CHAPTER 4: Emergency response systems of individual IEA countries

The ability of the International Energy Agency (IEA) to co-ordinate a swift and effective international response to an oil supply disruption stems from the strategic efforts of member countries to maintain a state of preparedness at the national level. Energy security is more than just oil, as the role of natural gas continues to increase in the energy balances of IEA countries. The most recently completed cycle of Emergency Response Reviews (ERRs) reflected this change by assessing, for the first time, the member countries’ exposure to gas disruptions and their ability to respond to such crises. This chapter provides general profiles of the oil and natural gas infrastructure and emergency response mechanisms for 29 IEA member countries.

Each country profile is set out in the following sequence:

**Key data**
- Key oil data, 1990-2018
- Key natural gas data, 1990-2018
- Total primary energy source (TPES) trend, 1973-2012

**Infrastructure map**

**Country overview**

**OIL**

- Market features and key issues
  - Domestic oil production
  - Oil demand
  - Imports/exports and import dependency
  - Oil company operations

- Oil supply infrastructure
  - Refining
  - Ports and pipelines
  - Storage capacity

- Decision-making structure

- Stocks
  - Stockholding structure
  - Crude or products
  - Location and availability
  - Monitoring and non-compliance
  - Stock drawdown and timeframe
  - Financing and fees

- Other measures
  - Demand restraint
  - Fuel switching
  - Other

**GAS**

- Market features and key issues
  - Gas production and reserves
  - Gas demand
  - Gas import dependency
  - Gas company operations

- Gas supply infrastructure
  - Ports and pipelines
  - Storage

- Emergency policy
  - Emergency response measures
Poland

Key data

Table 4.21.1  Key oil data

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</thead>
<tbody>
<tr>
<td><strong>Production (kb/d)</strong></td>
<td>3.0</td>
<td>14.5</td>
<td>28.0</td>
<td>19.3</td>
<td>18.2</td>
<td>19.8</td>
<td>13.8</td>
</tr>
<tr>
<td><strong>Demand (kb/d)</strong></td>
<td>280.1</td>
<td>411.3</td>
<td>470.4</td>
<td>564.2</td>
<td>559.5</td>
<td>521.6</td>
<td>560.4</td>
</tr>
<tr>
<td><em>Motor gasoline</em></td>
<td>71.5</td>
<td>115.6</td>
<td>92.8</td>
<td>97.7</td>
<td>92.4</td>
<td>89.3</td>
<td>-</td>
</tr>
<tr>
<td><em>Gas/diesel oil</em></td>
<td>101.5</td>
<td>149.1</td>
<td>195.2</td>
<td>264.1</td>
<td>274.0</td>
<td>253.0</td>
<td>-</td>
</tr>
<tr>
<td><em>Residual fuel oil</em></td>
<td>51.7</td>
<td>40.6</td>
<td>36.6</td>
<td>30.3</td>
<td>26.0</td>
<td>20.7</td>
<td>-</td>
</tr>
<tr>
<td><em>Others</em></td>
<td>55.5</td>
<td>106.0</td>
<td>145.9</td>
<td>172.0</td>
<td>167.0</td>
<td>158.6</td>
<td>-</td>
</tr>
<tr>
<td><strong>Net imports (kb/d)</strong></td>
<td>277.1</td>
<td>396.8</td>
<td>442.4</td>
<td>544.9</td>
<td>541.3</td>
<td>501.8</td>
<td>546.5</td>
</tr>
<tr>
<td><strong>Import dependency (%)</strong></td>
<td>98.9</td>
<td>96.5</td>
<td>94.0</td>
<td>96.6</td>
<td>96.7</td>
<td>96.2</td>
<td>98</td>
</tr>
<tr>
<td><strong>Refining capacity (kb/d)</strong></td>
<td>0.0</td>
<td>382.0</td>
<td>350.0</td>
<td>507.0</td>
<td>507.0</td>
<td>507.0</td>
<td>-</td>
</tr>
<tr>
<td><strong>Oil in TPES</strong> (%)</td>
<td>13</td>
<td>21</td>
<td>23</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>-</td>
</tr>
</tbody>
</table>

* Forecast.
** TPES data for 2012 are estimates.

Table 4.21.2  Key natural gas data

<table>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Production (mcm/y)</strong></td>
<td>4 095</td>
<td>5 224</td>
<td>6 057</td>
<td>6 079</td>
<td>6 247</td>
<td>6 193</td>
<td>5 684</td>
</tr>
<tr>
<td><strong>Demand (mcm/y)</strong></td>
<td>12 096</td>
<td>13 346</td>
<td>16 231</td>
<td>17 155</td>
<td>17 178</td>
<td>18 112</td>
<td>18 512</td>
</tr>
<tr>
<td><em>Transformation</em></td>
<td>833</td>
<td>947</td>
<td>2 076</td>
<td>2 059</td>
<td>2 127</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td><em>Industry</em></td>
<td>6 060</td>
<td>5 517</td>
<td>6 381</td>
<td>6 292</td>
<td>6 662</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td><em>Residential</em></td>
<td>3 995</td>
<td>4 083</td>
<td>4 280</td>
<td>4 690</td>
<td>4 312</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td><em>Others</em></td>
<td>1 208</td>
<td>2 799</td>
<td>3 494</td>
<td>4 114</td>
<td>4 077</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td><strong>Net imports (mcm/y)</strong></td>
<td>8 001</td>
<td>8 122</td>
<td>10 174</td>
<td>11 076</td>
<td>10 931</td>
<td>11 919</td>
<td>12 828</td>
</tr>
<tr>
<td><strong>Import dependency (%)</strong></td>
<td>66.1</td>
<td>60.9</td>
<td>62.7</td>
<td>64.6</td>
<td>63.6</td>
<td>65.8</td>
<td>69</td>
</tr>
<tr>
<td><strong>Natural gas in TPES (%)</strong></td>
<td>9</td>
<td>11</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>14</td>
<td>-</td>
</tr>
</tbody>
</table>

* 2012 data are estimates.
** Forecast.

Note: This section on the emergency response systems of individual member countries was written by the IEA. All countries provided valuable information and comments. All opinions, errors and omissions are solely the responsibility of the IEA.
Figure 4.21.1  Total primary energy source (TPES) trend, 1973-2012
CHAPTER 4  Emergency response systems of individual IEA countries

Poland    361

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Map 4.21.1  Oil infrastructure of Poland

This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.
Country overview

Oil remains the second biggest energy source in Poland, representing 25% of the country’s total primary energy supply (TPES) in 2012. Poland’s oil demand has increased from 411 thousand barrels per day (kb/d) in 2000 to 522 kb/d in 2012, with an annual average growth rate of 2%. The transport sector accounted for around 64% of Poland’s total oil consumption in 2011. With a small indigenous oil production, almost all the crude oil used in Poland is imported. Poland’s oil imports in 2012 were 608 kb/d, consisting of 500 kb/d of crude oil, natural gas liquids (NGLs) and feedstock, and 104 kb/d of refined products. The Russian Federation is Poland’s single largest source of crude oil imports and provided about 96% of the total in 2012. Crude oil imports from Russia are through the Druzhba pipeline. In 2012, about 36% of Poland’s refined product imports also came from Russia, while 20% of refined products were imported from Germany – Poland’s two most important import sources. There are six refineries in Poland, with a total primary distillation capacity of around 580 kb/d. Polski Koncern Naftowy (PKN) Orlen and Grupa Lotos account for almost the entire Polish refining industry.

Poland meets its stockholding obligation to the International Energy Agency (IEA) and the European Union by holding 14 days of government stocks and by placing a stockholding obligation on industry. All liquid fuel producers and importers are obliged to hold 76 days of stock based on their production or imports of crude oil and liquid fuels from the previous calendar year. Under the direction of the Ministry of Economy, the Material Reserve Agency (MRA) manages the state-owned oil emergency reserves and also monitors the stockholding obligation on industry. The use of emergency oil stocks is central to Poland’s emergency response policy. Demand restraint is considered as a secondary response measure which might be introduced in a long-lasting and severe crisis.

The share of natural gas in the country’s TPES stood at 14% in 2012. Gas demand has steadily increased from 13.3 billion cubic metres (36.6 million cubic metres per day) in 2000 to 18.1 bcm (50 mcm/d) in 2012, with an annual average growth rate of 2.6%. Poland produced about 6.1 bcm (16.7 mcm/d) of natural gas in 2012, which accounted for around 34% of the country’s demand. Poland’s total natural gas imports in 2012 amounted to 12 bcm (33 mcm/d). Russia has been the principal source of natural gas imports, accounting for 80% of total gas imports in 2012.

Diversification of supply sources and routes, development of natural gas infrastructures for such diversification, expansion of underground storage capacity and an increase in domestic gas production are the key elements of Poland’s gas security policy. Gas traders and importers are obliged to maintain 30 days of compulsory gas stocks in Poland.

The Minister of Economy is authorised to decide on the use of compulsory stocks. GAZSYSTEM, the transmission system operator (TSO) for natural gas, is responsible for conducting a withdrawal of compulsory gas stocks, in co-ordination with the company Polish Petroleum and Gas Mining, Poland’s storage system operator (SSO). The maximum withdrawal rate from domestic storage facilities is some 37 mcm/d, equivalent to about 74% of average gas demand in 2012.
Oil

Market features and key issues

Domestic oil production
Poland has no significant proven reserves of crude oil, and indigenous crude oil production is very small. In 2012, Poland produced 19.8 kb/d of crude oil, which covered less than 4% of the country’s total oil demand.

Oil demand
Poland’s oil demand increased from 411 kb/d in 2000 to 521 kb/d in 2012, with an annual average growth rate of 2%.

Figure 4.21.2 Oil demand by product, 1998–2012

The transport sector accounted for 64% of the total oil consumption in Poland in 2012. In terms of oil demand by product, demand for diesel increased by 70% in the period between 2000 and 2012 (from 149 kb/d to 253 kb/d), while demand for gasoline declined by 23% in the same period (from 115.6 kb/d to 89.3 kb/d). The use of LPG has risen over the past decade, as this fuel has become more competitive relative to gasoline. Demand for LPG has more than doubled from 35 kb/d in 2000 to 76 kb/d in 2012.
Imports/exports and import dependency

Poland’s oil imports in 2012 were 608 kb/d, consisting of 500 kb/d crude oil, NGLs and feedstock, and 108 kb/d refined products. Russia is the single largest source of crude oil imports and provided 96% of the total in 2012. Crude oil imports from Russia are delivered via the Druzhba pipeline. In 2012, the remaining portions of crude oils were imported from Norway (3% of the total) and several other countries, including Iraq, Algeria and Saudi Arabia. Crude oil is imported by refiners mainly based on commercial long-term contracts.

In 2012, 36% of the refined product imports came from Russia, 20% from Germany, 10% from Kazakhstan, 8% from Slovakia and 7% from Belarus. The remaining 19% came from a wide variety of other countries.

Poland exported over 110 kb/d of oil in 2012, consisting of 4 kb/d of crude oil and 106 kb/d of refined products – a sharp increase from 70 kb/d in 2010 and just 40 kb/d in 2000. All crude oils were exported to Germany, while refined products were destined principally to the Netherlands (27%), Denmark (9%) and the United Kingdom (7%).
Oil company operations

Poland has a dense network of fuel stations owned by Polish companies PKN Orlen S.A., and Grupa LOTOS SA, as well as stations belonging to foreign companies such as BP, Shell, Statoil and Lukoil and independent operators. The total number of fuel stations amounted to over 6 700 in 2012, of which some 3 000 were owned by independent operators.

Oil supply infrastructure

Refining

Poland has six refineries with a total primary distillation capacity of around 580 kb/d – or 28 million tonnes (Mt) – per year. PKN Orlen and Grupa Lotos account for almost the entire Polish refining activity.

Płock Refinery, which is owned by PKN Orlen and located in the central region of the country, has a total crude distillation capacity of 355 kb/d. Grupa Lotos owns Gdansk Refinery, the second largest refinery (216 kb/d) in Poland. These two major refineries account for over 95% of the country’s total refining capacity. Both Płock Refinery and Gdansk Refinery process mainly REBCO (Russian Export Blend Crude Oil).

The remaining four refineries are located in the southern part of Poland and have very small processing capacities. Two of them (in Jasło and Czechowice) are no longer operational.

In 2012, the four operating refineries (in Płock, Gdansk, Jedlicze and Trzebinia) processed around 554 kb/d of crude oil (including NGL and feedstocks). The utilisation rate in 2012 was 96%. In the same year, the composition of total production from these refineries was gasoline (17%), gas/diesel oil (44%), residual fuel oil (11%), naphtha (7%) and LPG (3%). The refineries were able to meet or exceed demand in all products except LPG and ethane (by a shortfall of 59.5 kb/d) and gas/diesel oil (by a slight shortfall of 9 kb/d) in 2012.

Figure 4.21.5 Refinery output vs. demand, 2012
Ports and pipelines

Poland has three oil port terminals. The main oil port terminal is in Gdańsk and has a capacity of about 700 kb/d (34 Mt/yr). Naftoport Ltd. owns and operates the four jetties in Gdańsk Port. Some 67% of the Naftoport’s shares are held by the joint stock Oil Pipeline Operation Company “Friendship” SA (PERN). The remaining portions are held by PKN Orlen (18%), Grupa Lotos (9%) and others.

In 2012, over 10 Mt of crude oils and fuels were loaded and discharged at Naftoport’s jetties in the Port of Gdańsk, of which 74% were crude oils and 24% refined products. The Port of Gdańsk is used primarily for exports of Russian crude oils. In addition, there are two small oil terminals for imports of oil products; the Port of Gdynia (with a capacity of 3.5 Mt/yr or 70 kb/d) and Szczecin (1.5 Mt/yr or 30 kb/d).

The Druzhba and the Pomeranian are the main pipelines for transporting crude oil in Poland. These two pipelines supply Russian crude directly to the refineries at Płock and Gdańsk, to Naftoport for exports and transit volumes on to the German refineries at Schwedt and Spergau.

The Polish branch of the Druzhba pipeline is composed of two main sections. The eastern section runs from the Belarus border in Adamowo to Płock, which has a nominal capacity of some 870 kb/d (43 Mt/yr), however, with the use of a drag-reducing agent (DRA) it can transport up to 1 mb/d (50 Mt/yr). A third line, which is under construction, will help to keep the capacity of the eastern section on the level of 1 mb/d (50 Mt/yr) with a significant reduction in operating costs. The western section of the Druzhba pipeline links Płock to the German border in Schwedt, which has a capacity of some 545 kb/d (27 Mt/yr).

The Pomeranian Pipeline can transport crude oil in two directions between Gdańsk and Płock. In the direction from Gdańsk to Płock, the line has a capacity of 0.6 mb/d (30 Mt/yr), while the capacity is 0.45 mb/d (22 Mt/yr) in the opposite direction. This is the route for Russian oil destined for the refinery in Gdańsk and also for export through Naftoport.

Storage capacity

In 2012, Poland had a total storage capacity of 72.7 mb. Roughly 60% of its total storage capacity is used for crude oil.

In terms of crude storage capacity by owner, 60% of the total storage capacity was owned by PKN Orlen. The remaining portions were held by PERN (34%) and Grupa Lotos (6%). In terms of product storage capacity, OLPP, part of the PERN Group, is the biggest storage capacity holder (49%); this is followed by PKN Orlen (33%) and Grupa Lotos (14%).

PERN plans to expand its total storage capacity by about 21.4 mmb by 2015, by constructing additional crude storage depots in Płock, Gdańsk and Adamowo.

In response to the expected increase in demand for storage capacity, PERN and Grupa Lotos are considering building underground salt caverns for crude oil and fuel storage in the Pomorski (Pomerania) region near Gdańsk. The caverns are projected to have a total capacity of around 38 mb.

Emergency policy

The Minister of Economy is responsible for Poland’s energy security policy, including its oil emergency response policy. The Governmental Group on Energy Emergency Management serves as the core body of the Polish national emergency strategy organisation (NESO). The group is headed by the Deputy Minister of Economy and is
composed of representatives from the relevant ministries and governmental entities such as the Energy Regulatory Office and the MRA.

In the event of a domestic supply disruption, the response action is undertaken upon the request of voivods (local authorities), producers or traders of fuels or an eligible entity. Each request is evaluated by the Department of Oil and Gas of the Ministry of Economy, which proposes to the minister appropriate response measures to be taken. During a global supply disruption, the Minister of Economy will make the political decision to participate in an IEA collective action and on emergency response measures.

Stocks

Stockholding structure
Poland meets its stockholding obligation to the IEA and the European Union by holding 14 days of government stocks and by placing a stockholding obligation on industry.

All liquid fuel producers and importers are obliged to hold minimum stock levels based on their production or imports of crude oil and liquid fuels during the previous calendar year.

Under the direction of the Ministry of Economy, the MRA manages the state-owned oil emergency reserves and also monitors the stockholding obligation on industry.

The Act of 16 February 2007 also obliges producers and traders to maintain mandatory stocks of LPG at levels corresponding to at least 30 days from the end of 2011.

Crude or products
At the end of December 2012, the MRA held some 8.2 mb of government stocks. Nearly 90% of the public stocks were maintained in the form of crude oil, while the remainder was in middle distillates (10%) and motor gasoline (1%).

Industry stocks in Poland at the end of December 2012 stood at some 55.3 mb, equal to 87% of the country’s total stocks (117 days of 2011 net imports). Obligatory industry stocks may be commingled with operational and commercial stocks.

Location and availability
Poland has no bilateral agreements on stockholding with other countries. No public stocks can be held outside the territory of Poland.

The public stocks of crude oil are held mainly in storage tanks rented from PERN, with some amounts in the salt dome storage facilities of PKN Orlen. Public gasoline and diesel oil stocks are held in storage rented from the OLPP, Poland’s leading company that offers storage services of emergency stocks and obligatory reserves of petroleum products.

Monitoring and non–compliance
Oil companies with stockholding obligations need to submit data on the quantity of stocks and their location MRA by submission of monthly reports on oil stocks. Non-compliance with this reporting obligation is subject to financial penalties. The MRA submits the consolidated data to the Ministry of Economy on a monthly basis.

Stock drawdown and timeframe
The use of emergency oil stocks is central to Poland’s emergency response policy. The Minister of Economy is authorised to decide on the release of government stocks or mandatory industry stocks.
Public stocks could be made available to the oil industry through a number of options, including auction, tender or sales to specific entities, although these specific companies are not identified in advance. In case of a release of state stocks of crude oil, refiners may be required to process crude oil for specific products according to instructions from the ministry.

Industry stocks would be made available either by the reduction of the minimum stockholding obligation or by instructing industry to make a compulsory stockdraw.

The Council of Ministers has, upon a proposal of the Minister of Economy, the authority to include commercial stocks owned by producers and traders in compulsory stocks.

**Financing and fees**

Government stocks are financed from the state budget. No financial assistance or public funding is provided to industry to meet emergency reserve requirements; these costs are therefore passed on to the consumer.

**Other measures**

**Demand restraint**

Demand restraint is considered as a secondary response measure which might be introduced in a long-lasting and severe crisis. The decision-making procedure of demand restraint measures is expected to be longer and more complex than that of stock release, as introduction of these demand restraint measures needs the ordinance of the Council of Ministers.

Poland’s demand restraint measures would range from light-handed measures to compulsory measures. Light-handed measures include information campaigns to promote eco-driving and use of public transport. Compulsory measures include restrictions on trade in fuel by limiting the maximum quantity of fuel sold by the filling station, the maximum quantity of fuel which a consumer may purchase in a single transaction and the opening hours of petrol stations for fuel sales, as well as restrictions on fuel consumption through speed limits, limiting or ban on distribution of fuel in canisters, a driving ban, rationing of fuel, etc.

Implementation of demand restraint measures is not planned in a pre-crisis situation or in the early stage of a crisis, because of the restrictive nature of the measures. No automatic triggers exist to implement specific demand restraint measures.

**Fuel switching**

Short-term fuel switching from oil to other fuels is not considered an emergency response measure in Poland, as such fuel-switching capacity in the transformation sector is estimated to be insignificant. Poland does not have a specific policy or legislation to promote short-term fuel switching in an emergency.

**Other**

Because of Poland’s small indigenous oil production (less than 4% of total demand) and lack of spare crude oil production capacity, surge production of oil is not considered an emergency response measure in Poland.
Gas

Market features and key issues

Gas production and reserves
According to the BP Statistical Review of World Energy 2013, Poland possessed 100 bcm of proven reserves of natural gas at the end of 2012; this would be sufficient for approximately 27 years at current production rates.

Poland produced some 6.2 bcm (17 mcm/d) of natural gas in 2012, which accounted for about 34% of the country’s demand. The Polish Petroleum and Gas Mining Company (PGNiG) is the dominant producer of gas and crude oil in Poland, representing 98% of domestic gas production from conventional gas deposits.

Unconventional gas might offer a potential to change the energy landscape in Poland. Preliminary estimates suggest that Poland could have between 1.4 to 3 trillion m³ of unconventional gas. If the shale gas resources are confirmed, theoretically their large-scale exploitation could render Poland independent of imports and turn the country into a net exporter.

Gas demand
Gas demand steadily increased from 13.3 bcm (36.6 mcm/d) in 2000 to 18.1 bcm (50 mcm/d) in 2012, with an annual average growth rate of some 2%. An 8% increase of demand, to 15.5 mcm, is forecast in 2018.

In 2011, the largest amount of natural gas, 39%, was consumed by Poland’s industry. The residential and commercial sectors consumed 25% and 15%, respectively, while just 7% was used for transformation (electricity and heat). Poland’s energy industry (most importantly refineries) consumed 7% of the total in 2011.

Figure 4.21.6 Natural gas consumption by sector, 1973-2011
Gas import dependency

Poland's total natural gas imports in 2012 amounted to some 12 bcm (32.8 mcm/d). Virtually all imported gas is supplied through pipelines by PGNiG except for very small quantities of LNG transported by PGNiG’s competitors by road in tankers.

Russia has been the principal source of natural gas imports. The share of Russian gas in Poland’s total gas imports stood at 80% in 2012, while gas imports from Germany accounted for 15% in the same year.

In October 2010 the 1996 long-term contract between PGNiG and Russia’s Gazprom was amended. Under this new contract arrangement, as of 2012 Gazprom will increase its gas supply to Poland to 11 bcm. The supply contract will end in 2022. The destination clause forbidding re-export of Russian gas to other countries was removed from this contract.

Gas company operations

PGNiG has a main position in both upstream and downstream sectors of the industry. It is practically the only importer of gas and it has booked nearly 100% of transmission capacity at all entry points. Being also the major domestic gas producer (98% of domestic production), it effectively controls the wholesale gas market.

PGNiG is also the only owner and operator of underground gas storage (UGS) capacity – so far no other company has decided to develop an UGS facility in Poland. In 2008, the regulator appointed PGNiG as the SSO for its USG facilities for 27 years.

As part of the market reform, the ownership of the gas transmission assets of the incumbent PGNiG were unbundled. An independent TSO fully owned by the state – OGP GAZ-SYSTEM – was established in 2004. In 2007, six regional distribution companies were legally unbundled from PGNiG and granted the status of distribution system operators (DSOs).

PGNiG is a leader on the retail market: several other companies (including G. EN Gaz Energia, CP Energia, EWE Polska, Enesta SA and KRI SA) have entered the market but their total market share was about 5% in 2012.
Gas supply infrastructure

Ports and pipelines

Poland is a key transit country for Russian gas to Western Europe through the Yamal pipeline. The Polish gas system is connected with the European gas network system but mostly along the east-west axis.

Natural gas is imported into the transportation system of Poland through four key entry points: Lasów (from Germany), Drozdowice (from Ukraine), Wysokoje (from Belarus) and Kondratki (from Belarus through the Yamal pipeline). The Polish gas transmission system currently includes 9,768 km of pipelines, 14 compressor stations and 854 gas stations.

The flow of gas through the Yamal pipeline has been reversible since the end of 2013.

Poland’s first LNG terminal is planned at Świnoujście. Polskie LNG SA, a 100% subsidiary of the OGP GAZ-SYSTEM SA, is to construct, own and operate the LNG terminal. In the first stage of operation, the LNG terminal will enable the regasification of 5 bcm (13.7 mcm/d) of natural gas annually. In the next stage, it will be possible to increase the dispatch capacity to 7.5 bcm/yr (20.5 mcm/d), depending on gas demand. In 2009, Qatargas and PGNiG signed a sales and purchase agreement for LNG supply from Qatar. Under the agreement, Qatargas will supply 1.5 bcm of LNG annually to PGNiG under a 20-year long-term agreement, starting in 2014.

Storage

There are eight underground gas storage facilities in operation in Poland. Their full capacity (1,838 mcm) is equal to 39 days of the average gas demand in 2011 and 55 days of average gas imports in 2011. The maximum withdrawal rate of these storage facilities is some 37 mcm/d, which covered about 79% of average gas demand in 2011 and 58% of the average daily demand in January 2011 (63.3 mcm/d). In the last decade, Poland’s highest average daily peak demand was in January 2006, reaching 77 mcm/d.

PGNiG owns all underground gas storage facilities in Poland. With the exception of the portion (50 mcm) made available to OGP GAZ-SYSTEM, PGNiG is the only user of gas storage facilities in Poland. PGNiG plans to expand the storage capacity from the current level of 1.8 bcm to 2.8 bcm by 2021.

Emergency policy

Diversification of supply sources and routes, development of natural gas infrastructures for such diversification (including construction of an LNG terminal and interconnectors), expansion of underground storage capacity, increasing domestic gas production and acquisition of shares in gas resources outside Poland are the key elements of Poland’s gas security policy.

Under the Act of 16 February 2007 (amended in 2011), energy enterprises running a business of international gas trading and import are obliged to maintain compulsory gas stocks in storage installations connected to the gas system within the territory of Poland. From 1 October 2012, these stocks must amount to 30 days of imports.

These mandatory stocks of natural gas must be stored in installations that enable delivery of the entire inventory of these stocks to the gas transmission system within 40 days. The mandatory gas stocks in Poland are commingled with commercial stocks. The amount of mandatory gas stocks is reviewed by the president of the Energy Regulatory...
Office on the basis of transport forecast for the nearest year. The costs incurred by enterprises/importers to fulfil the obligation are considered as the justified costs of their operations and could be included in tariffs. Compulsory stocks of natural gas may be held in storage facilities located outside the territory of Poland – in other EU countries.

**Emergency response measures**

Compulsory gas stocks are held at the disposal of the Minister of Economy. These stocks may be released by the operators of the gas transmission system or of the consolidated gas systems immediately after receiving permission from the Minister of Economy.

In case disruptions occur to the gas transmission system in the supply of natural gas, the following procedures can be taken in phases.

In Phase I of a gas emergency, trade enterprises and importers will secure additional supplies of natural gas from other sources on a commercial basis, and will reduce gas supply to major consumers according to the agreements with them. PGNiG has some contracts with natural gas consumers, which allows it to impose restrictions for commercial reasons. Such interruptible contracts require notification of the client at least 8 hours in advance, before the agreed restriction level is implemented.

If the TSO assesses that the measures introduced in Phase I are insufficient to eliminate the threat to the security of the natural gas supply in Poland, the Minister of Economy will decide on the use of compulsory stocks (Phase II). OGP GAZ-SYSTEM (TSO) is responsible for conducting the withdrawal of compulsory gas stocks, in co-ordination with the SSO, PGNiG.

If the measures taken in Phases I and II do not restore the state of Poland’s natural gas security, the TSO will notify the Minister of Economy of the need to impose restrictions on the use of natural gas (Phase III). According to the regulation of the Council of Ministers of 19 September 2007, households and other customers with total contracted capacity from the exit point of less than 417 m$^3$/h are not subject to restrictions. The restrictions will be imposed on the basis of plans, which are elaborated by TSO, DSOs and enterprises fulfilling the role of network operators, and need to be approved by the president of the Energy Regulation Office.

If the response measures of Phases I to III turn out to be insufficient, the Council of Ministers can include commercial stocks being held in storage facilities throughout the country into the compulsory stocks of natural gas (Phase IV).

The Polish government has no legal authority or policy to promote fuel switching away from natural gas in an emergency. Gas-fired power plants are not legally required to hold backup fuel stocks on site. However, the level of energy produced from natural gas is minimal.