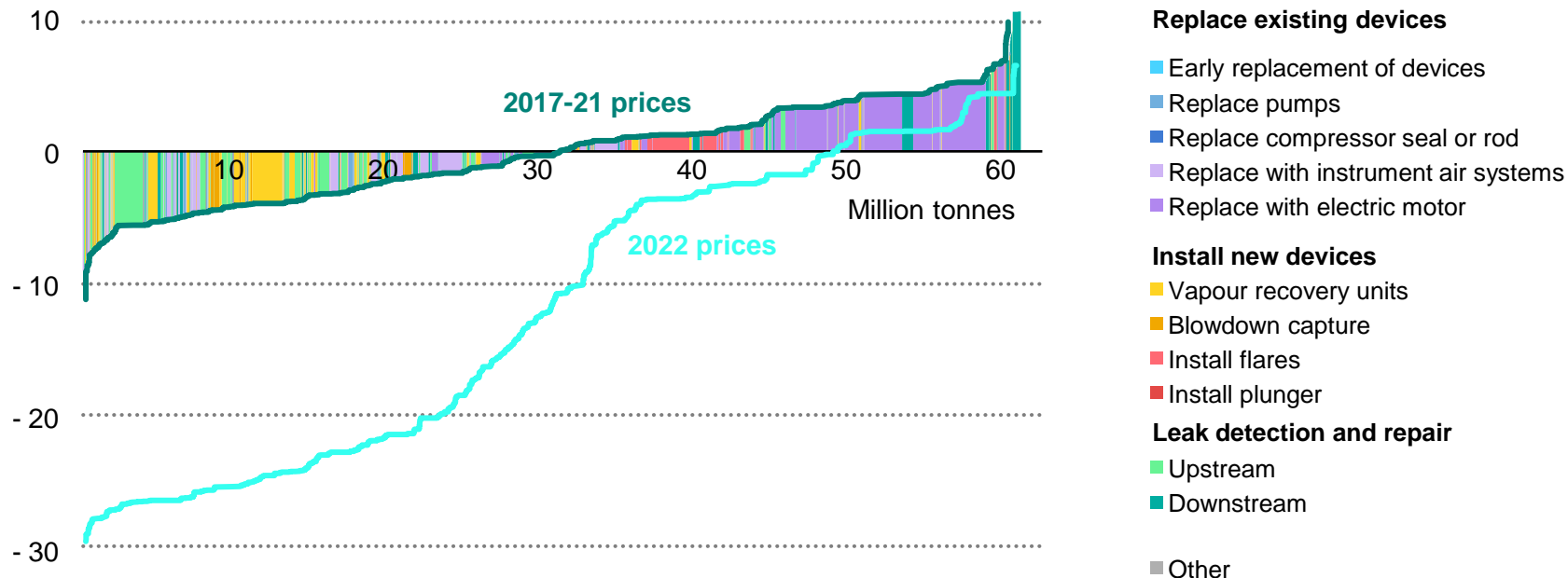


Source: IEA based on data from IMEO (2023), Kayrros (2023) and the Department of Environmental Protection of Pennsylvania (2022)

**The Nordstream pipeline explosion released a huge amount of methane**

# Cutting methane is one of the cheapest ways to limit near-term global warming

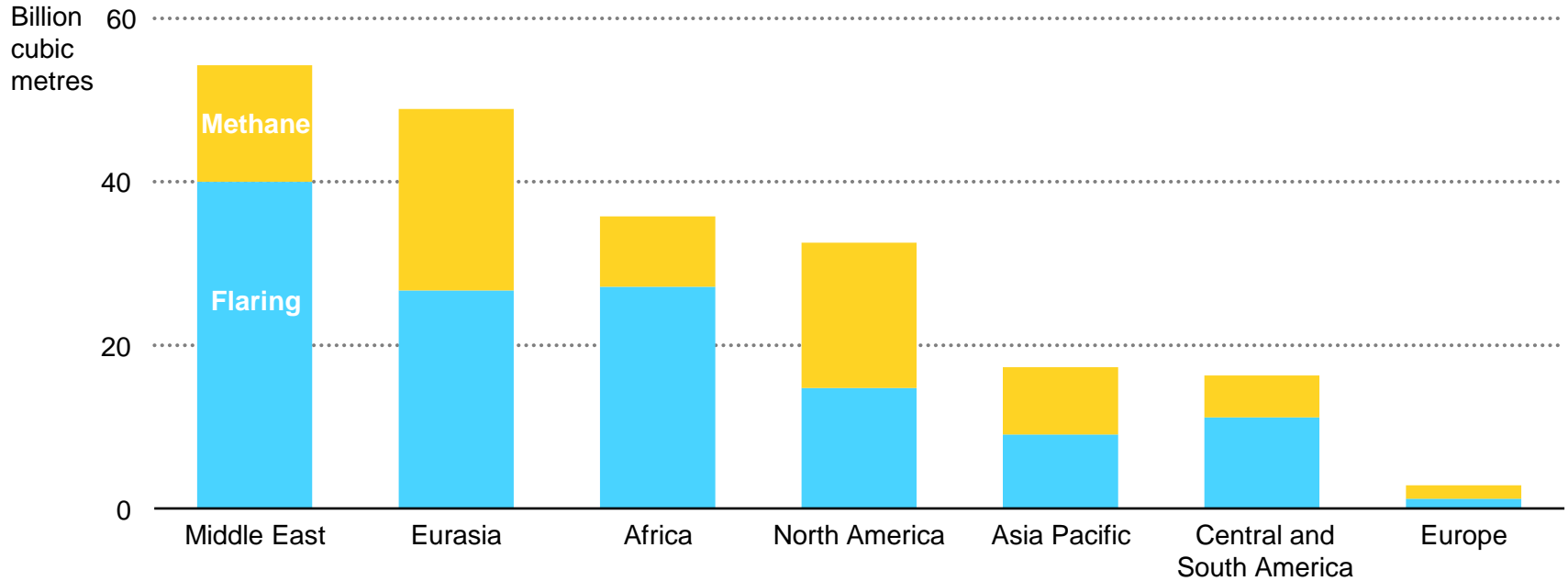
Oil and gas methane abatement cost curve at 2017-21 prices



**High prices in 2022 meant most abatement measures could have been deployed at no net cost. Less than 3% of the net income received by the oil and gas industry in 2022 would be enough to cut emissions by 75% to 2030**

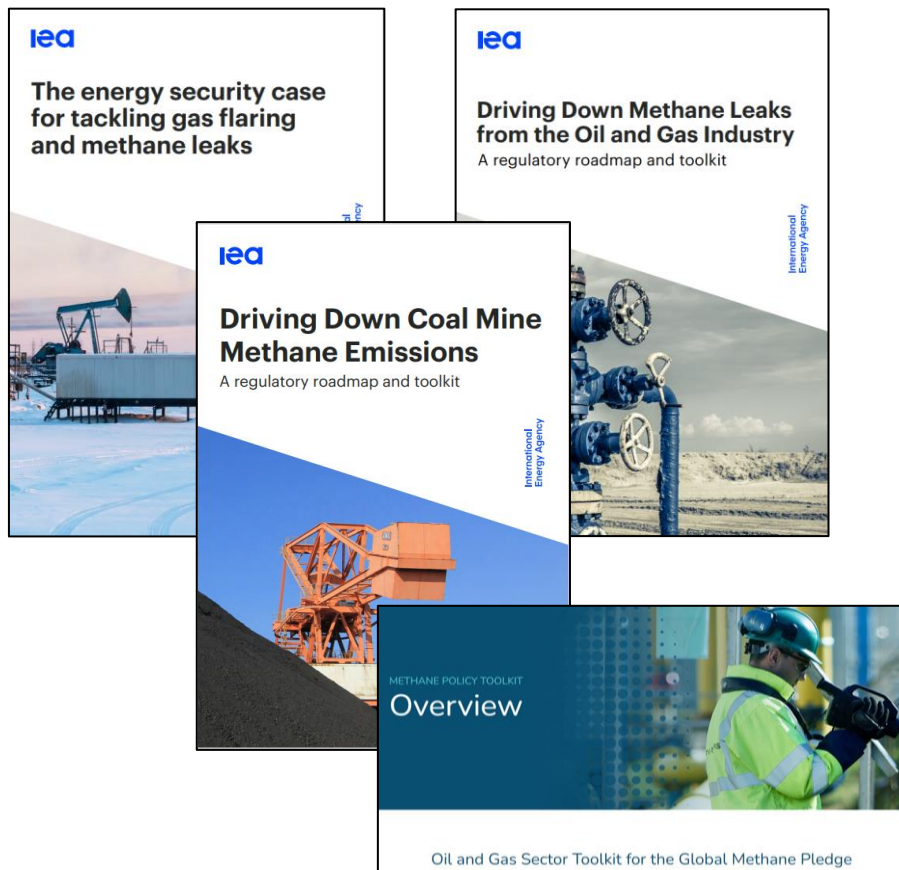
# Combined approaches can better tackle methane emissions & flaring

Potential additional gas supply from stopping all non-emergency flaring and curtailing methane emissions



Source: Flaring data from World Bank (2022)

**More than 200 billion cubic metres of natural gas could be brought to markets by stopping flaring methane emissions, more than the European Union's annual gas imports from Russia prior to the invasion of Ukraine**



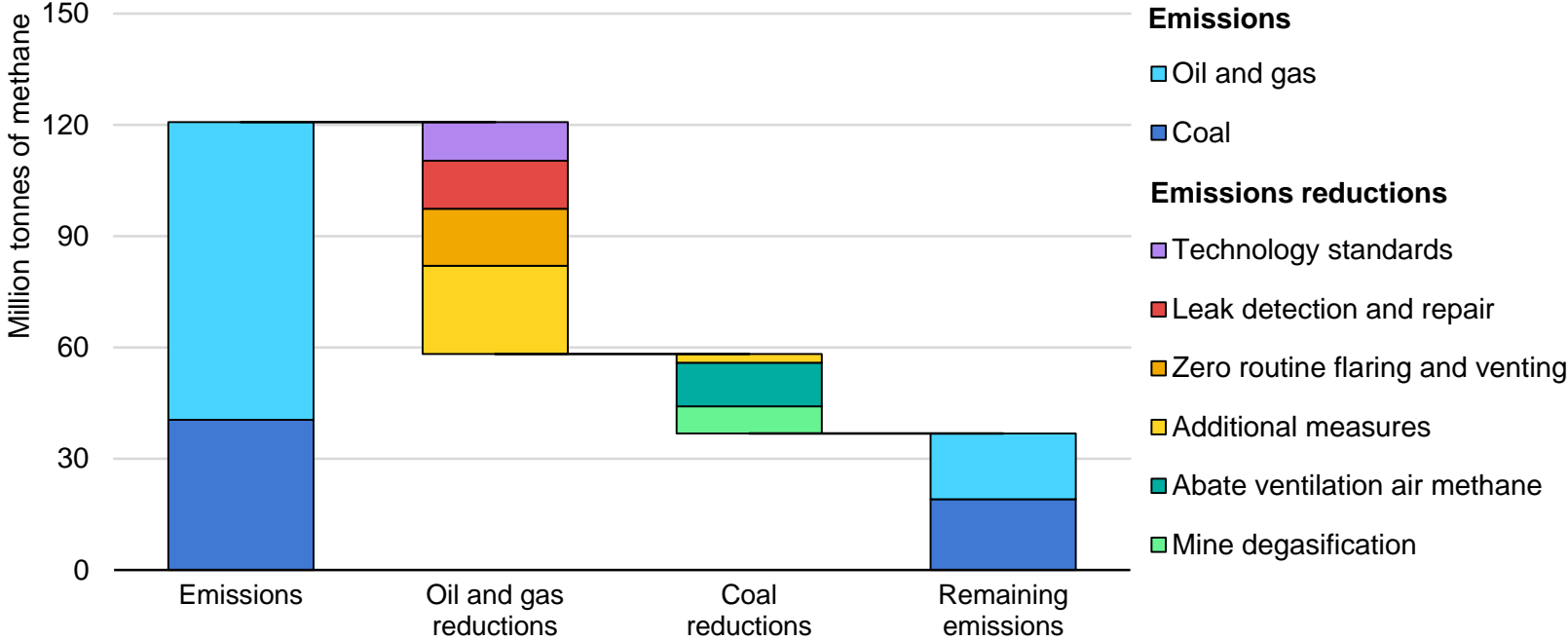
- We have developed a number of resources for regulators and policy-makers looking to cut methane emissions highlighting the steps required and the benefits of doing so
- Our new 10-step roadmap on coal mine methane sits alongside our publication on oil and gas that is already the primary “go-to” reference for countries looking to introduce or enhance methane policies
- We partner with the International Methane Emissions Observatory and many other organisations to advance smart and effective policy action



# Existing technologies can reduce fossil methane emissions by 70%



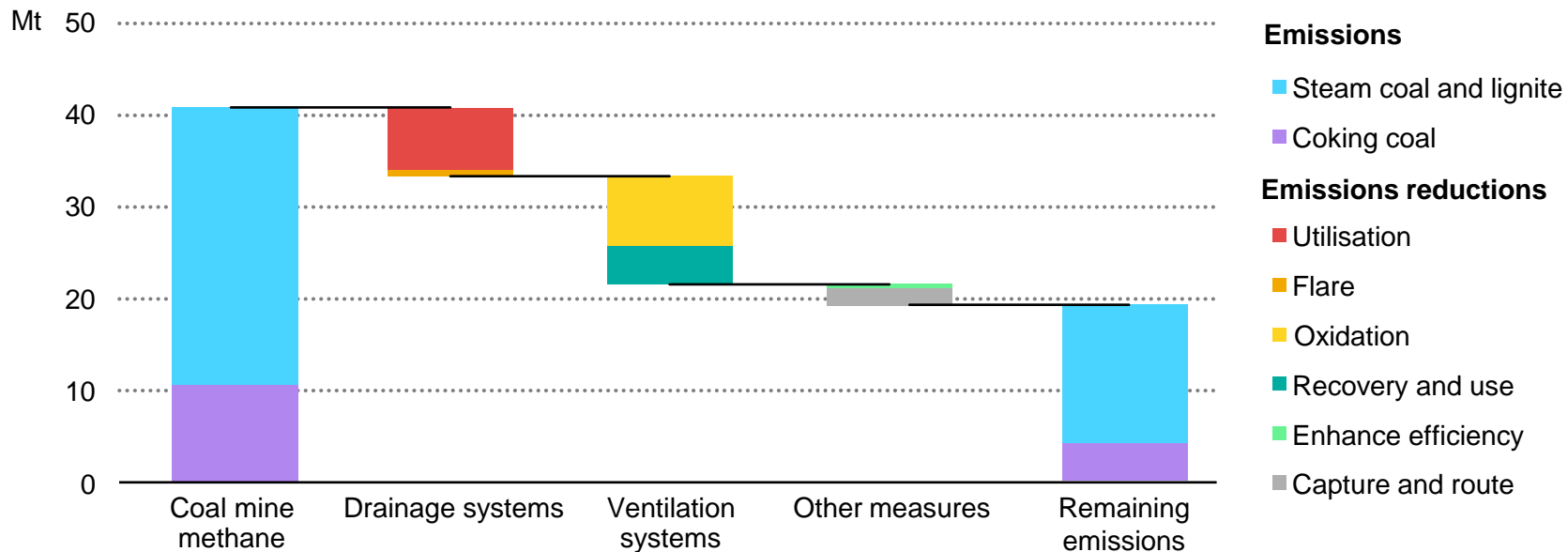
Methane emissions fossil fuel operations and related abatement potential, 2022



**By 2030, all fossil fuel producers in the Net Zero Emissions by 2050 Scenario have an emissions intensity similar to the world's best operators today**

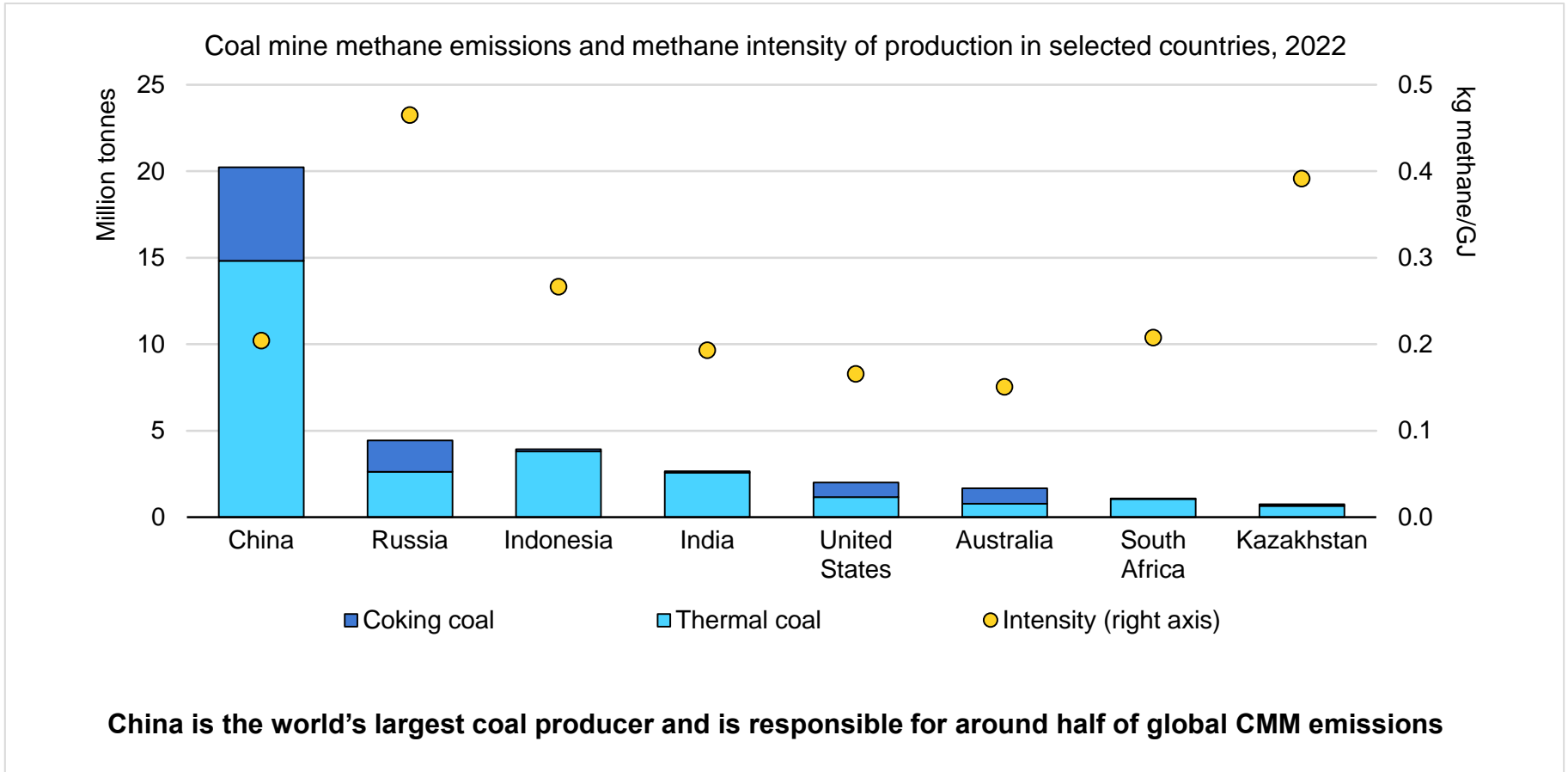
# The coal sector offers key opportunities for methane mitigation

Coal mine methane emissions and abatement potential, 2022



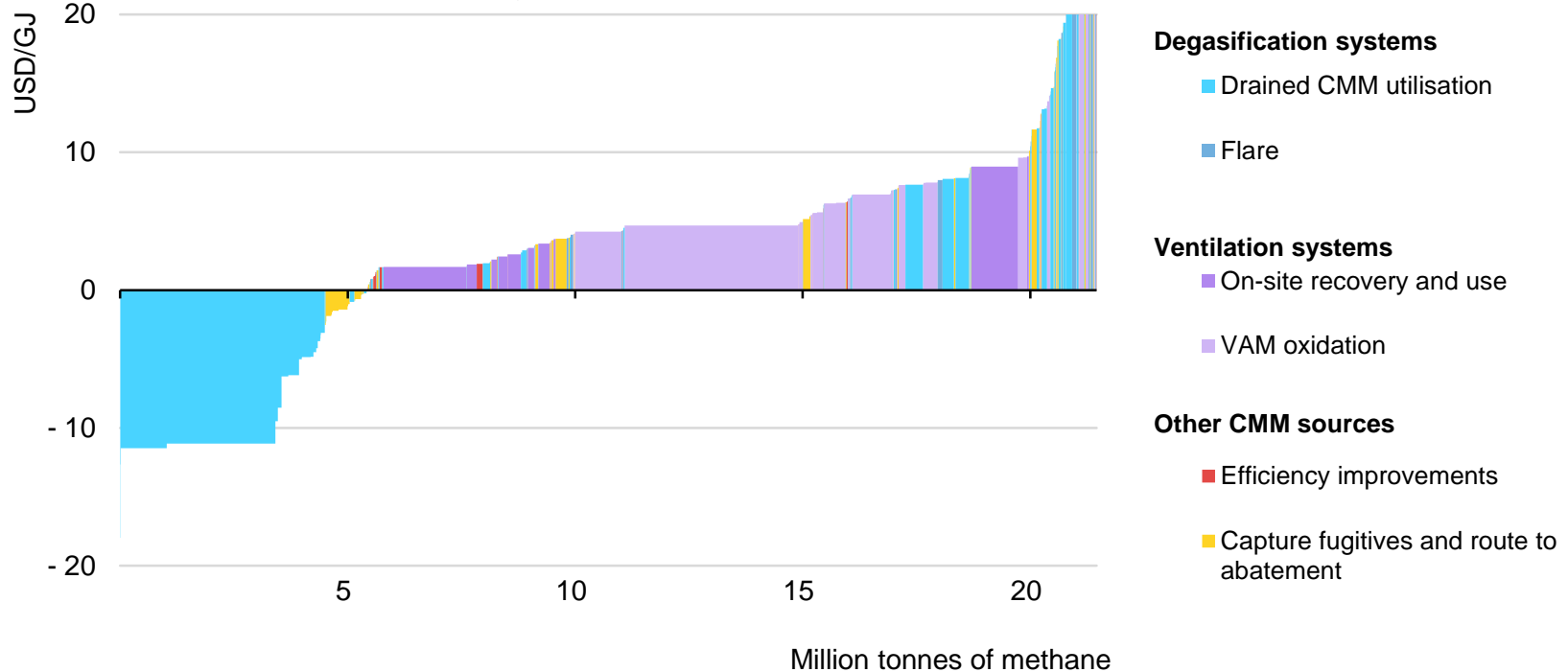
**Coal operations caused around 40 Mt methane emissions in 2022. Cutting coal consumption will reduce emissions, but deploying mitigation measures should still be a priority**

# The top-8 largest emitters account for over 90% of total CMM



# CMM abatement is still far from being standard industry practice

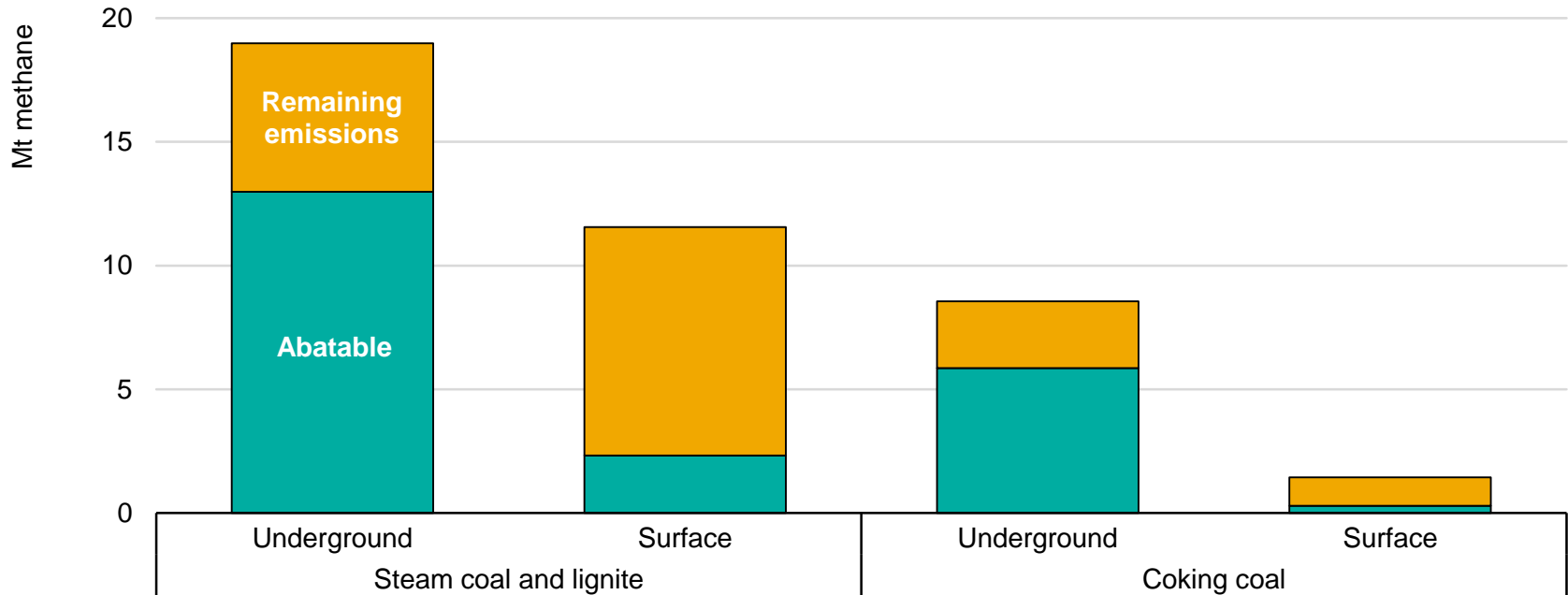
Methane marginal abatement cost curve for coal mine emissions, 2022



**Projects are often hindered by lack of potential users of power or natural gas, economic barriers, and legal and regulatory challenges around the ownership of the methane**

# Methane reductions are particularly important for coking coal

Methane emissions and abatement potential of global coal supply, 2022



**The abatement potential is higher for large, porous underground coal mines and lower for surface mines, where methane emissions are more diffuse**

## Understanding the setting

1. Understand the legal and political context
2. Characterise the nature of your industry
3. Develop an emissions profile

## Regulatory design

4. Build regulatory capacity
5. Engage stakeholders
6. Define regulatory objectives
7. Select the appropriate policy design
8. Draft the policy

## Implementation

9. Enable and enforce compliance
10. Periodically review and refine your policy

# A wide variety of different policy and regulatory tools

## Regulatory structure

### Case-by-case regulation

- Permits
- Contracts

### Generally applicable regulations

- Methane strategy
- Methane regulation

## Approaches to regulation

### Prescriptive

- Leak detection and repair
- Mine degasification

### Performance-based

- Emissions standards
- Methane intensity standards

### Economic

- Methane emissions taxes
- Venting and flaring taxes

### Information-based

- Impact assessment
- Information provisions

## Essential programme elements

### Monitoring

- Measurement campaigns
- Satellite detection

### Recordkeeping and reporting

- Greenhouse gas reporting
- Reporting flaring and venting

### Verification and enforcement

- Third-party verification
- Sanctions

### Policy co-ordination

- Loans and grants
- Research and development

### Adaptive regulation

- Goal review
- Compliance flexibility

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