



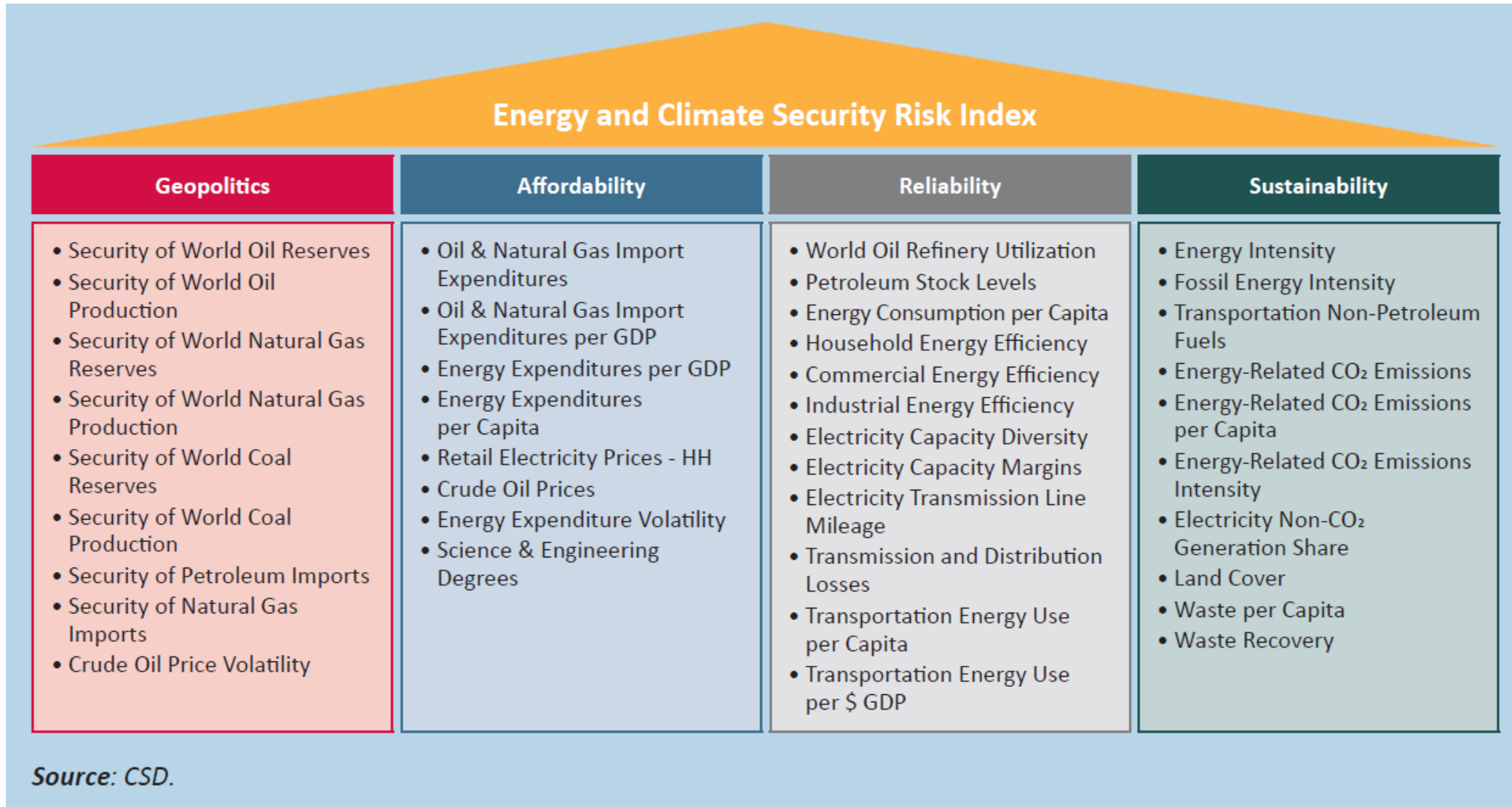
CENTER FOR  
THE STUDY OF  
DEMOCRACY

# **GAS PHASE-OUT STRATEGY FOR SOUTHEAST EUROPE: Implications for Regional Energy and Climate Security**

**Kostantsa Rangelova**  
**Senior Energy and Climate Analyst**

**27 March 2023**

## The Pillars of the Energy and Climate Security Risk Index



# Import Security Risk

$$I_s = I_d \times D_r \times S_g, \text{ where}$$

$I_s$  – Import security risk

$I_d$  – Import dependence (100 – fully dependent on imports)

$D_r$  – Disruption risk (100 = maximum disruption risk)

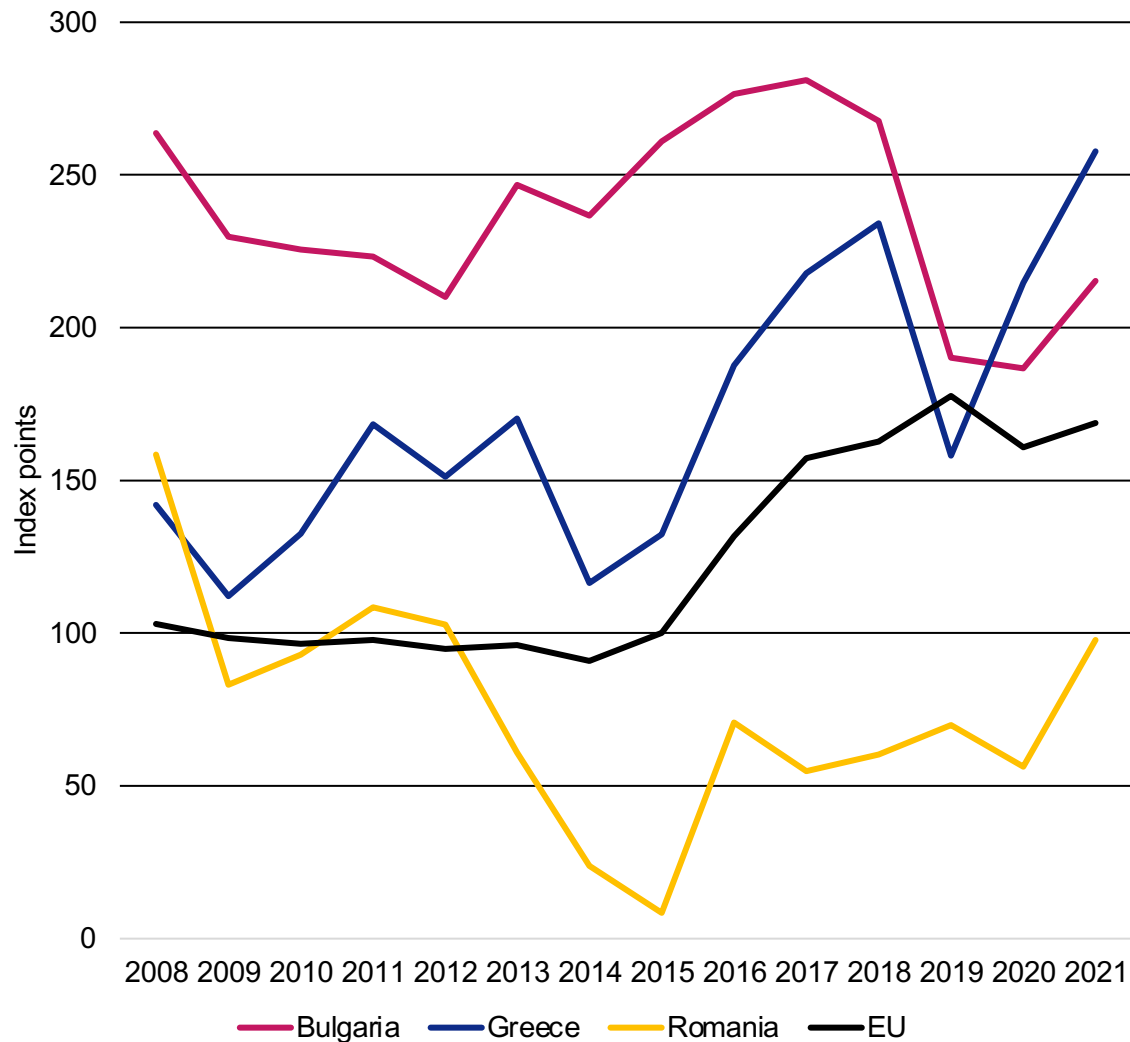
$S_g$  – Share of natural gas in total gross inland consumption

$$D_r = (100 - F_s) \times 0.5 + D_s \times 0.5, \text{ where}$$

$F_s$  – Freedom Score (100 = fully democratic country), weighted average

$D_s$  – Diversity Score (100 = single import source), HHI-based calculation

## Security of Natural Gas imports



Source: CSD based on ECSRI

## How did we get here?

- Europe's excessive reliance on Russian natural gas has been a key risk to the region's energy and climate security. The risk at the EU level doubled between the annexation of Crimea and the invasion of Ukraine due to further increases of the reliance on Russian gas.
- Southeast Europe is particularly vulnerable to energy and climate security risks due to its historically greater dependence on Russian gas and the persisting energy poverty crisis in the region.

## Assessing three scenarios through the prism of the ECSRI

- **EU Reference scenario**: baseline scenario provided by the European Commission that takes stock of the policy framework already in place. This scenario is intended by the European Commission to serve as comprehensive analytical basis against which Member States can assess new policy proposals.
- **Fit for 55 - MIX scenario**: one of the three policy scenarios for delivering the European Green Deal provided by the European Commission. It models a strong carbon price signal, extended to the transportation and buildings sector in line with the intensification of national decarbonisation policies.
- **Accelerated gas phase-out ("Gexit") scenario**: EU-wide scenario for reaching carbon neutrality by 2050, while at the same time accelerating as much as realistically possible the natural gas phaseout.

## Security of Natural Gas imports (2030 vs 2021)



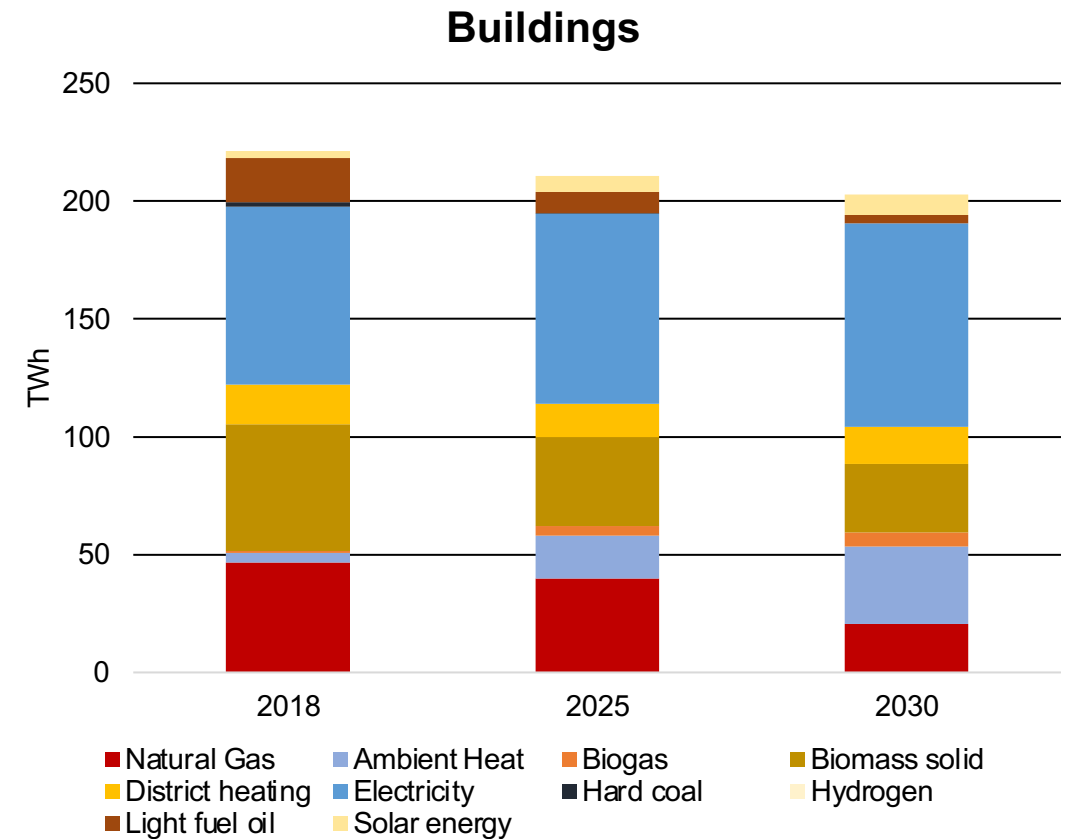
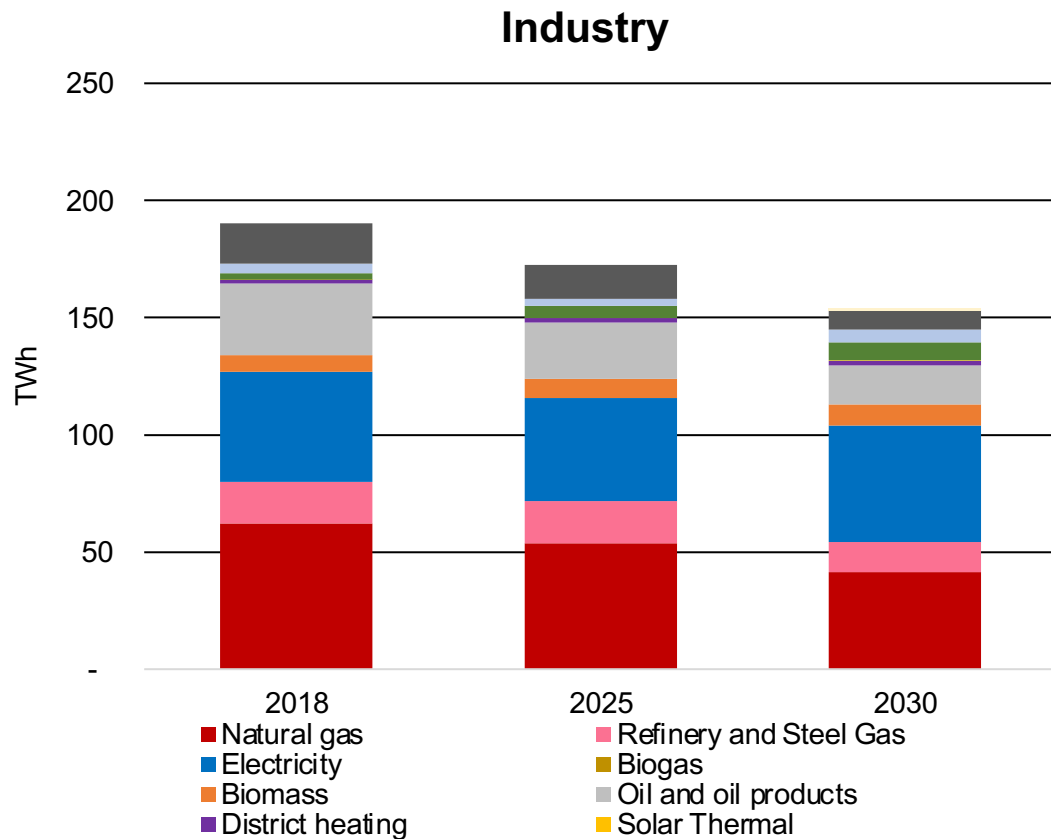
Source: CSD based on ECSRI

## Risk reduction potential by 2030

- Southeast Europe can reduce its natural gas demand by up to 6 bcm vs the EU Reference Scenario by 2030.
- In the Fit for 55 – MIX scenario **less than half** of the demand reduction potential is realised.
- Fully mobilising the potential for lowering natural gas demand in **Romania** could make it a net exporter without the need for additional investments in natural gas production.
- Bulgaria and Greece cannot eliminate their dependence on natural gas imports, but lower demand can significantly accelerate diversification efforts.

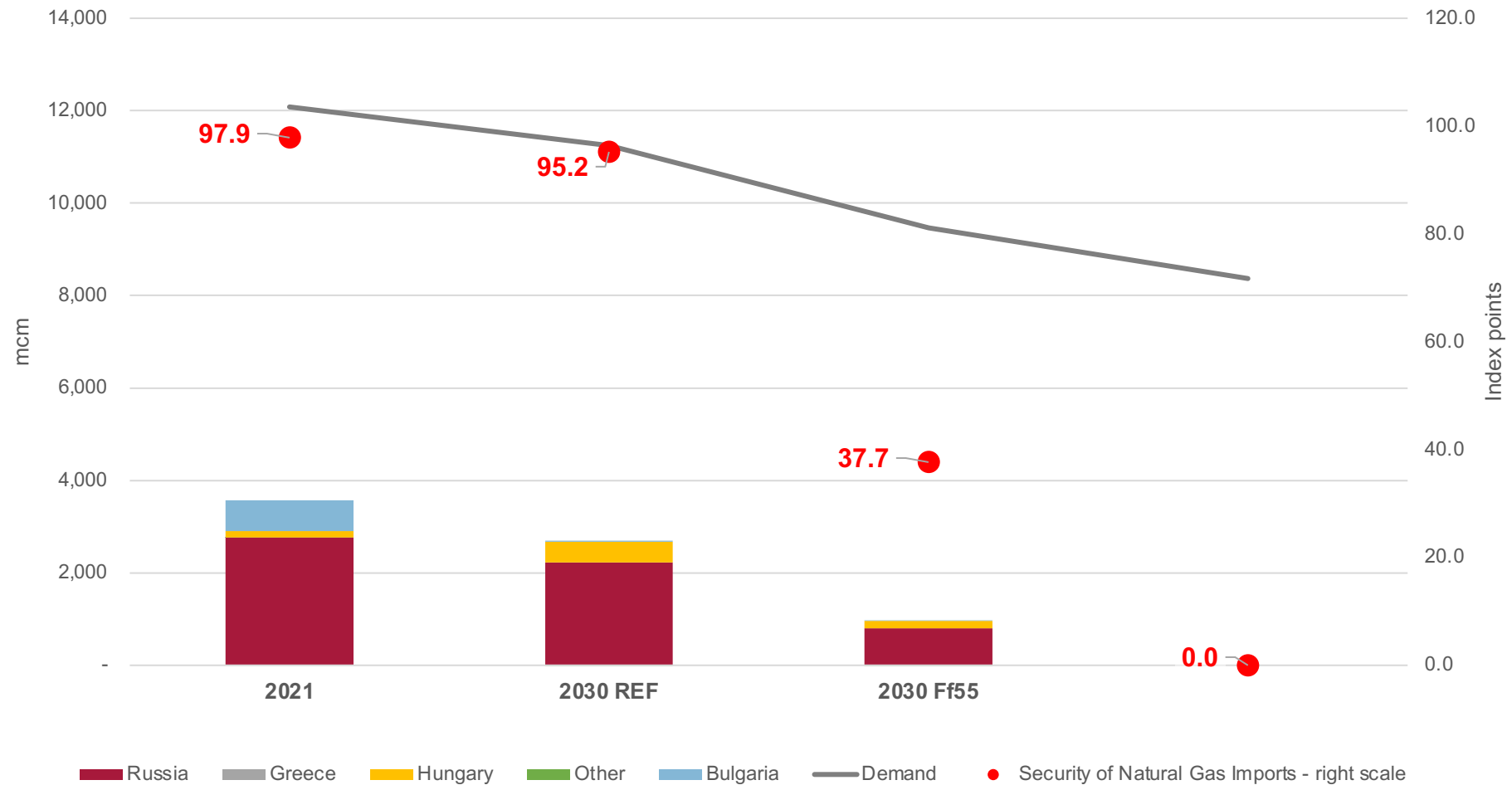
# Efficiency gains and electrification offer the greatest potential for sustainable gas demand reduction

## Gas phase-out trajectory for Bulgaria, Romania, and Greece for Industry and Buildings



Source: CSD based on Wuppertal Institute (national demand reduction pathways modelling)

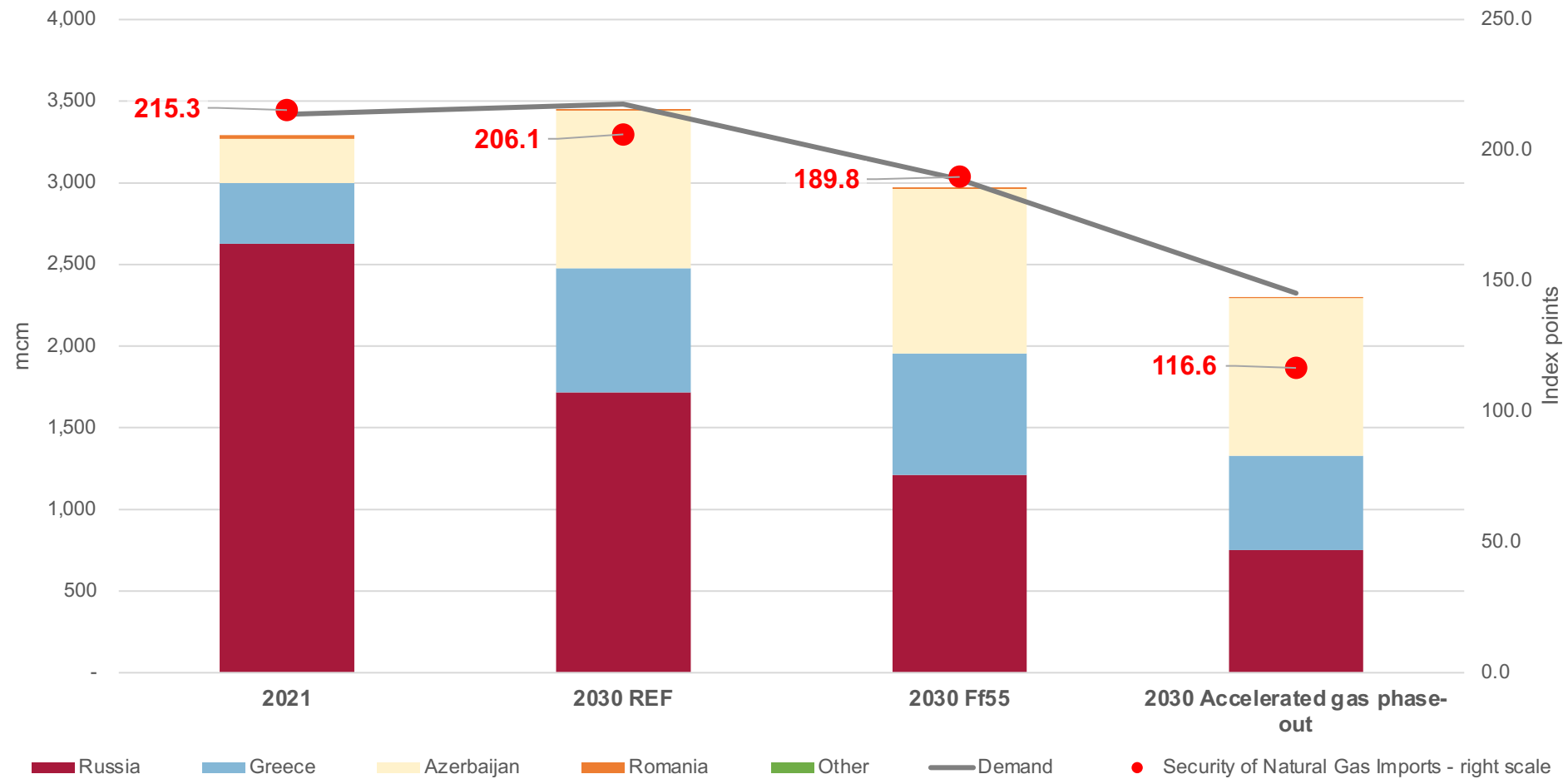
## Natural gas import diversification pathways for Romania



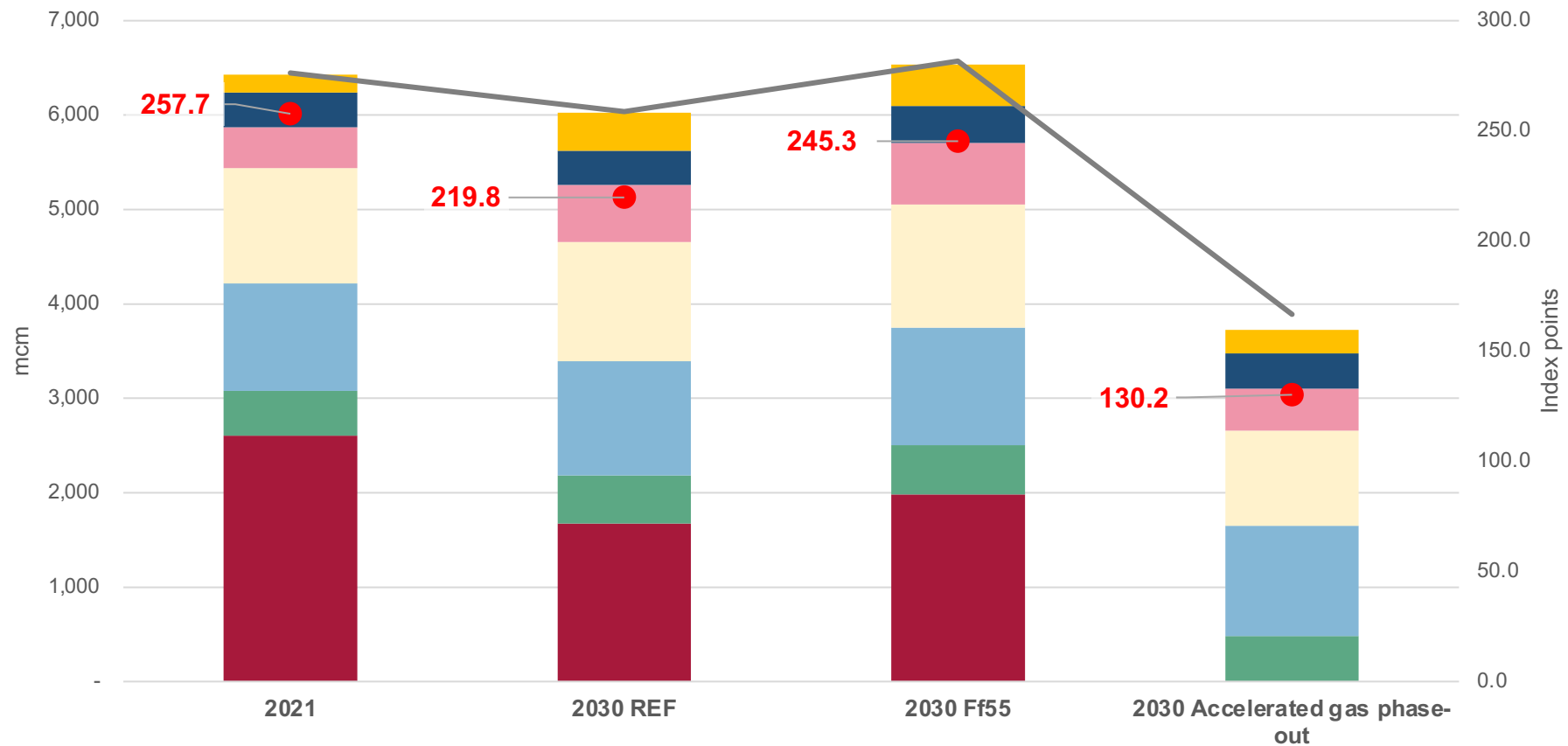
Source: CSD based on ECSRI



## Natural gas import diversification pathways for Bulgaria



## Natural gas import diversification pathways for Greece



■ Russia ■ Algeria ■ United States ■ Azerbaijan ■ Qatar ■ Türkiye ■ Other — Demand ● Security of Natural Gas Imports - right scale

## What's next?

- Accelerating natural gas phase-out is the most efficient way to reduce Southeast Europe's exposure to security of natural gas import risks.
- Targeted policies supporting energy efficiency and the roll-out of heat pumps in buildings and for low-temperature industrial applications are necessary to accelerate the decline of natural gas demand.
- Supporting a faster uptake of renewables, while avoiding gas-lock-in in the power sector is critical for lowering energy costs and reducing energy and climate security risks.
- A sustainable improvement of Southeast Europe's energy and climate security needs to step on
  - Empowering energy poor consumers to become prosumers as key solution to the energy poverty challenges
  - Support a transformational shift in industry based on innovation and higher value-added sectors



CENTER FOR  
THE STUDY OF  
DEMOCRACY

[csd.bg](http://csd.bg)

**Thank You!**

[www.csd.bg](http://www.csd.bg)

