

ANNEX V

Template for the national risk assessment

General information

Name of the competent authority responsible for the preparation of the present risk assessment⁽¹⁾.

1. Description of the system

1.1. Provide a brief consolidated description of the regional gas system for each risk group⁽²⁾ the Member State participates in, covering:

- (a) the main gas consumption figures⁽³⁾: annual final gas consumption (bcm and MWh) and breakdown per type of customers⁽⁴⁾, peak demand (total and breakdown per category of consumer in mcm/d);
- (b) a description of the functioning of the gas system(s) in the relevant risk groups: main flows (entry/exit/transit), entry/exit point's infrastructure capacity to and out of the risk groups' region(s) and per Member State, including utilisation rate, LNG facilities (maximal daily capacity, utilisation rate and access regime), etc.;
- (c) a breakdown, to the extent possible, of percentage gas import sources per country of origin⁽⁵⁾;
- (d) a description of the role of storage facilities relevant for the risk group, including cross-border access:
 - (i) the storage capacity (total and working gas) compared to heating season demand;
 - (ii) the maximal daily withdrawal capacity at different filling levels (ideally with full storages and end-of-season levels);
- (e) a description of the role of domestic production in the risk group(s):
 - (i) the volume of production with regard to the annual final gas consumption;
 - (ii) the maximal daily production capacity and description of how it can cover maximum daily consumption;
- (f) a description of the role of gas in the electricity production (e.g. importance, role as a back-up for renewables), including gas-fired generating capacity (total (MWe) and as percentage of the total generating capacity) and cogeneration (total (MWe) and as percentage of the total generating capacity).

1.2. Provide a brief description of the gas system of the Member State, covering:

- (a) the main gas consumption figures: annual final gas consumption (bcm) and breakdown by type of customers, peak demand (mcm/d);
- (b) a description of the functioning of the gas system at national level, including infrastructure (to the extent not covered by point 1.1(b)). If applicable, include L-gas system;
- (c) the identification of the key infrastructure relevant for the security of gas supply;
- (d) a breakdown, to the extent possible, at national level of gas import sources per country of origin;

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- (e) a description of the role of storage and include:
 - (i) the storage capacity (total and working) compared to heating season demand;
 - (ii) the maximal daily withdrawal capacity at different filling levels (ideally with full storages and end-of-season levels);
- (f) a description of the role of domestic production and include:
 - (i) the volume of production with regard to the annual final gas consumption;
 - (ii) the maximal daily production capacity;
- (g) a description of the role of gas in the electricity production (e.g. importance, role as a back-up for renewables), including gas-fired generating capacity (total (MWe) and as percentage of the total generating capacity) and cogeneration (total (MWe) and as percentage of the total generating capacity).

2. Infrastructure standard (Article 5)

Describe how the infrastructure standard is complied with, including the main values used for the $N - 1$ formula and alternative options for its compliance (with directly connected Member States, demand-side measures) and the existing bidirectional capacities, as follows:

- (a) $N - 1$ formula
 - (i) the identification of the single largest gas infrastructure;
 - (ii) the calculation of the $N - 1$ formula at national level;
 - (iii) a description of the values used for all elements in the $N - 1$ formula, including intermediate values used for their calculation (e.g. for EP_m indicate the capacity of all entry points considered under this parameter);
 - (iv) an indication of the methodologies used, if any, for the calculation of parameters in the $N - 1$ formula (e.g. D_{max}) (use annexes for detailed explanations);
 - (v) an explanation of the results of the calculation of the $N - 1$ formula considering the level of storages at 30 % and 100 % of the maximum working volume;
 - (vi) an explanation of the main results of the simulation of the $N - 1$ formula using a hydraulic model;
 - (vii) if so decided by the Member State, a calculation of the $N - 1$ formula using demand-side measures:
 - calculation of the $N - 1$ formula in accordance with point 2 of Annex II,
 - description of the values used for all elements in the $N - 1$ formula, including intermediate figures used for the calculation (if different to the figures described under point 2(a)(iii)),
 - indicate the methodologies used, if any, for the calculation of parameters in the $N - 1$ formula (e.g. D_{max}) (use annexes for detailed explanations),

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- explain the market-based demand-side measures adopted/to be adopted to compensate a disruption of gas supply and its expected impact (D_{eff});
- (viii) if so agreed with the competent authorities of the relevant risk group(s) or with directly connected Member States, joint calculation(s) of the $N - 1$ formula:
 - calculation of the $N - 1$ formula in accordance with point 5 of Annex II,
 - description of the values used for all elements in the $N - 1$ formula, including intermediate values used for their calculation (if different to the figures described under point 2(a)(iii)),
 - indicate the methodologies and assumptions used, if any, for the calculation of parameters in the $N - 1$ formula (e.g. D_{max}) (use annexes for detailed explanations),
 - explain the agreed arrangements to ensure compliance with the $N - 1$ formula;
- (b) bi-directional capacity
 - (i) indicate the interconnection points equipped with bidirectional capacity and the maximal capacity of bi-directional flows;
 - (ii) indicate the arrangements governing the use of the reverse flow capacity (e.g. interruptible capacity);
 - (iii) indicate interconnection points where an exemption has been granted in accordance with Article 5(4), the duration of the exemption and the grounds on which it was granted.

3. Identification of risks

Describe the risk factors which could have negative impact on the security of gas supply in the Member State, their likelihood and consequences.

Non-exhaustive list of types of risk factors that have to be included in the assessment only if applicable according to the competent authority:

- (a) political
 - gas disruption from third countries because of different reasons,
 - political unrest (either in country of origin or in transit country),
 - war/civil war (either in country of origin or in transit country),
 - terrorism;
- (b) technological
 - explosion/fires,
 - fires (internal to a given facility),
 - leakages,
 - lack of adequate maintenance,
 - equipment malfunction (failure to start, failure during working time, etc.),
 - lack of electricity (or other energy source),
 - ICT failure (hardware or software failure, internet, SCADA problems, etc.),
 - cyber-attack,

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- impact due to excavation works (digging, piling), ground works, etc.;
- (c) commercial/market/financial
 - agreements with third-country suppliers,
 - commercial dispute,
 - control of infrastructure relevant for the security of gas supply by third-country entities, which may imply, among others, risks of underinvestment, undermining diversification or non-respect of Union law,
 - price volatility,
 - underinvestment,
 - sudden, unexpected peak demand,
 - other risks which could lead to structural underperformance;
- (d) social
 - strikes (in different related sectors, such as the gas sector, ports, transport, etc.),
 - sabotage,
 - vandalism,
 - theft;
- (e) natural
 - earthquakes,
 - landslides,
 - floods (heavy rain, river),
 - storms (sea),
 - avalanches,
 - extreme weather conditions,
 - fires (external to the facility, like nearby forests, grassland, etc.).

Analysis

- (a) identify the relevant risk factors for the Member State, including their likelihood and impact;
- (b) describe the criteria used to determine whether a system is exposed to high/unacceptable risks;
- (c) set a list of relevant risk scenarios in accordance with the risk factors and their likelihood and describe how the selection was made.

4. Risk analysis and assessment

Analyse the set of relevant risk scenarios identified under point 3. In the simulation of risk scenarios include the existing security of gas supply measures, such as the infrastructure standard calculated using the N – 1 formula as set out in point 2 of Annex II, and the gas supply standard. Per risk scenario:

- (a) describe in detail the risk scenario, including all assumptions and, if applicable, the underlying methodologies for their calculation;
- (b) describe in detail the results of the simulation carried out, including a quantification of the impact (e.g. volumes of unserved gas, the socioeconomic impact, the impact on district heating, the impact on electricity generation).

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5. Conclusions

Describe the main results of the common risk assessment the Member States has been involved in, including the identification of risk scenarios that require further action.

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- (1) Where this task has been delegated by the competent authority, indicate the name of the body/(ies) responsible for the preparation of the present risk assessment on its behalf.
- (2) For the sake of simplicity, present the information at the highest level of the risk groups if possible and merge details as necessary.
- (3) For the first assessment, include data from the last two years. For updates, include data from the last four years.
- (4) Including industrial customers, electricity generation, district heating, residential and services and other (specify the type of customers included here). Indicate as well the volume of consumption of protected customers.
- (5) Describe the methodology applied.

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