



Modeling Europe's role in the global LNG market 2040

balancing decarbonization goals, energy security, and geopolitical tensions

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Topics based on the review by Anne

1. General feedback on the text (1 Introduction)
2. Specific discussion of the three proposed research questions
3. What should be the 2-3 topics of the literature survey (2 Background)
4. Scenarios & data

Comments from the meeting in orange.

1. General feedback on the text (main comments)

- *use different source, ie. IEA (Natural gas Information) or IEA (2023) Medium term Gas report.*
Berücksichtigung verschiedener Positionen und der sich daraus ergebenden Unsicherheitsmarge, "grau" bei Szenarien
- *please elaborate a bit more (2 more sentences or so... the market equilibrium comes somewhat surprising here)*
Derzeit zu "technisch" formuliert; deutlich machen, was mit "Gleichgewicht" gemeint ist

In addition, there are significant concerns about a market equilibrium for LNG will develop in the medium to long term. Particularly, the market situation in 2022 is not representative of future market equilibrium projections as China's LNG demand was considerably low as a result of severe COVID-19 measures there.
- *where do these demands come from? (→ we should discuss this in detail when it comes to the scenarios)*

2. Specific discussion of the three proposed research questions

- Against this background, this paper aims to answer the following three research questions:
 1. How, in terms of import volumes from regions and related supply costs, will Europe meet its expected LNG demand in 2040 given increased global LNG demand driven primarily by developing countries?
Decline in demand in developed countries; impact on Europe
 2. Which impact will geopolitical tensions between importing and exporting regions have on the European LNG supply if global LNG trade is prone to be used as a political weapon?
Security of Supply, "Welche Rolle spielt Europa in der Welt (noch)?" Wir zeigen eine konkrete Anwendung.
 3. What global LNG trade equilibrium results from unilateral deep decarbonization of the entire European energy system (i.e., no European LNG demand) while other regions continue to demand significant volumes of LNG? Which importing and exporting regions are most affected in the longer term in a potentially oversupplied global LNG market in volumes and cost?
Mit einem möglichen kulturellen Wandel bezüglich CCS Technik wird auch domestic European production wieder Teil der Lösung für dekarbonisierte Energiesysteme; Europa ist Preisnehmer; konkreter auf Preise eingehen? (Verbindung zu RQ1 herstellen)

3. Topics of the literature survey (suggestions)

- LNG's role in future energy systems and decarbonization pathways (Sebastian)
- Modeling global LNG trade (Sebastian)
- Energy carriers as a political weapon (Anne?)
- Topics 1 und 3 den Fokus auf RQ und insbesondere auf "developing countries" berücksichtigen

Next steps

- **Scenarios:** Currently data on very conservative LGN demand developments until 2040
 - Which scenarios do we want to analyze?
 - 1) Verfehlen; (2) 2.0°C Ziel einhalten, (3) "Industrialisierungswelle" erleben, überlegen wegen Net-Zero, "Demand growth, "Wo ist Europa, für die ganze Welt oder Europa", Fokus auf Europa aber internationaler Kontext, COP28, net zero im letzten IEA report,
 - **Document:** Working on the text (Background & Method)
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- **Discussion** of results (after the Christmas break / early 2024)
 - **Conference:** IAEE abstract submission deadline: January 26th, 2024