REKK
REGIONAL CENTRE FOR ENERGY POLICY RESEARCH

Proposed analytical support for the Danube Region Strategy's Energy PA

Péter Kaderják

Director

Steering Committee Meeting, PA2 of the EU Strategy for the Danube Region

October 28, 2015. Ulm, Germany

Defining the 2015 fall -2016 program

- Background objectives:
  - Contribute to Energy Union related (pre)-legislative discussions
  - Best serve regional energy sector development
  - Stimulate projects
- List of potential topics discussed and narrowed down by Czech and Hungarian colleagues during summer:

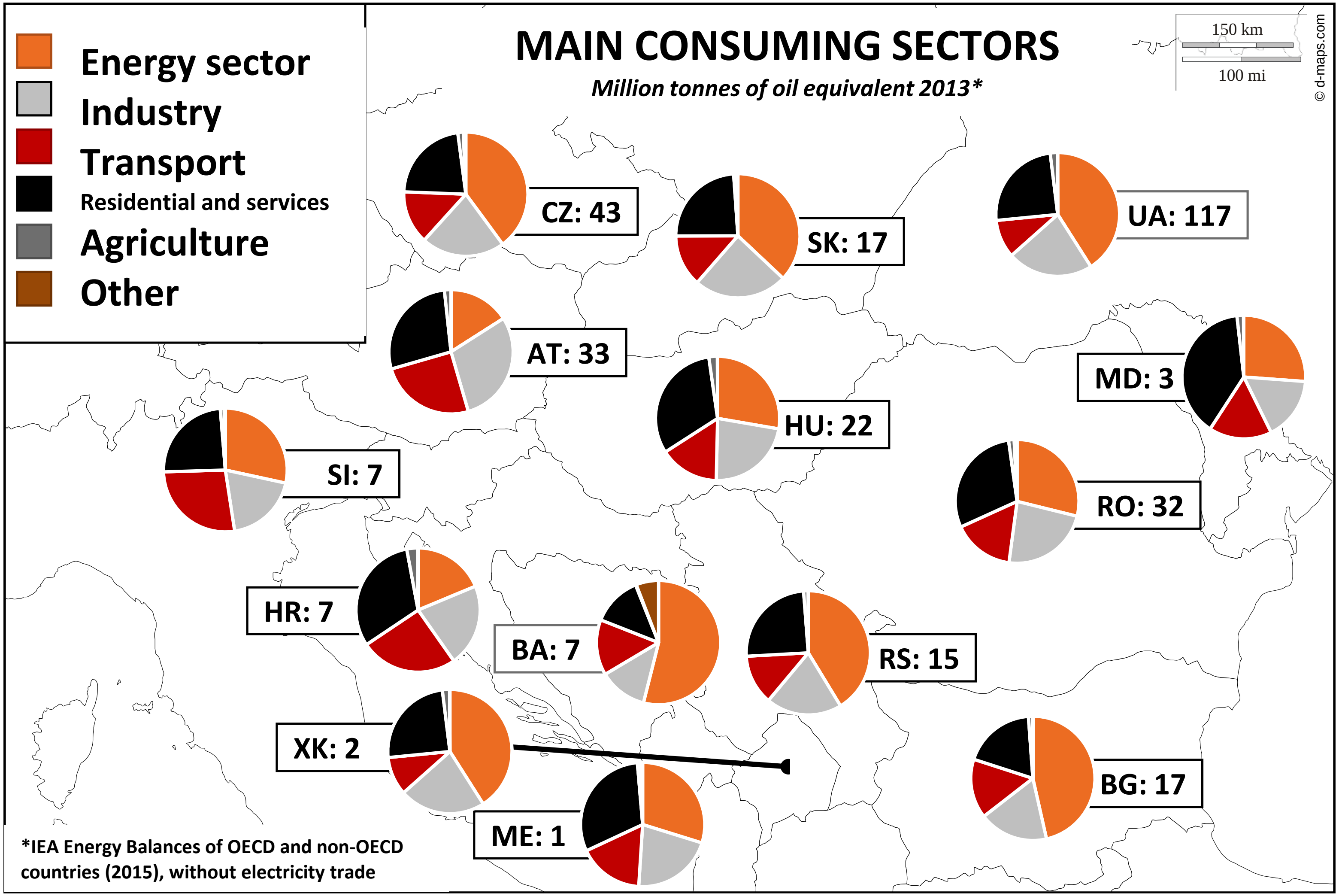
1. Monitoring the renewable heat sector in the Danube Region

2. Evaluating the LNG option for the Danube Region

1. Monitoring the renewable heat sector in the Danube Region

Heating and cooling is up to 40% of primary energy consumption in the DR

REKK Regional Centre for Energy Policy Research



RES-H provides for close to 50% in RES consumption

RES consumption according to NREAPs in 8 DR/EU* countries

ktoe	2010	2015	2020
RES-H	20 905	24 510	29 731
RES-E	16 241	22 892	29 210
RES-T	5 139	5 606	9 289
Total	42 285	53 008	68 230

- Heat sector gives 50 % of RES consumption in 2010
- RES-H has a crucial role to meet the 2020 targets also in DR countries

The role of RES-DH

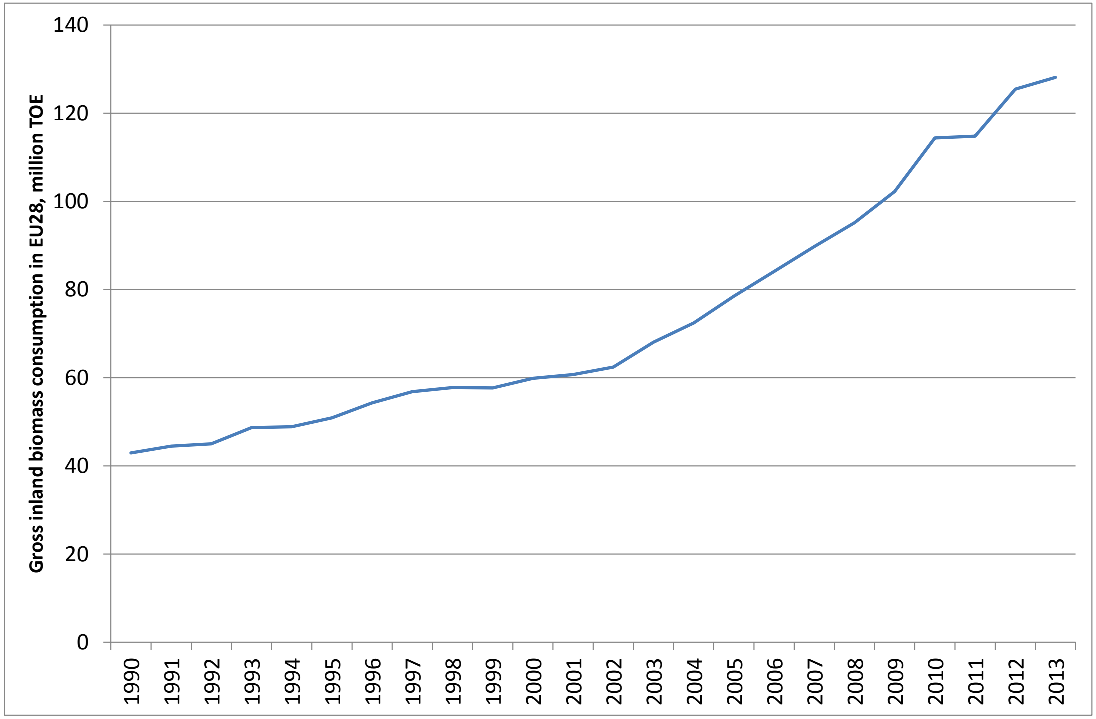
ktoe	2010	2015	2020
RES-DH	2329	3548	6026
Other RES-H	18 576	20 962	23 705
Total RES-H	20 905	24 510	29 731

- District heat gives almost half of the renewable consumption growth in the heat sector

*:AT,BG, CZ, DE, HU, RO, SI, SK

Proposal: carry out a review phase of renewable heat monitoring in the DR

Biomass consumption in EU28



- Present biomass consumption is around 120 mTOE in the EU
- According to the European Environmental Agency (2006) the biomass potential is above 190 mTOE
- The barrier is not that the EU reached its full biomass potential, but other factors
- Regulation of the DH sector is crucial to mobilize the biomass and geothermal potential

The proposed project should:

- focus on DH regulation and RES incentive schemes
- be based on previous results (DR Biomass and Geothermal Action Plans)

Objective and proposed Tasks

Objective

- review the use of renewable heat (RES-H) in the DR countries
- focus on the renewable based district heating (DH) sector
- identify best practices which help to utilize renewable heat in the district heat sector

Task 1: Development of RES-H use in DR countries in the last decade

- assess the development of the fuel mix of the heat sector in the last decade
- analyse the demand side of the heat sector, focusing on the development of heat use in the various end user segments such as household, industry, service and other
- compare the DR countries to find general tendencies and/or identify clusters.

Task 2: Analysis of RES DH sector in DR countries

- carry out a thorough assessment of the renewable district heat (DH) sector:
  - analyse the fuel mix development,
  - assess the present regulation of DH, including the different RES support mechanisms
  - identify the best regulatory practices that foster the utilization of renewable sources in DH

Task 3: Comparing the present RES-H development with the National Renewable Action Plans (NREAPs)

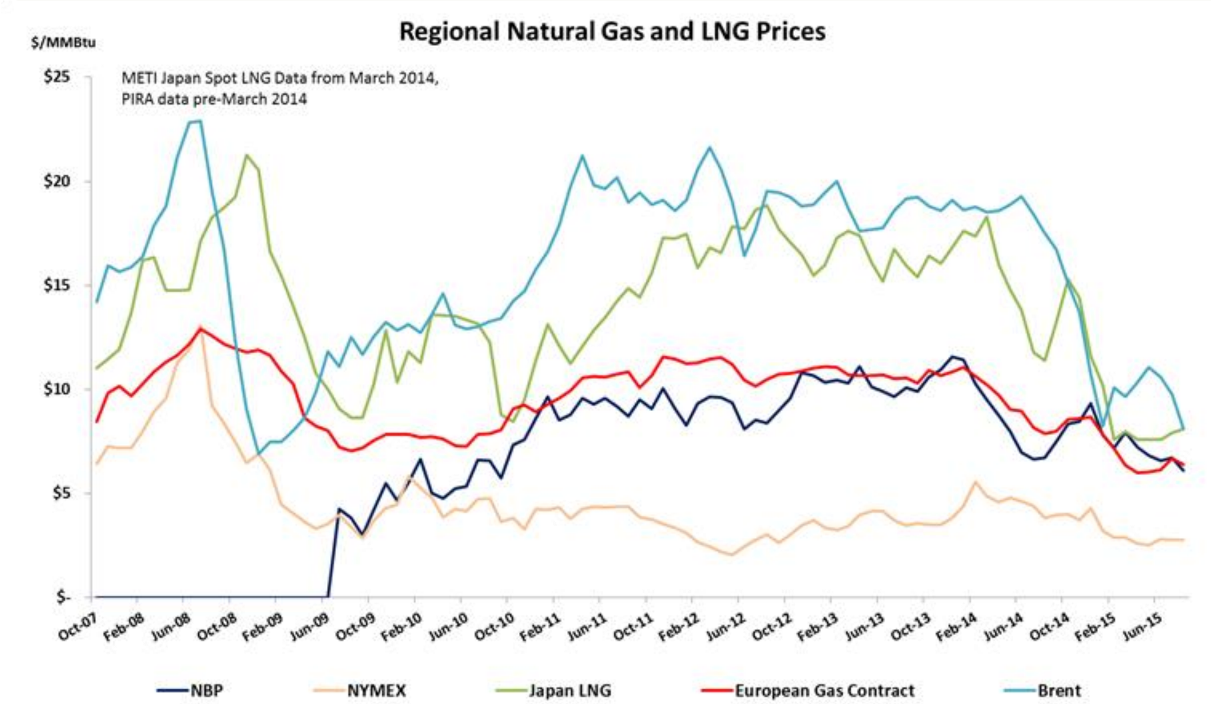
- contrast the actual RES-H development and compare it to the plans indicated in the NREAPs
- assess per country the sectors that are efficient/inefficient in reaching their interim RES-H target.

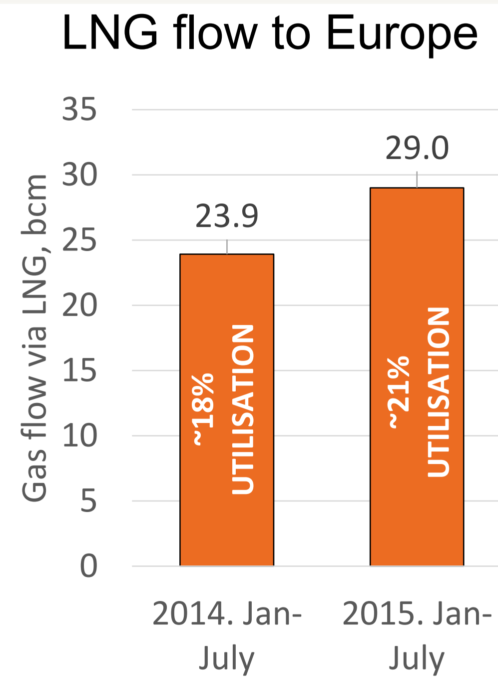
Expected outcomes

- Conclusions to contribution to the Commission's „Heating and cooling" strategy paper
- Policy and regulatory proposals to improve RES utilization in the DH sector in the DR
- Produce a DR Working Paper to serve as a basis for a project oriented Workshop on RES-H utilization

2. Evaluating the LNG option for the Danube Region

Relative attractiveness of European market for LNG improves…





Current market developments:

- Asian gas demand decrease
- Drop in oil and in oil-indexed LTC gas prices
- Regional gas price convergence
- More spot LNG is heading towards Europe
- With the current trend European LNG utilization in 2015 might go up to 51 bcm (22% utilization)
- Downward pressure on EU spot prices

BCM/YEAR	2016	2017	2018
Potential US LNG export to Europe	7.7	16.5	31.8

…new LNG export capacities to come online, but…

REKK Regional Centre for Energy Policy Research

- Declining demand in Europe for the last years
- LNG was heading to Asia, European LNG terminals were underutilized

2015: there is a substantial change on the LNG market

US LNG pricing is market based - More LNG can be spot traded

Australian and US producers enter the LNG market

FIGURE 5. US CAPACITY HOLDERS

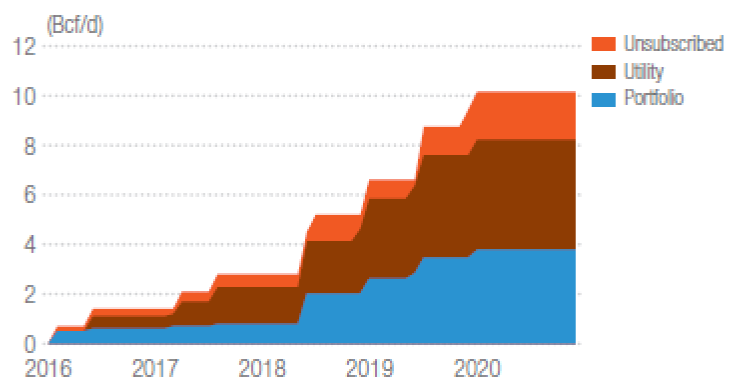
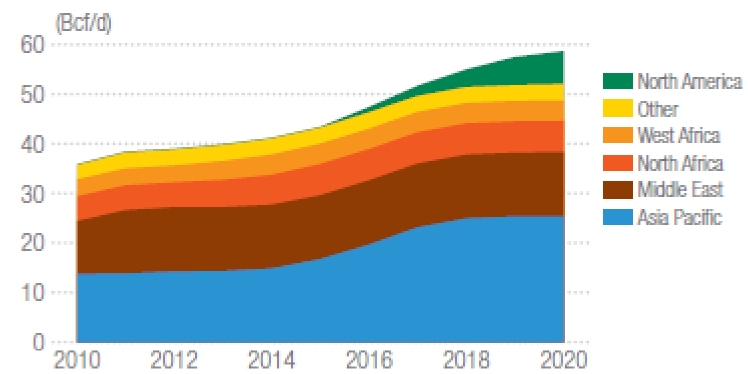


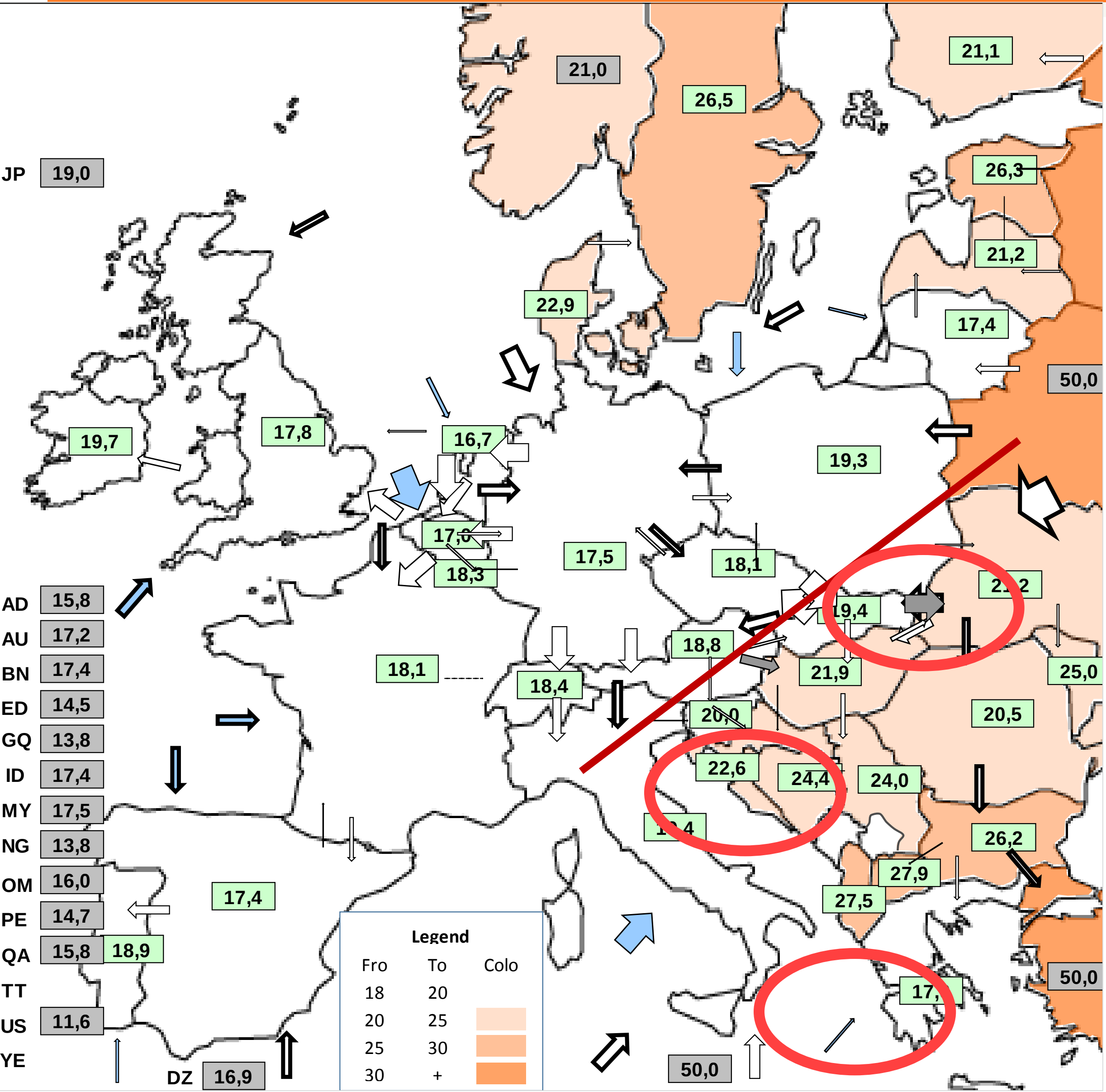
FIGURE 1. GLOBAL LIQUEFACTION CAPACITY



Source: Eclipse Energy Group

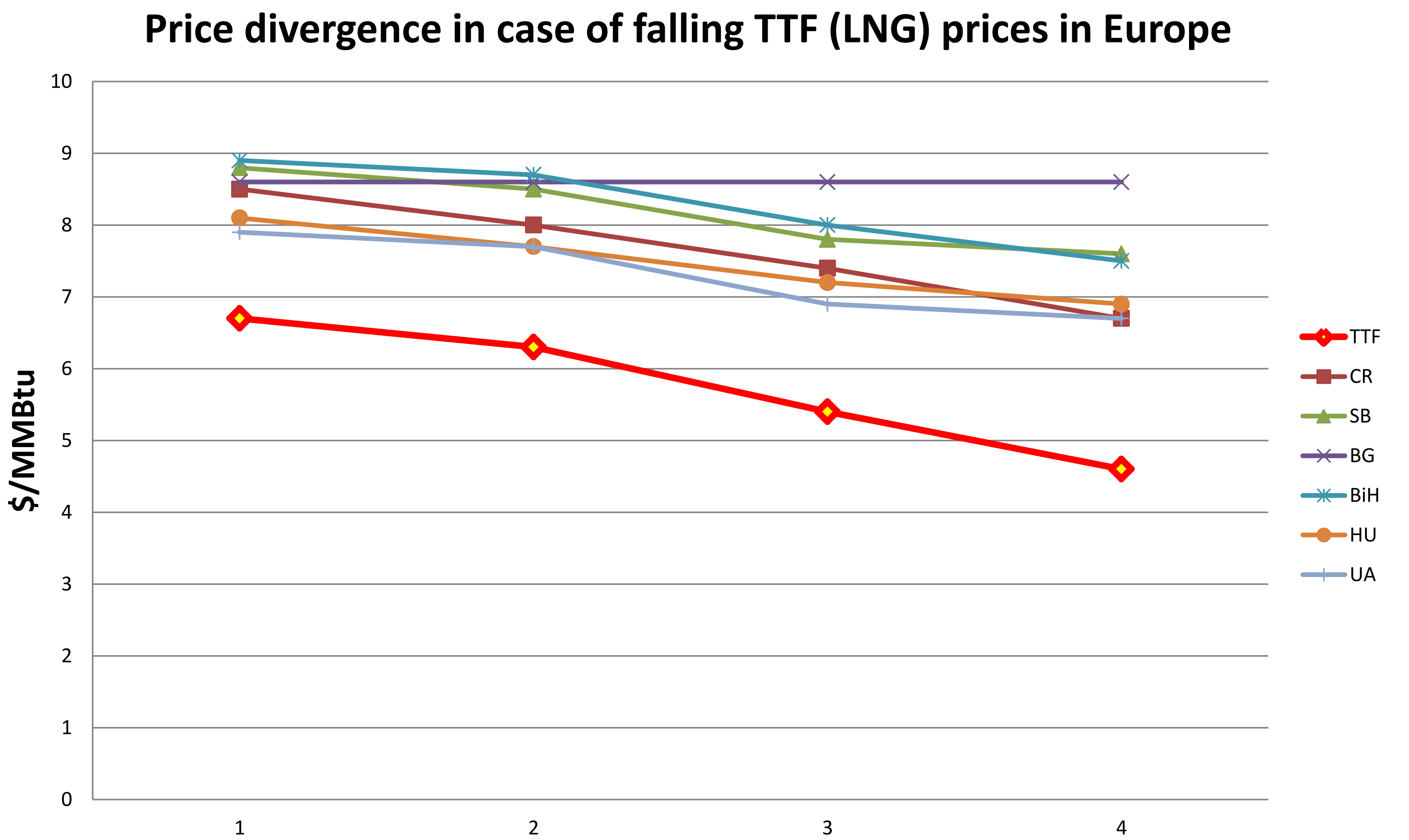
…infrastructure and regulatory constraints limit DR benefits from this development…

REKK Regional Centre for Energy Policy Research



- CSEE price: 22-44% over TTF
- Need for additional LNG in SEE or connecting LNG-GR to SEE is needed

…and wholesale gas price divergence might develop within Europe



Proposal: evaluating the LNG option for the Danube Region

REKK Regional Centre for Energy Policy Research

<u>Objective:</u> evaluate the possible gas market effects of increased LNG regas and related pipeline options for the DR

<u>Task 1</u>. **Gas demand analysis and outlook for the DR countries**

- in-depth analysis of gas demand in the last 5 years
- more coherent outlook: perspectives for coal-to-gas switch; impact of energy efficiency efforts

<u>Task 2.</u> **LNG market developments and their impact on the EU gas market**

- LNG market analysis in terms of production costs, supply sources, transport cost, and the effect of LNG market trends on EU gas wholesale prices
- separate evaluation of the impact of US LNG on the DR

<u>Task 3.</u> **Assessment of potential benefits that additional LNG receiving terminal projects could bring to the DR**

- analysis of ongoing projects; best practice on regulation and financing assessed
- main barriers to trade and obstacles for investments identified based on interviews

<u>Task 4.</u> **Modelling the market impacts of alternative RU-EU pipeline options on the DR**

- Combinations of North Stream 2 and Turkish Stream options analysed under alternative DR gas demand and infrastructure scenarios

Expected outcomes

- Conclusions to contribution to the Commission's LNG strategy
- Policy and regulatory proposals to unlock the Danube Region for LNG
- Produce a DR Working Paper to serve as a basis for a topical LNG Workshop for the DR

EGMM references

- Analysis of the CSEE gas storage market; the impact of system use charges on the demand for gas storage capacity (E.ON, 2012) and (MoFA, 2013)
- CBA of PECI projects for the Energy Community (2013)
- Latest significant upgrade supported by FGSZ (Hungarian TSO)(2013)
- The impact of gas infrastructure corridors on the regional gas market (MoFA RoBoGo, March 2014), FGSZ South Stream (April 2014)
- Supply Security analyses related to the Ukrainian crisis (2014, Atlantic Council, EFET, IDDRI)
- Towards2030 - Dialogue
- CBA of PCI projects for the Hungarian Energy and Public Utility Regulatory Authority (2014-2015)
- Measures To Increase The Flexibility And Resilience Of The European Natural Gas Market (2014, IEA)
- CESEC gas infrastructure corridor modelling (2015, Commission)
- LNG receiving capability of Europe at different price scenarios and pricing strategies and infrastructure bottlenecks (2015, Cheniere)