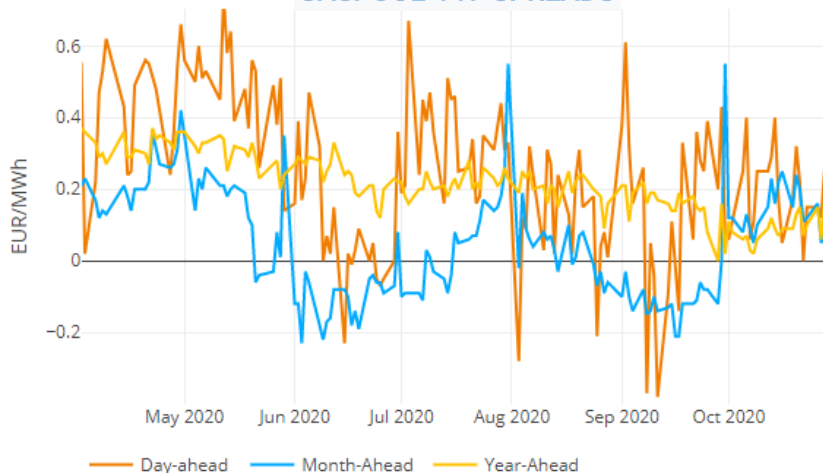

European Gas Spreads

ENGIE Global Markets Economic Research
30 October 2020

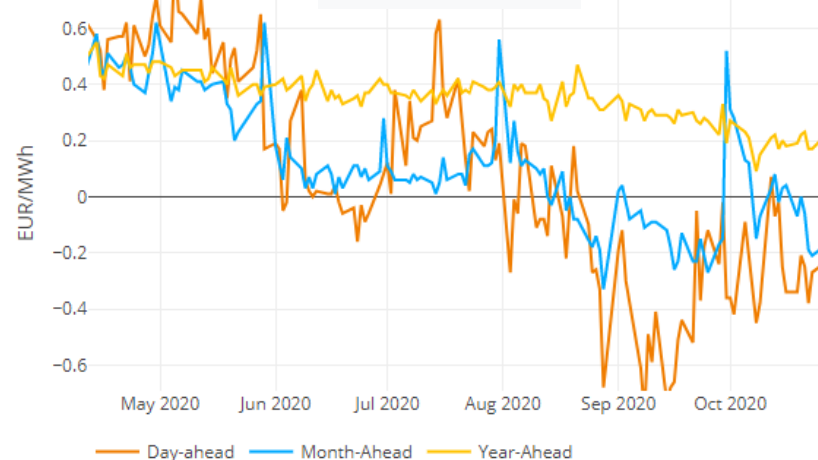


DE-NL spreads

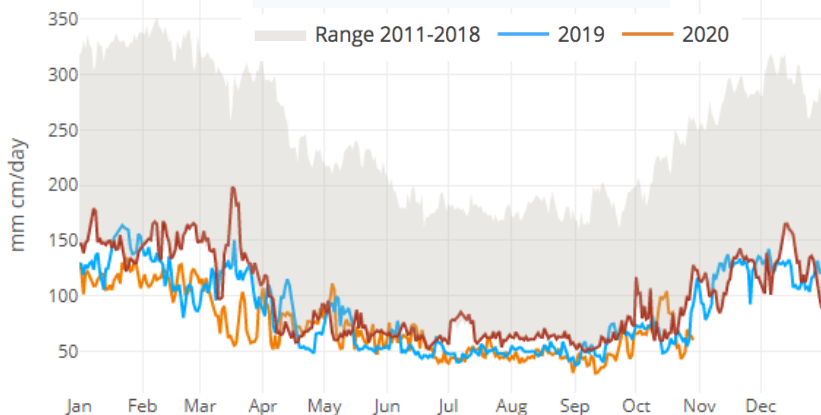
GASPOOL-TTF SPREADS



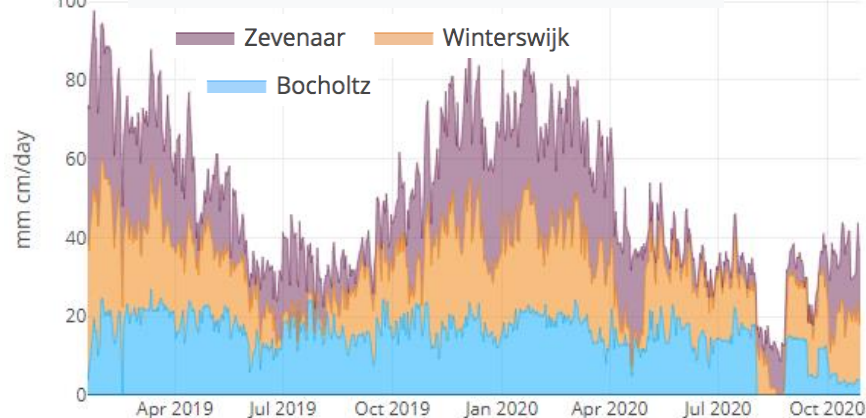
NGC-TTF SPREADS



NETHERLANDS GAS PRODUCTION



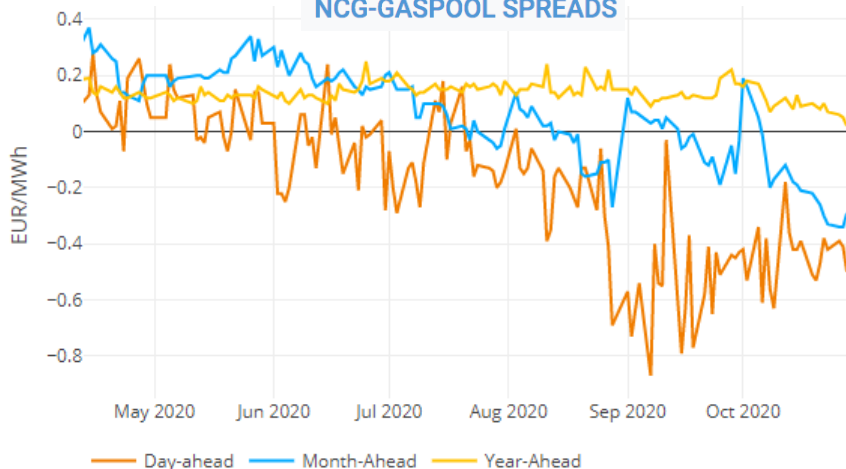
NETHERLANDS TO GERMANY PIPELINE GAS FLOWS



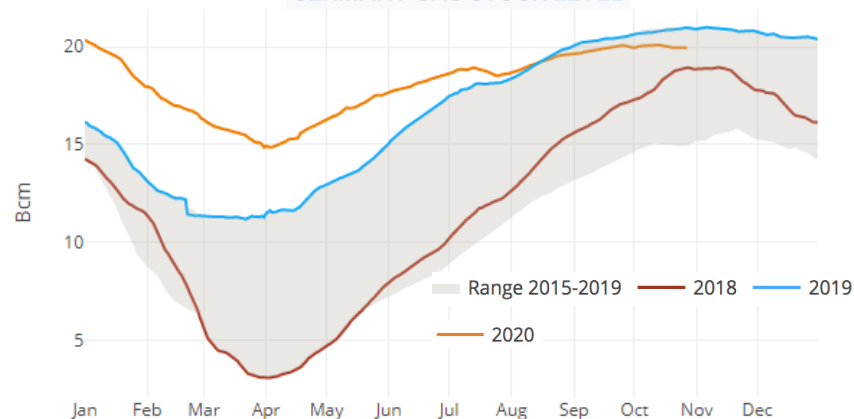
Lower domestic gas production and volatile Norwegian supply tightened the gas balance in the Netherlands compared to Germany, driving the NCG-TTF and Gaspool-TTF spreads lower in August and September. They rebounded in October, but remained relatively low.

German spreads

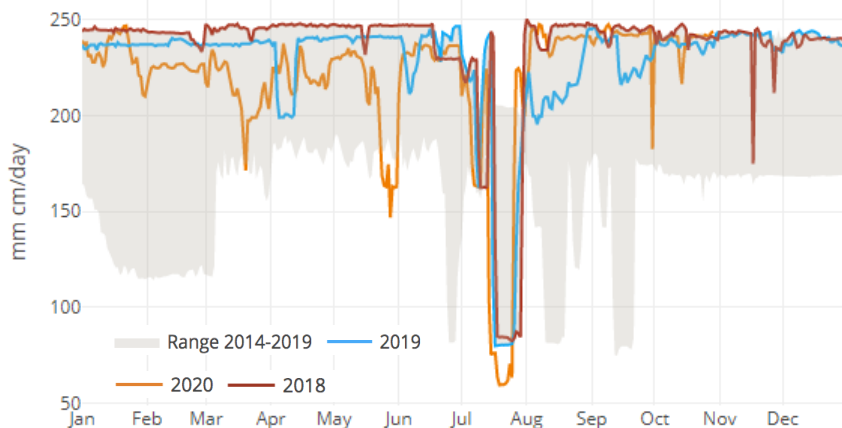
NGC-GASPOOL SPREADS



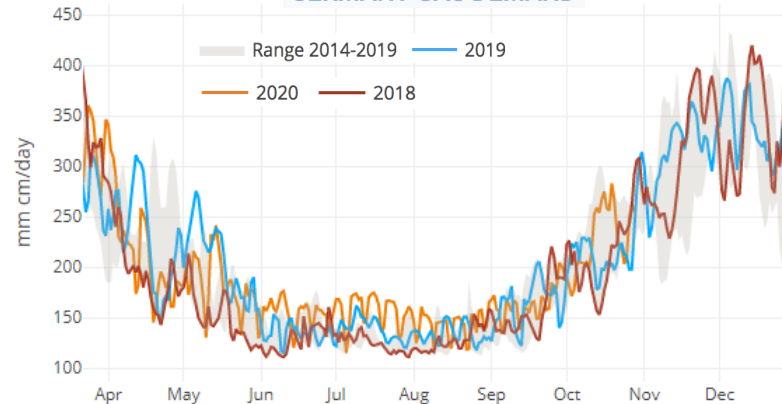
GERMANY GAS STOCK LEVEL



RUSSIAN GAS EXPORTS TO GERMANY



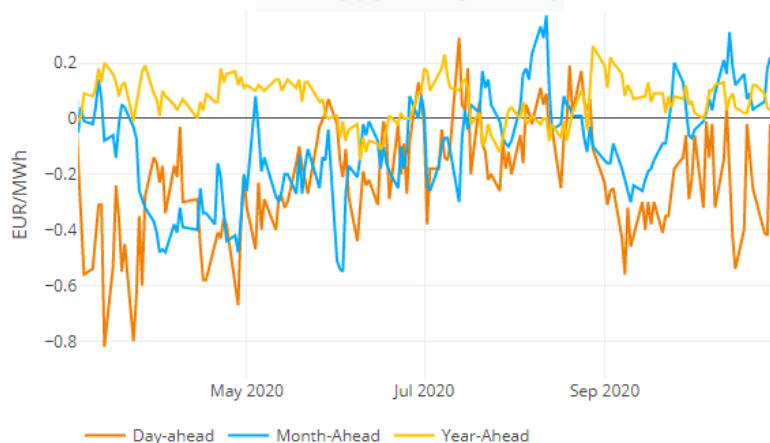
GERMANY GAS DEMAND



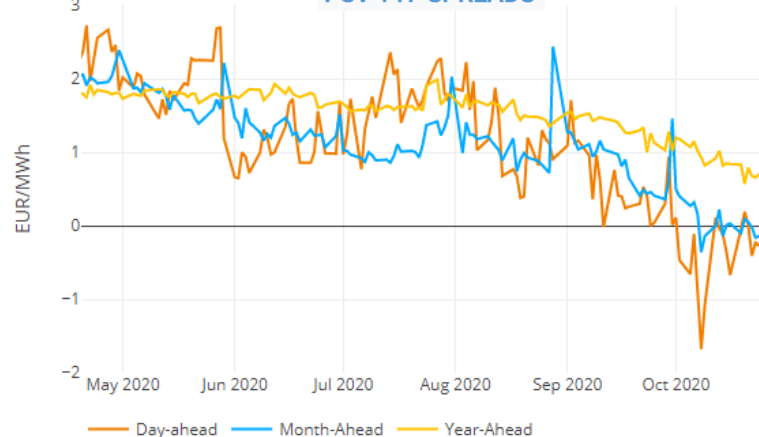
Volatile Norwegian supply in August and September impacted more the Gaspool area, driving the NCG-Gaspool spreads significantly down. As in most European countries, German stocks switched to withdrawal mode as early as 12 October.

BE-NL, FR-NL and IT-NL spreads

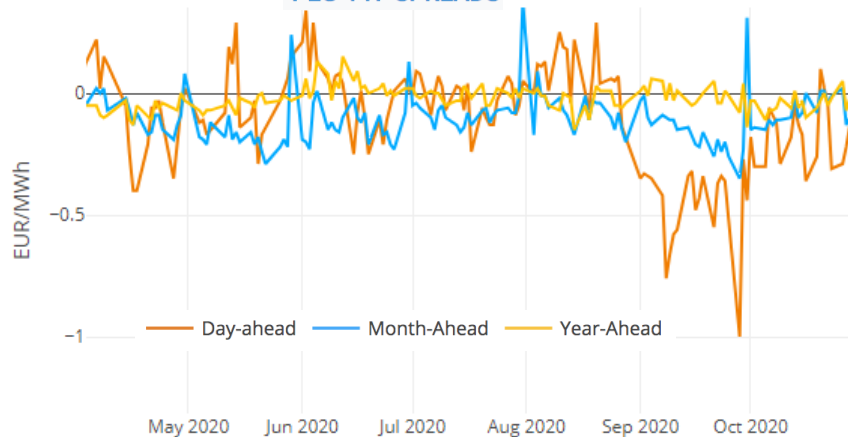
ZEEBRUGGE-TTF SPREADS



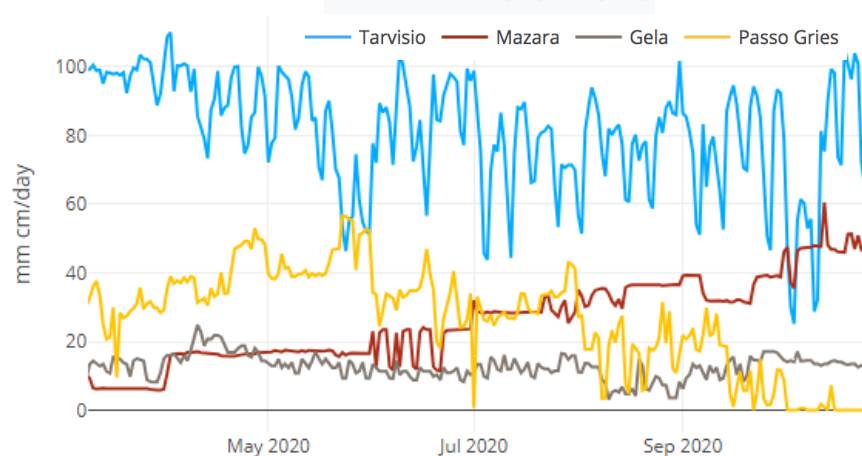
PSV-TTF SPREADS



PEG-TTF SPREADS



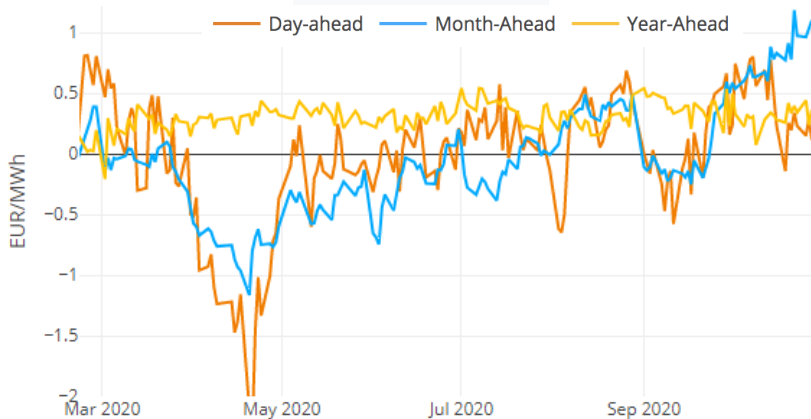
ITALY PIPELINE GAS IMPORTS



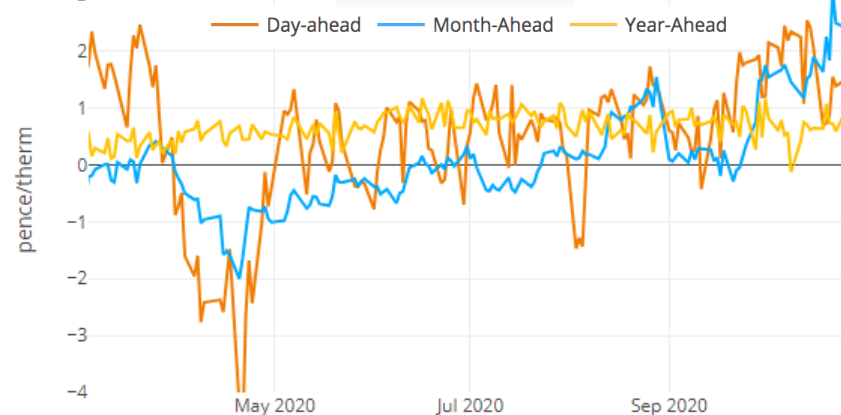
Reflecting a tighter Dutch balance (gas stocks in the Netherlands were 86% full on 28 October, compared to an European average at 94%), the ZEE-TTF, PSV-TTF and PEG-TTF spreads dropped significantly from August, on the spot and the curve.

UK-Continent spreads

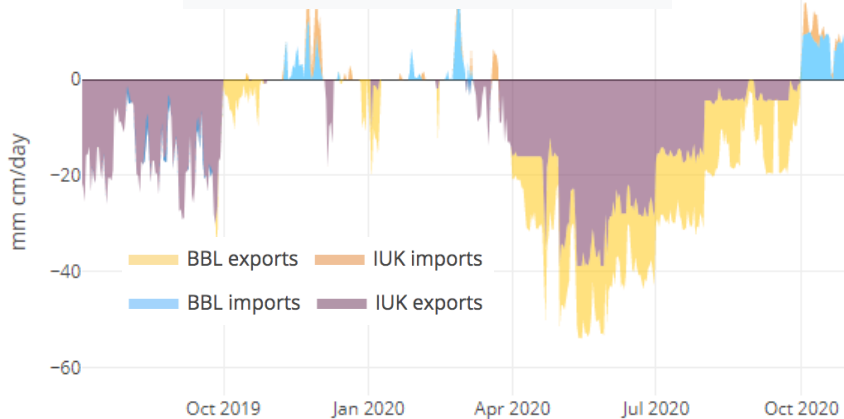
NBP-TTF SPREADS



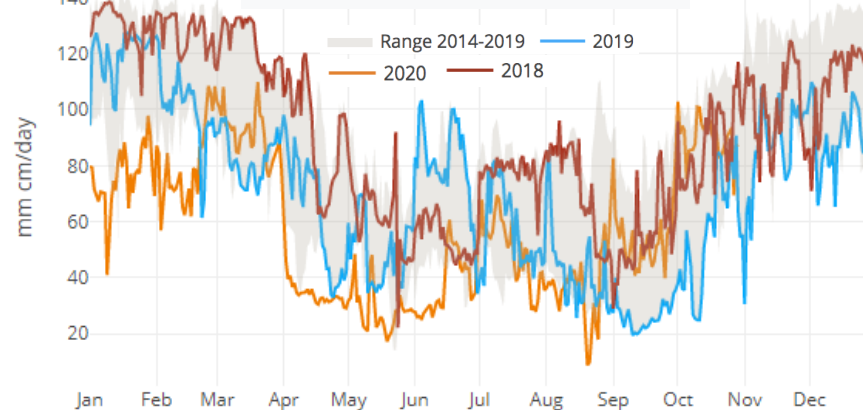
NBP-ZEE SPREADS



CONTINENT TO UK PIPELINE GAS FLOWS



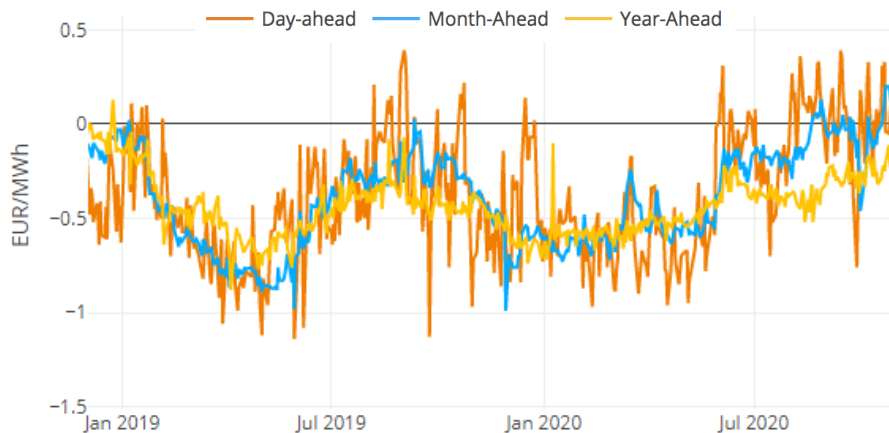
NORWEGIAN GAS EXPORTS TO THE UK



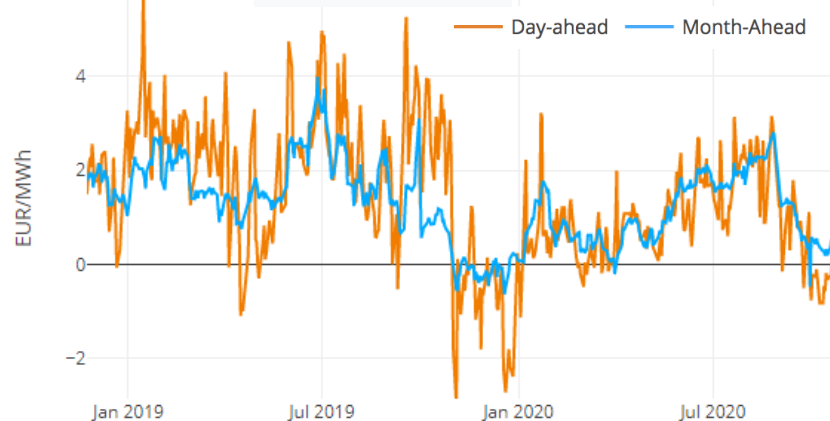
The UK was as affected as the Netherlands by the relative weakness of Norwegians flows. But it has been more impacted by low LNG supply in Europe during the summer. This supported the NBP-TTF spreads.

French spreads

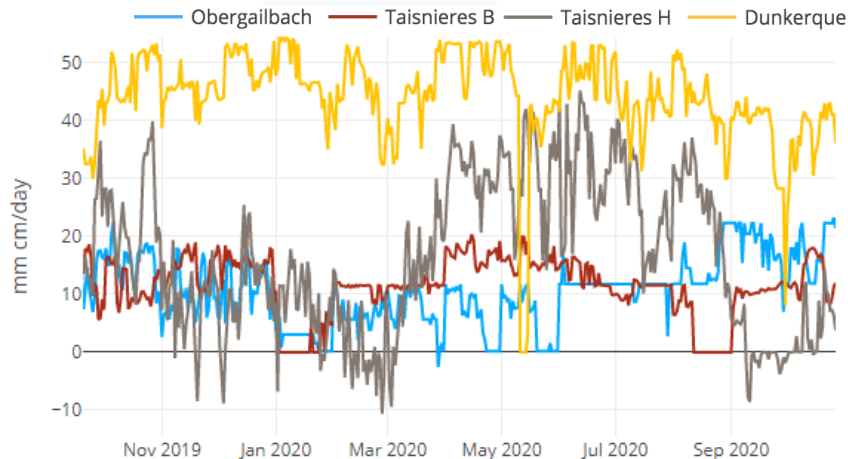
PEG-NGC SPREADS



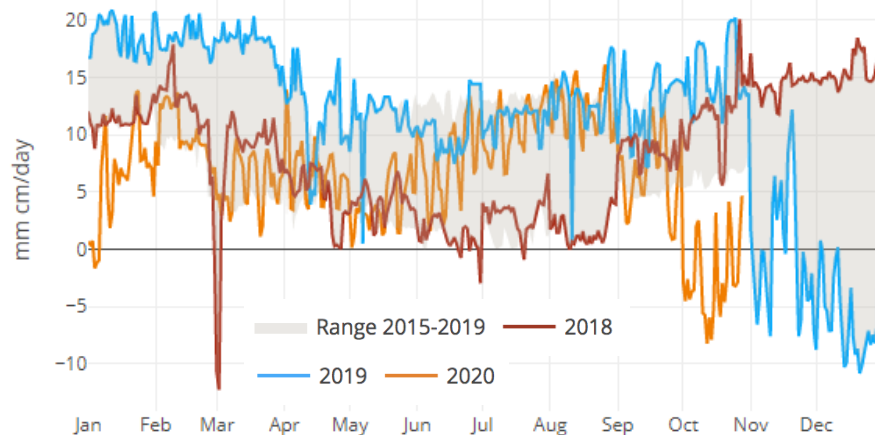
SPAIN-PEG SPREADS



FRANCE PIPELINE GAS IMPORTS

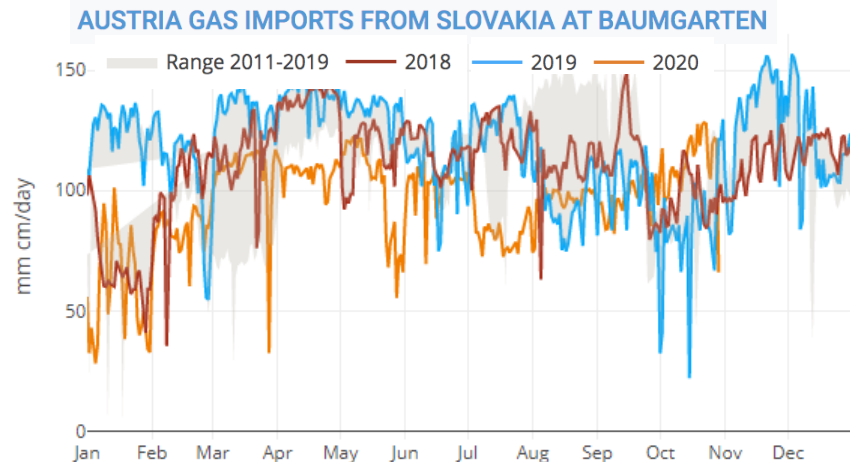
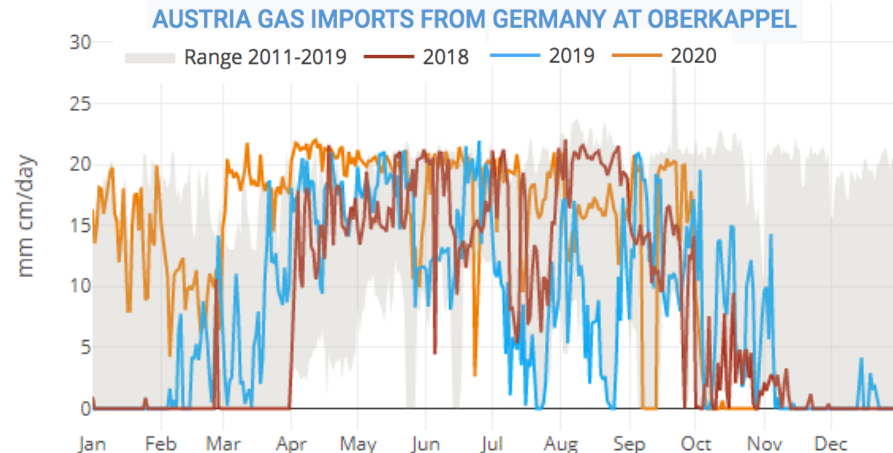
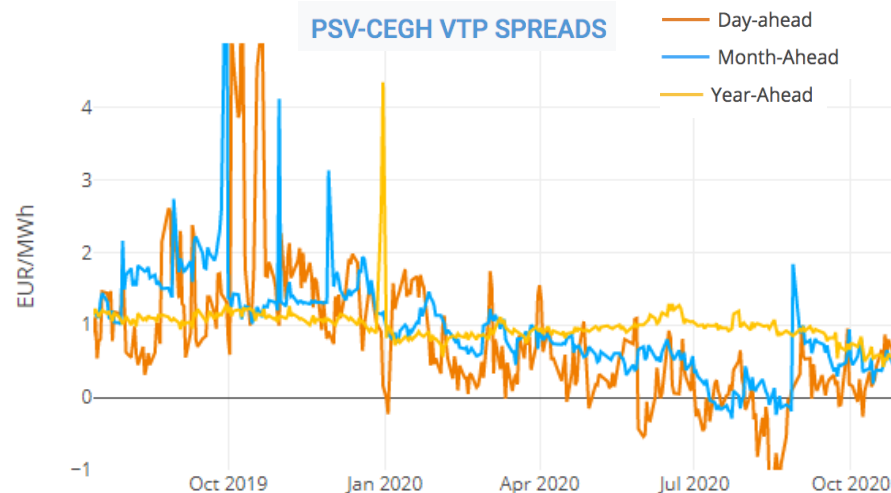
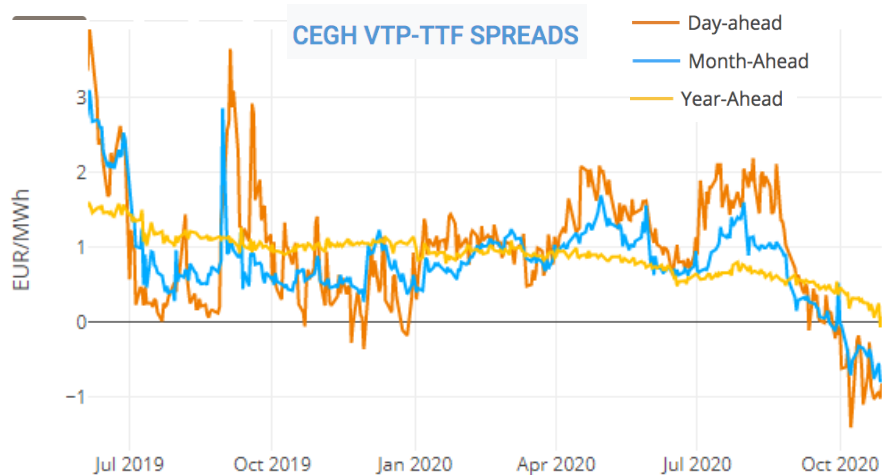


SPAIN NET PIPELINE IMPORTS FROM FRANCE



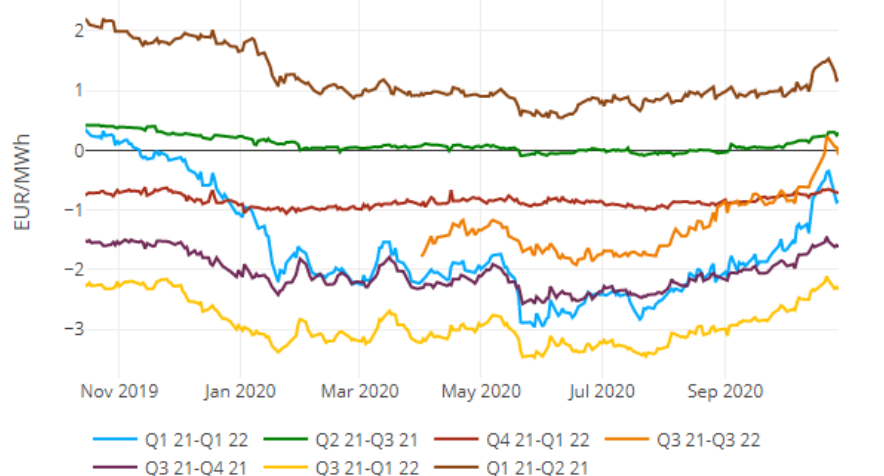
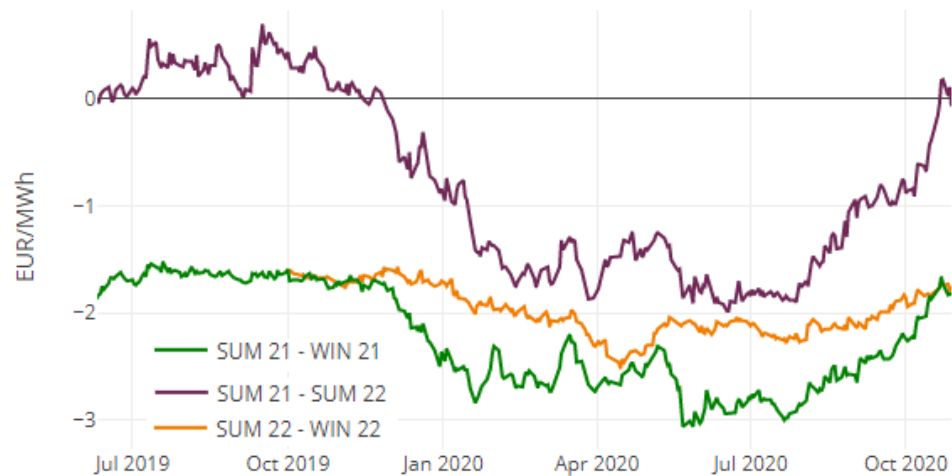
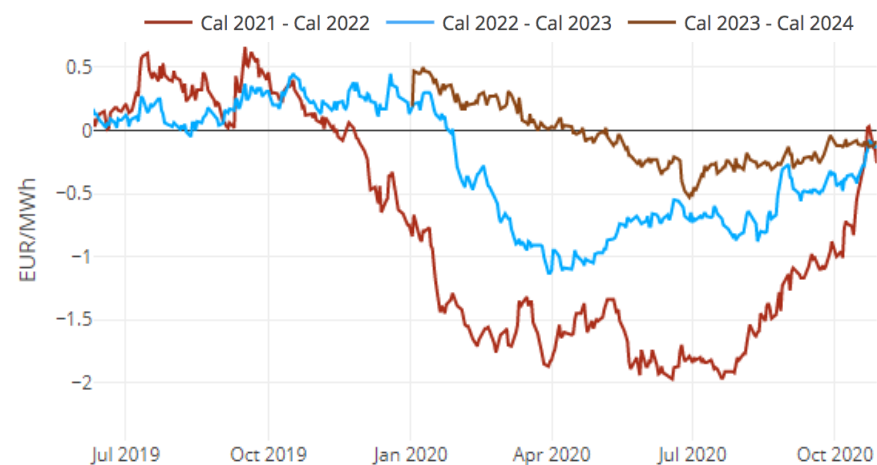
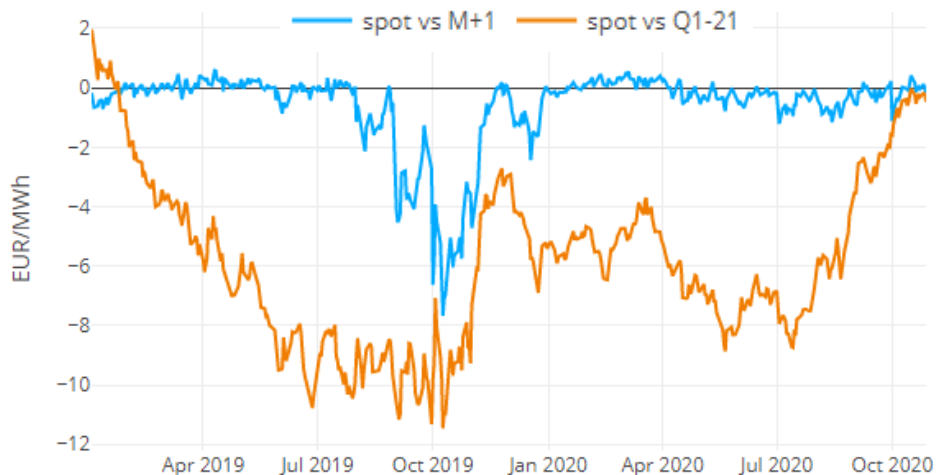
With lower LNG supply in Europe this summer and a gas balance more dependent on Norwegian supply, French PEG prices gradually reduced their discount against their German, Spanish and Italian counterparts.

Austrian spreads



Comfortable Russian flows (relative to Norway and Netherlands) pushed the CEGH VTP-TTF spreads significantly down from August.

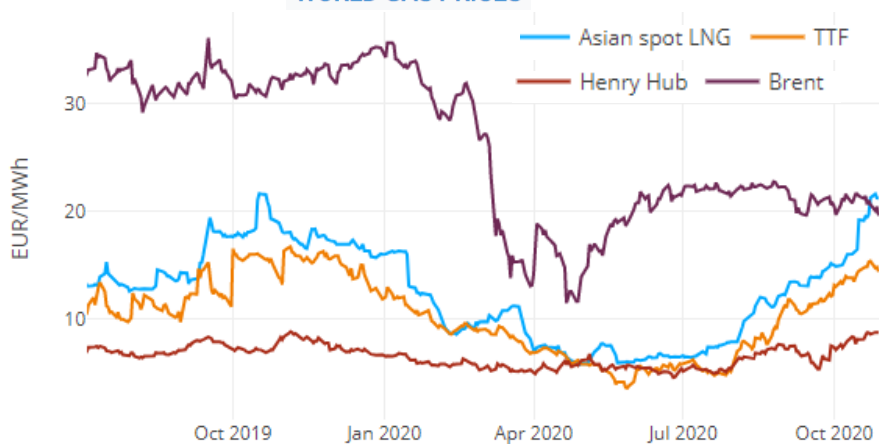
TTF time spreads



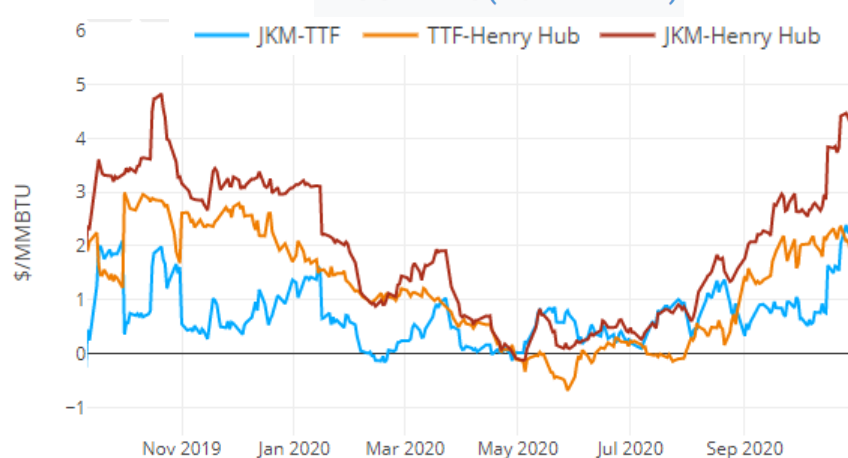
The gradual tightening of European gas balances (and in the Netherlands in particular) led to a sharp rise in TTF spot and near curve prices. The price contango has greatly reduced and seasonal contracts even reverted to backwardation.

World spreads

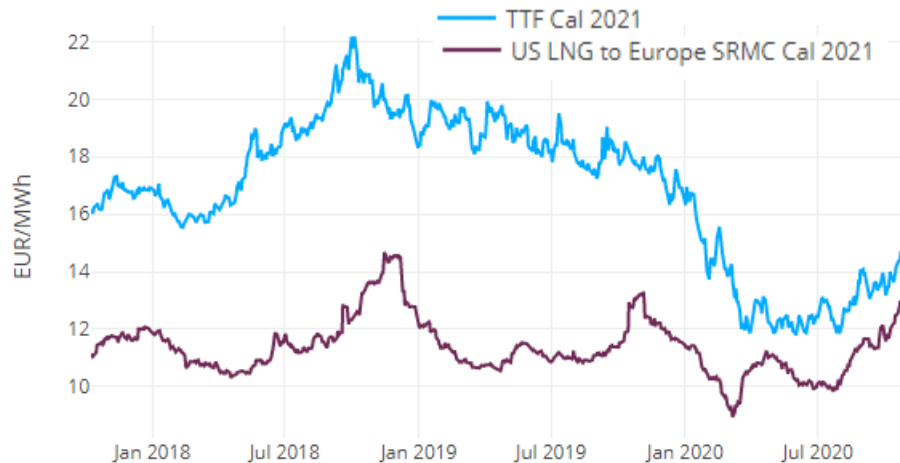
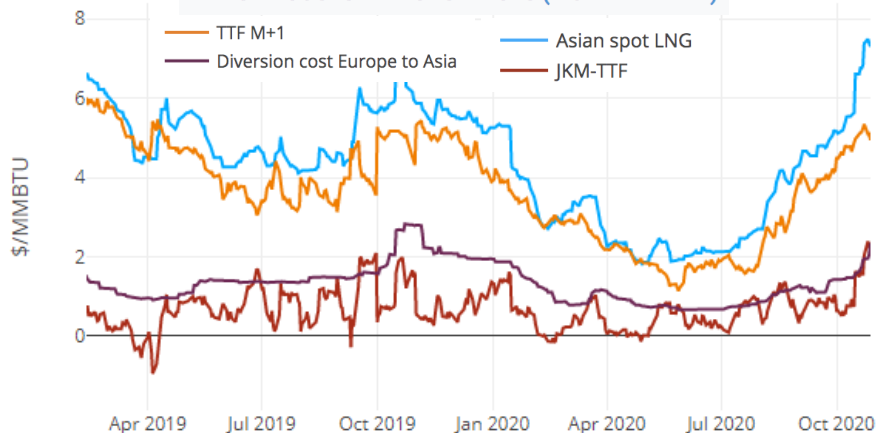
WORLD GAS PRICES



LNG SPREADS (MONTH-AHEAD)



FREIGHT COSTS AND GAS PRICES (MONTH-AHEAD)



A strong rebound in LNG demand in Asia and Middle East from August while supply remained tight (due to price-response cuts, particularly in the USA, and unplanned outages) led to a sharp rise in JKM prices. European prices initially followed the uptrend as the region needed LNG to compensate the weakness in domestic production and pipeline imports, but they weakened recently amid weak demand outlook.

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 - (iii) agrees that a copy of the recording of the conversations and communications referred to herein will be available upon request from the date of the conversation or communication for a period of five years, and, where requested by a competent authority, for a period of up to seven years, and
 - (iv) agrees, to the extent permitted or required by applicable law, that recordings may be submitted as evidence in any dispute or other proceedings in relation to this Agreement or any transactions, including in relation to any enquiry by any competent authority.