

Market modelling of Nord Stream 2

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Brussels, 21 February 2017

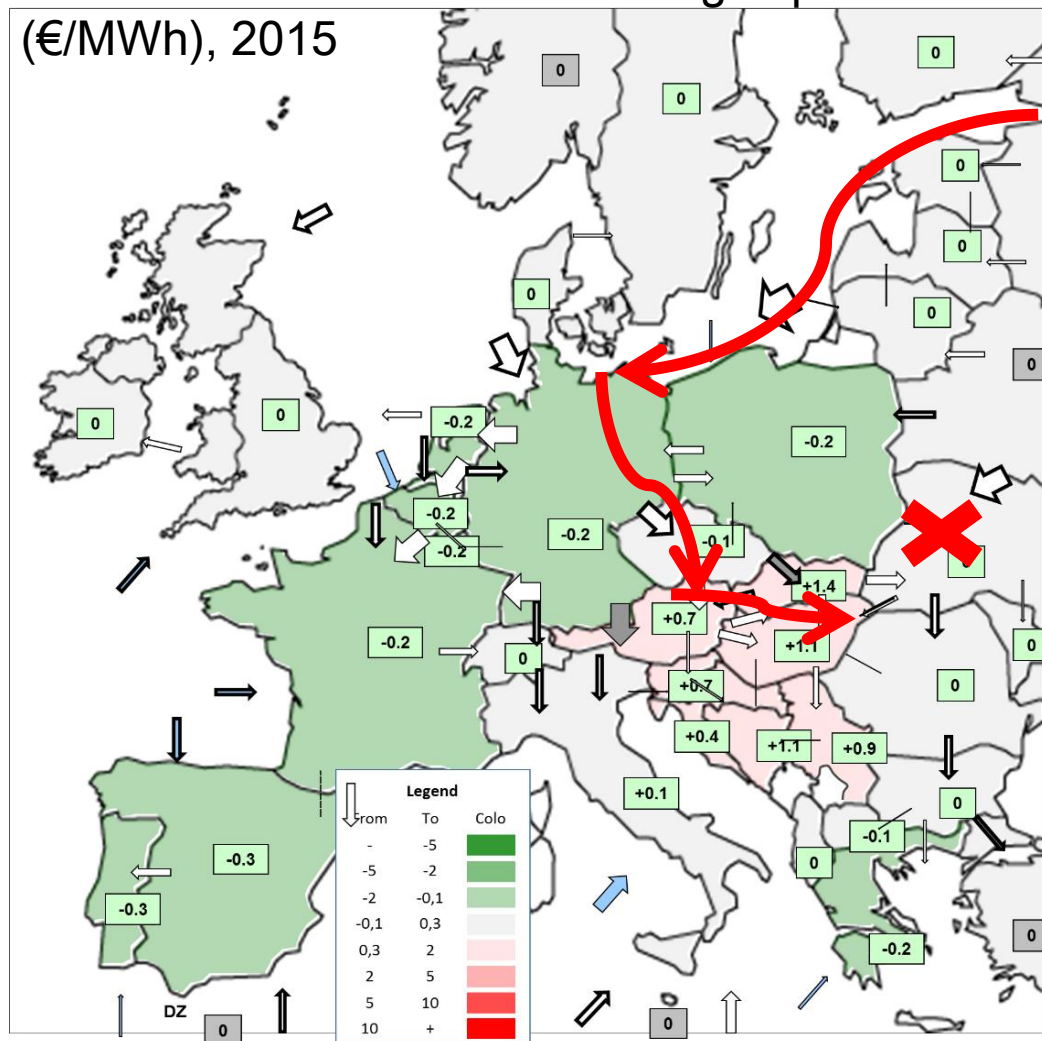
The reason why NS2 is dividing Europe

- Modelling NS2 to be built overnight in 2015
- Due to the growing number of congestions price difference between Western and Eastern-Europe increase:
 - significant price increase in the CSEE region (0,4–1,1€/MWh)
 - marginal price drop in Western-Europe (0,2–0,3 €/MWh)
- The overall welfare effect of NS2 is negative, although Western European consumers and TSOs realize gains.

Scenario assumptions:

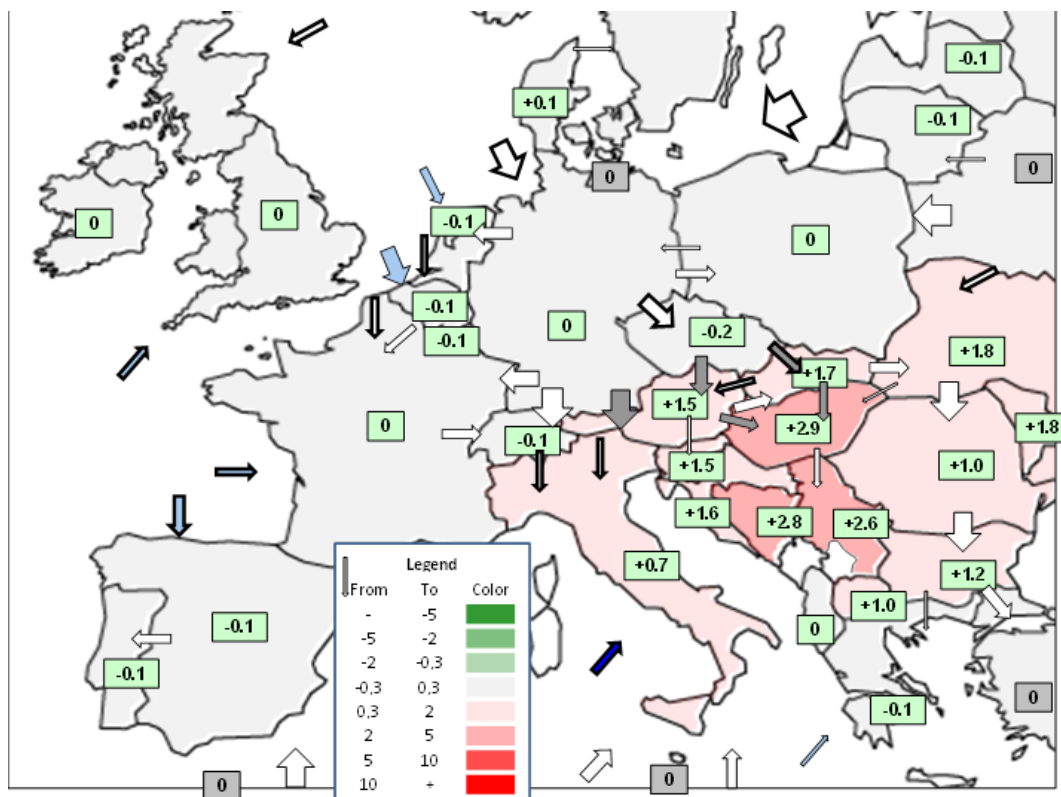
- All contracts except for Trans-Balkan rerouted (RU-AT, RU-BA, RU-CZ, RU-FR, RU-DE, RU-HU, RU-IT, RU-RS, RU-SK, RU-SI)
- Price of Russian gas delivered remains unchanged for existing contracts

The effect of NS2 on wholesale gas prices (€/MWh), 2015

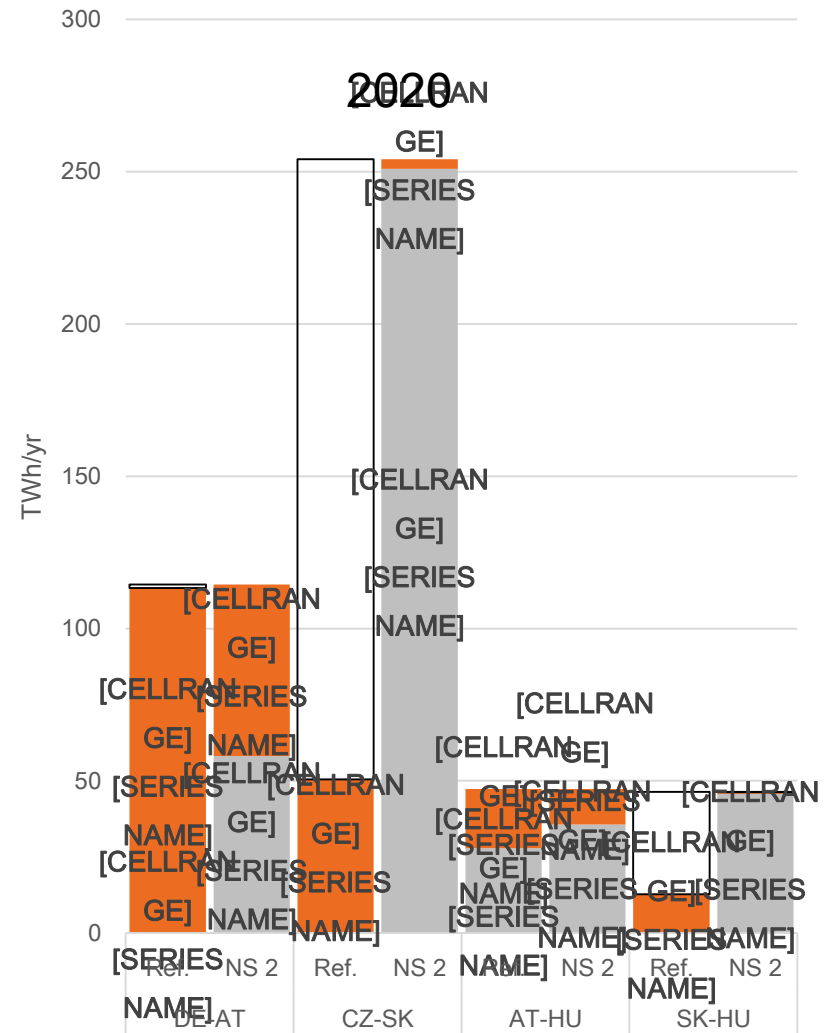
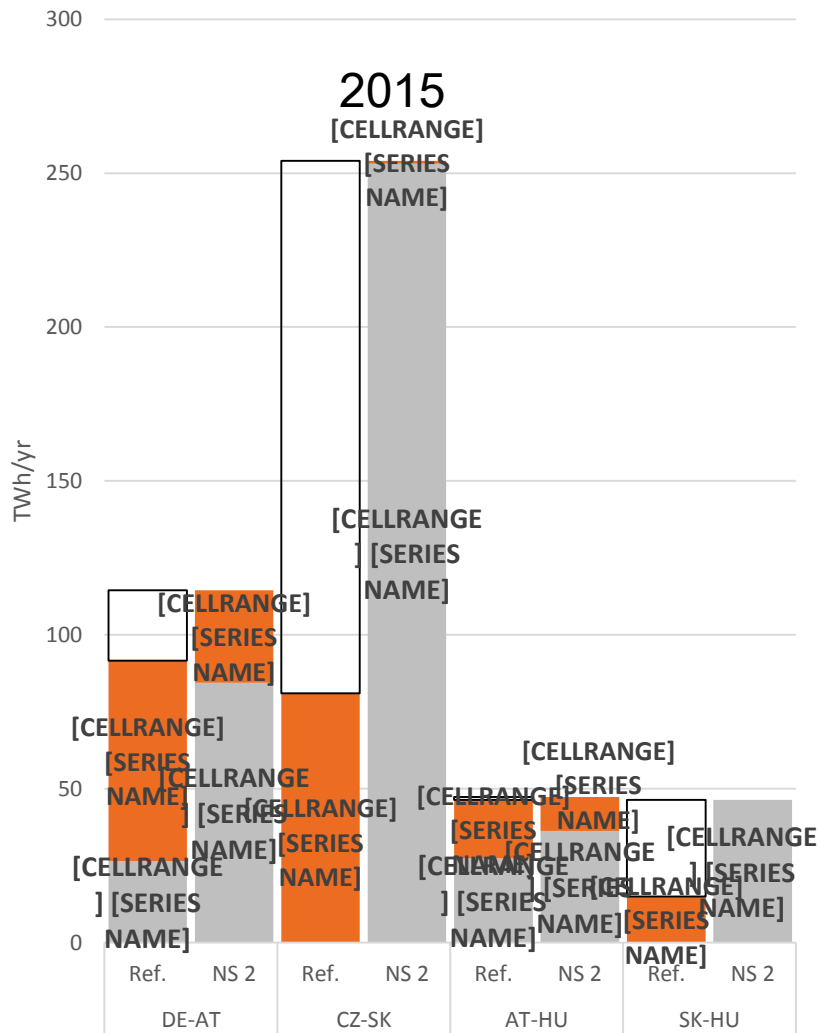


With more LNG Western gains also fade away...

- By 2020 the price difference between the CSEE region and Western Europe widens due to increased LNG flows
 - Higher price increase in CSEE regions
 - Positive price effect in Western Europe disappears
- The overall welfare effect is more negative because Western European consumers do not realize gain any more



Russian LTC flows crowd out spot trade on west to east pipelines



Nord Stream 2 increases project investment by 1000 M€

- Projects with positive social NPV with Nord Stream 2:
 - IGB
 - BG-RO (reverse flow)
 - RO-HU
 - IBS
 - IGB with TAP also
 - HR LNG with HR-HU
- Nord Stream 2 causes a general price hike in the region, thus any new infrastructure has stronger welfare effect
- Without Nord Stream 2, total project investment needs are approximately 890 M€
- With Nord Stream 2, project investment needs increase to 1880 M€

	Social NPV, M€	
	Without NS	With NS
GIPL	-483	-510
GIPL low	-677	-581
GIPL+Baltic Cluster	-568	-594
Baltic Cluster	-84	-81
PL-SK	-521	-456
PL-SK low	-702	-514
IGB	261	1145
IGB+BG-RO	-262	495
IGB+BG-RO+RO-HU	-680	77
IGB+IBS	-46	1296
IGB (with TAP)	236	1677
IT LNG +SIHU	-128	-74
low IT LNG +SIHU	-303	-74
HR LNG	36.4	857
HR LNG + HR-HU	-293	528
HR LNG+HR-HU low	-272	1267
Low HR LNG+low HR-HU	380	1625