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:

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Imports/exports and import dependency
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Ports and pipelines
Storage capacity

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Gas company operations

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Storage

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Key data

Table 4.29.1 Key oil data

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (kb/d)</th>
<th>Demand (kb/d)</th>
<th>Motor gasoline</th>
<th>Gas/diesel oil</th>
<th>Residual fuel oil</th>
<th>Others</th>
<th>Net imports (kb/d)</th>
<th>Import dependency (%)</th>
<th>Refining capacity (kb/d)</th>
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<td>8 945.5</td>
<td>17 201.0</td>
<td>7 286.8</td>
<td>3 051.3</td>
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<td>6 579.9</td>
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* Forecast.
** TPES data for 2012 are estimates.

Table 4.29.2 Key natural gas data

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<tr>
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<th>Demand (mcm/y)</th>
<th>Transformation</th>
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<th>Residential</th>
<th>Others</th>
<th>Net imports (mcm/y)</th>
<th>Import dependency (%)</th>
<th>Natural gas in TPES (%)</th>
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<tr>
<td>2012*</td>
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* 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 4.29.1  Total primary energy source (TPES) trend, 1973-2012
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.
Map 4.29.2  Gas infrastructure of the United States

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 most significant (although declining) energy source in the United States, accounting for 36% of the country’s total primary energy supply (TPES) in 2012. US oil demand was 18.9 million barrels per day (mb/d) in 2012, down from 19.3 mb/d in 2011 – and continuing a general downward trend since 2007. The road transport sector is the largest single consumer of oil in the United States, accounting for 70% of total consumption in 2011 – with gasoline alone accounting for 46% of oil product demand in 2012. US oil demand is expected to remain relatively flat in the medium- to long-term.

The United States has substantial domestic oil production – equivalent to over 57% of consumption in 2012. Crude oil production increased from around 5 mb/d in 2008 to nearly 6.5 mb/d in 2012. Domestic production is forecast to continue rising sharply, with an average production growth rate of 234 kb/d until 2019 when it is expected to peak at 7.5 mb/d. The increase in oil production is largely thanks to new technologies such as horizontal drilling that, when used in conjunction with hydraulic fracturing, have brought domestic resources into production that were previously considered nonviable.

With regard to oil imports, US imports totalled 11.1 mb/d in 2012 (down from 11.9 mb/d in 2011) – including 8.75 mb/d crude oil and 1.2 mb/d of products such as gasoline, diesel, heating oil and jet fuel. The country also exported around 3 mb/d of products – making it a net exporter of petroleum products (nearly 1.3 mb/d in 2012). The United States has widely diversified import sources. Canada is by far the biggest exporter of oil and petroleum products to the United States, followed by Saudi Arabia, Venezuela and Mexico.

As of April 2013 the United States meets its 90-day International Energy Agency (IEA) stockholding obligation solely with public stocks (696 million barrels of crude oil) held in the Strategic Petroleum Reserve (SPR). Prior to April 2013 the country relied on industry stocks held for commercial purposes in addition to SPR stocks to meet its 90-day obligation. This development is caused by declining US net-import levels as a result of growing domestic oil production and declining oil imports.

The government’s preferred response to an oil supply disruption is to release stocks from the SPR. However, the country has other statutory mechanisms for use in certain situations such as natural disasters, for example hurricanes.

The share of natural gas in the country’s TPES was 28% in 2012, up from 26% in 2011 and 25% in 2010. The share of natural gas had been in steady decline since the early-1970s, but the past couple of years have seen a rapid reversal of this trend. Sources of demand in the United States are relatively diverse, with electricity generation, the industrial sector and road transport all expected to drive future demand growth thanks to low natural gas prices.

Domestic natural gas production was sufficient to cover 95% of domestic demand in 2012, with only around 5% of demand met through imports. Gas production has grown rapidly in recent years, largely owing to surging shale gas production, and is expected to continue to grow faster than consumption. Forecasts indicate that the country will become a net exporter of natural gas by 2018.

The United States has a high degree of natural gas infrastructure reliability underpinning its security of supply, including the diversification of supply routes and substantial storage capacity. The country’s supply security is further enhanced by the fact that border crossing points have “reverse flow” capacity that can be used when needed.
Market features and key issues

Domestic oil production
Oil remains the most significant (although declining) energy source in the United States, accounting for almost 36% of the country’s TPES in 2012. Importantly, the US has substantial domestic oil production – equivalent to over 57% of its oil consumption in 2012. The level of domestic crude oil production has increased over the past few years, reversing a decline that began in 1986. According to IEA figures, crude oil production increased from 5 mb/d in 2008 to just under 5.7 mb/d in 2011 and 6.5 mb/d in 2012. This increase in oil production is largely created by the application of new horizontal drilling technology and hydraulic fracturing, bringing domestic resources into production that were previously considered nonviable.

According to the US Energy Information Administration’s (EIA) Annual Energy Outlook 2013 (AEO 2013) base case scenario, domestic production is forecast to continue rising sharply, with an average production growth rate of 234 kb/d until 2019 when crude production is expected to peak at 7.5 mb/d. After 2020 a gradual production decline is forecast, but crude levels are expected to remain above 6 mb/d until at least 2040.

Oil demand
The United States is the largest consumer of oil in the world, and accounts for around 42% of the total oil consumed by IEA member countries. In 2012, US oil demand was 18.9 mb/d, down from 19.3 mb/d in 2011 – continuing a general downward trend that began in 2007. The road transport sector is the largest single consumer of oil in the US. Transport consumed 70% of total oil supply in 2011, with gasoline alone accounting for 46% of oil product demand in 2012 (up slightly from 43% in 1997). Industry was a distant second at 18% of total oil consumption in 2011. Its share has been relatively constant over the past decade and longer.

Figure 4.29.2 Oil consumption by sector, 1973-2011

![Oil consumption by sector, 1973-2011](image-url)
US oil consumption is expected to remain relatively flat in the medium- to long-term. This is largely because of an expected decline in demand from the transport sector, with AEO 2013 projecting a 0.9% decrease in motor gasoline consumption from 2011 to 2040. Increasing vehicle efficiency is projected to reduce gasoline use in the transportation sector by 500 kb/d in 2025 and 1 000 kb/d in 2035. In addition, some petroleum-based diesel fuel consumption is expected to be offset by increased use of liquefied natural gas (LNG) for heavy-duty vehicles (because of the improving economics of LNG) and the increased use of diesel produced using gas-to-liquids (GTL) technology.

**Figure 4.29.3** Oil demand by product, 1998-2012

![Figure 4.29.3](image)

**Imports/exports and import dependency**

According to IEA figures, US oil imports totalled 11.1 mb/d in 2012 (down from 11.9 mb/d in 2011). This figure includes 8.75 mb/d of crude oil and 1.4 mb/d of products such as gasoline (0.72 mb/d), diesel, heating oil and jet fuel. The country also exported around 3 mb/d of products, including 1.2 mb/d of products such as gasoline, diesel, heating oil and jet fuel, making it a net exporter of products (nearly 1.3 mb/d in 2012). Net US imports of crude oil and petroleum products in 2012 totalled 7.968 mb/d.

**Figure 4.29.4** Crude oil imports by origin, 2012

![Figure 4.29.4](image)
The United States has widely diversified import sources, with Canada accounting for 29% of its crude oil imports in the fourth quarter of 2012, followed by Saudi Arabia (17%), Mexico (13%) and Venezuela (16%). A total of 47.4% of crude oil imports came from OPEC countries in 2012 – notably Saudi Arabia, Nigeria and Venezuela. The United States is a net exporter of petroleum products but still imports significant amounts of some products (e.g. LPG) – 62.5% of which come from OECD member countries.

Increased domestic production is having a significant impact on oil imports. According to IEA figures, oil and product imports as a share of US oil consumption peaked at 66.5% in 2005 before dropping to around 60% in 2010 and 51% in 2012. Import dependency is expected to continue to fall in the short to medium term, with import dependency expected to drop to 36% by 2018.

US government figures show an even greater decrease in dependency on imports. According to government figures, imported liquid fuels as a share of US liquid fuel consumption peaked at 60% in 2005 before dropping below 50% in 2010 and declining further, to 45% in 2011. AEO 2013 projections indicate that the share of imported liquid fuels will continue to decline in the medium term, reaching 34% in 2019, before rising to 37% in 2040 owing to the expected slow decline in domestic tight oil (shale oil) production beginning around 2020.

In March 2011, the President of the United States set a goal for the country to reduce its dependence on oil imports by one-third (relative to their level when the president took office – i.e. 11 mb/d) by 2025. However, the US oil import outlook is changing so quickly that the goal was later revised to reducing oil imports by half by 2020.

**Oil company operations**

The United States has a largely deregulated and competitive oil market. All the companies operating in the US oil sector are privately owned apart from the SPR and the Northeast Home Heating Oil Reserve (NEHHOR).

**Oil supply infrastructure**

**Refining**

In 2012 the US refining sector had 145 operational refineries with a combined capacity of 17.3 mb/d and an operable utilisation rate of 88.7%. The country has a relatively good balance between refinery output and domestic product demand, and the United States is a net product exporter.

The key category of surplus product is middle distillates (particularly diesel), while the main products where demand exceeds production are liquefied petroleum gas (LPG) and ethane, naphtha and residual fuels. Most US refineries are configured for maximum distillate output and have consequently received a competitiveness boost from low natural gas prices as natural gas is used as a hydrocracker feedstock.
There are five new refineries proposed for the United States, all of which (if they go ahead) are intended to utilise Bakken tight oil production which is made up of sweet crude grades. Bakken production has also revitalised the competitiveness of many east coast refineries as these are configured for sweet crude grades and were until recently dependent on more expensive imported Brent Crudes. The Gulf Coast refining sector is not so well positioned to benefit from new domestic production as many of its refineries are configured for heavy crude grades. Some Gulf Coast refiners are planning to alter their configuration to process lighter crudes such as those from the nearby Eagle Ford Play, while others may benefit from increased supplies of heavier Canadian crudes if the necessary pipeline infrastructure is built to bring this crude south in sufficient quantities.

**Ports and pipelines**

There are a significant number of oil ports around the US. Most have import terminals for crude and product imports, but a small number only take product imports.

Pipelines are the most commonly used mode of transport for shipping crude oil in the United States. The US has 172 048 miles of crude gathering and distribution pipelines operated by 2 338 companies, with the top ten operators alone responsible for nearly 55 000 miles of pipeline. According to the EIA, in 2011 the US domestic pipeline network transported 514.3 mb/d of crude oil between regions. The highest concentration of pipelines in the United States is in the Gulf Coast region (which also has nearly 50% of the country’s refining capacity). The largest crude pipelines in the United States were constructed to move oil between the Gulf Coast and the midwest regions.

As is the case with crude oil, pipelines are the most commonly used mode of transportation for shipping refined products in the US. The EIA reported that nearly 1.695 billion barrels of petroleum products were transported via inter-regional pipelines in 2011. Four major pipeline systems from the Gulf Coast provide products to the east coast and midwest regions of the United States. Another major pipeline system transports petroleum products on the US West Coast.

Rail is another rapidly growing mode of transportation for US crude oil and petroleum products. It is mainly used for transportation of oil where there is a lack of pipelines,
where existing pipelines lack sufficient available capacity, or where rail is the most cost-effective option.

**Storage capacity**

The total operating shell storage capacity of the United States as of 30 September 2012 was 2.18 billion barrels, including the 727-million barrel capacity of the SPR.

**Decision-making structure**

US oil emergency response policies are based primarily on the Energy Policy and Conservation Act (EPCA). The EPCA gives the US president the authority to direct a drawdown of the SPR in the event of a "severe energy supply interruption", or to meet US obligations under the International Energy Program.

The US Department of Energy (DOE) serves as the country’s national emergency strategy organisation (NESO), with the responsibility of initiating and co-ordinating a US response to an oil supply disruption. The NESO is composed of two teams – the crisis assessment team and the executive team.

The crisis assessment team is led by the DOE Office of Policy and International Affairs. The team is responsible for analysis of the crisis situation and recommendations for response options to the executive team. The executive team is comprised of the secretary of energy, the deputy secretary of energy and senior management from the Office of Policy and International Affairs, the EIA and the SPR. The executive team analyses and discusses the findings of the crisis assessment team and co-ordinates a response with other departments and White House staff offices. The secretary of energy is responsible for forwarding the executive team’s recommendations to the US president.

Personnel from all the offices that comprise the crisis assessment team and the executive team are required to undergo regular training to maintain their capacity to act as an effective emergency response team. At the executive level, the DOE has a protocol in place to conduct a crisis simulation, known as Oil Shockwave, to simulate an oil supply crisis. At the staff level, personnel from the Office of Petroleum Reserves and the Office of Policy and International Affairs have participated in the emergency response exercises of the IEA. Additionally, the Office of Petroleum Reserves conducts bi-annual "Eagle" and "Pride" drills to simulate large and small crisis response situations.

The government’s preferred response to an oil supply disruption is to release stocks from the SPR. However, the United States has other statutory mechanisms for use in certain situations such as natural disasters (e.g. hurricanes).

**Stocks**

**Stockholding structure**

The SPR was established in 1975 under the EPCA “to reduce the impact of disruptions in supplies of petroleum products” and to “carry out obligations of the United States under the International Energy Program”.

The SPR has a total storage capacity of 727 million barrels of crude oil, and as of April 2013 had an inventory of 696 million barrels – equivalent to 91 days of net imports. This means that the United States can now meet its 90-day IEA obligation solely with public SPR stocks. Prior to April 2013 the country also relied on industry stocks held for commercial purposes, in addition to SPR stocks, to meet its 90-day obligation. This development is the result of growing domestic oil production and declining oil import
levels – which have led to a decline in US net imports and therefore a decline in the amount of stock required to meet the 90-day obligation.

The NEHHOR was established in 2000 (also under the EPCA). Originally established as a two-million barrel reserve, the NEHHOR inventory was converted to cleaner burning, ultra-low sulphur distillate by the DOE in 2011, and the size of the reserve was reduced to one million barrels caused by declining levels of heating oil consumption.

**Crude or products**

The stocks held in the SPR consist entirely of crude oil, while the NEHHOR inventory consists of low-sulphur diesel. US industry stocks are a combination of crude oil and product, with crude oil accounting for around 34% of the total.

**Location and availability**

The SPR consists of 62 large storage caverns in underground salt dome formations located at four sites in Texas and Louisiana along the Gulf Coast. The oil stored in the SPR is around 99% available for sale and delivery.

**Monitoring and non-compliance**

The DOE has overall responsibility for the management and administration of the SPR and the NEHHOR programmes. Within the DOE, the Office of Petroleum Reserves under the auspices of the Office of Fossil Energy is responsible for the management, operations and maintenance of both the SPR and NEHHOR programmes. There is no statutory obligation on industry in the United States to hold stocks for emergency purposes.

**Financing and fees**

The United States government has full ownership of all petroleum stocks in the SPR and NEHHOR, as well as all SPR storage facilities. These were paid for through government appropriated funds. The SPR programme employs government-owned storage facilities, using underground salt storage caverns to store crude oil stocks. The SPR is able to achieve very low operating costs because of its use of salt cavern storage technology that enables it to attain massive economies of scale. The total annual operating cost for the SPR is USD 195 million or USD 0.27 per barrel stored.

**Other measures**

**Demand restraint**

At the federal government level, oil demand restraint is not among the policy options available for use during an oil supply disruption. Rather than operating at the federal level, US oil demand restraint policies and regulations exist at the state level – and vary from state to state. The federal government allows each state to determine the scope and use of demand restraint measures, and aside from information sharing, there is little demand restraint policy co-ordination between states.

For example, during Hurricane Sandy the New York City mayor issued an Executive Order (number 163) restricting gasoline purchases to odd and even days corresponding to vehicle licence plates.
Fuel switching
The US has no specific policies to promote fuel switching in an emergency. However, the electricity generation sector maintains significant fuel-switching capacity. The net summer capacity of petroleum-fired generators reporting the ability to switch to natural gas was 18,356 megawatts (MWs), or about 35.8% of the total in 2011 (down from 40.2% in 2010).

Other

Fuel specification waivers
The temporary waiver of mandatory fuel specifications is another potential measure for use during an oil supply disruption. If the fuel supply is disrupted because of an unforeseen emergency situation, the Environmental Protection Agency (EPA), with the concurrence of DOE, is authorised to issue a temporary fuels waiver to mitigate outages under the Clean Air Act.

Fuel waivers of this type were used during August and September 2012 after Hurricane Isaac caused a number of Louisiana refineries to be shut down for about a week – causing gasoline outages in the southeastern United States. At that time, the EPA issued a temporary waiver on summer gasoline volatility standards for the region, thereby enabling greater quantities of gasoline to be produced to mitigate the supply outages. Various fuel and environmental waivers were also used in October 2012, in the aftermath of Hurricane Sandy.

Surge production
The United States does not retain the potential to surge oil production during an emergency. Domestic oil production in the United States is already taking place at the maximum feasible rates.

Gas

Market features and key issues

Gas production and reserves
Domestic production was sufficient to cover 95% of US natural gas demand in 2012, with only 5% of US natural gas demand met through imports. Domestic natural gas production has grown rapidly in recent years and is expected to continue to grow faster than consumption. Forecasts indicate that the United States will become a net exporter of natural gas by 2018. It is unclear whether, or to what extent, domestic regulations will limit the quantity of natural gas that can eventually be exported from the United States.

Surging shale gas production is the key reason for ongoing rapid growth in total US natural gas production levels. Shale gas only comprises around 30% of total US natural gas production but is growing so quickly that, if production continues to increase as projected, it will offset an expected decline in production rates from conventional domestic natural gas sources.

Two reasons behind the continuing success of US unconventional gas production, despite low domestic natural gas prices, are high crude prices, which significantly improve the economics of natural gas plays that have a high liquids content, and improved drilling efficiencies, which result in a greater number of wells being drilled more quickly, with
fewer rigs and higher initial production rates. This last point also illustrates the fact that technologies like hydraulic fracturing are still relatively new and continuing to develop, so there are no guarantees that the current per unit cost of developing the resource and current high production rates can be sustained over the long term. Despite optimistic supply and demand projections in the AEO 2013 “reference case” scenario, future consumption forecasts are highly sensitive to pricing which is in turn highly sensitive to estimated ultimate recovery rates.

**Gas demand**

According to IEA figures, US consumption of natural gas was 691 bcm in 2011 (estimated to have increased to 721 bcm in 2012). This figure is projected to reach almost 792 bcm by 2018 and to continue to increase for the foreseeable future.

**Figure 4.29.6  **Natural gas consumption by sector, 1973-2011

Sources of natural gas demand in the US are quite diverse – with electricity generation, the industrial sector and the road transport sector all expected to drive future demand growth thanks to low natural gas prices.

The proportion of electricity generated from natural gas reached 25% in 2011 according to government figures⁶, up from 24% in 2010 and 16% in 2000. This trend is expected to continue with the proportion of electricity generated from natural gas projected to reach 27% by 2020 and 30% in 2040.

Natural gas use in the industry sector is expected to increase by 16%, from 192.5 bcm per year in 2011 to 220.8 bcm per year in 2025. Increased demand for natural gas for industrial production (particularly in the bulk chemicals and primary metals sectors) is being driven by an extended period of relatively low natural gas prices, which lower the costs of both raw materials and energy. Natural gas consumption is also expected to grow in the transport sector where LNG will increasingly be used as a fuel for heavy-duty trucks, and natural gas will increasingly be used as a feedstock for producing diesel and other liquid fuels.

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Gas import dependency
The share of natural gas in the country’s TPES was 28% in 2012, up from 26% in 2011 and 25% in 2010. Domestic production was sufficient to cover more than 95% of US natural gas demand in 2012, with only 5% of demand met through imports. Most US natural gas imports (94% in 2012) are sourced from Canada, with another 4% from Trinidad and Tobago.

Gas company operations
The US natural gas market is dynamic and highly competitive, with a very active spot and futures market. The industry has a high degree of private ownership with little vertical integration. Production, transmission and distribution are usually separate entities with limited examples of upstream or downstream integration – although some large gas distributors own transmission pipelines. The only public ownership in the US gas industry is in gas distribution.

Gas supply infrastructure

Ports and pipelines
The US natural gas pipeline network is a highly integrated transmission and distribution grid that can transport natural gas to and from nearly any location in the lower 48 States. There were 38 active entry/exit points for pipeline imports/exports and ten active entry/exit points for LNG imports/exports in 2011, totalling 48 total entry/exit points. Natural gas may, and sometimes does, flow in both directions; however, at each of these sites the flow is either primarily import or export.

Eight active entry points receive about 90% of all US natural gas imports. Canadian imports via Port of Morgan, Eastport, Noyes, Sherwood and Sumas accounted for 83% of total pipeline imports. The most active entry point for LNG imports is Everett, Massachusetts which represents 39% of total LNG imports.

Several major new natural gas pipelines have been completed in the United States since 2007. However, according to the government, natural gas futures contract prices signal that additional natural gas pipeline capacity may be needed to reduce peak winter premiums further in big winter load centres such as New York City and Boston that remain subject to pipeline constraints.

Overall, the United States has a high degree of natural gas infrastructure reliability, including the diversification of supply routes and substantial storage capacity. The country’s gas supply security is further enhanced by the fact that border crossing points have reverse flow capacity that can be used when needed.

Storage
The United States has 411 natural gas storage facilities with a total capacity of 120 bcm. The facilities are widely dispersed geographically and consist of a combination of salt caverns (37), aquifers (43) and depleted reservoirs (331). The advantage of significant amounts of salt cavern storage is that it allows rapid injection and withdrawal to respond to market conditions and other short-term events.
Emergency policy

The US government does not hold strategic reserves of natural gas or place a minimum natural gas stockholding obligation on industry.

The US president (or delegated authority) is authorised under the Natural Gas Policy Act 1978 (NGPA) to declare, and respond to, a natural gas supply emergency. The president has retained the authority to declare an emergency, but has assigned all other responsibilities associated with natural gas emergency response to the secretary of energy – who in turn has delegated them to the deputy secretary of energy. The Secretarial Delegation Order to the deputy secretary states that he will “carry out the functions under Sections 302 through 304(c) of the NGPA [...] after consultation with the Assistant Secretary for Fossil Energy and with the heads of other Executive departments and agencies”.

The emergency provisions under the NGPA include emergency purchase and emergency allocation authorities. These are to be used for the purpose of protecting high priority users of natural gas, where an interruption of supply could endanger lives, health or the maintenance of physical property.


In the event of an unusual or extraordinary threat, the US president is authorised by the International Emergency Economic Powers Act to declare a national emergency and to investigate, regulate or prohibit the import or export of any property (including natural gas) in which any foreign country or foreign national has an interest by any person or with respect to any property subject to US jurisdiction.

The EPCA provides the US president with additional independent rule-making authority to restrict natural gas exports.

The DOE is authorised (subject to a hearing at which good cause must be demonstrated) by Section 3 of the Natural Gas Act to issue supplemental orders that modify or rescind prior orders to import or export natural gas to protect the public interest. The DOE is also authorised by Section 16 of the Natural Gas Act to “perform any and all acts and to prescribe, issue, make and rescind such orders, rules and regulations as it may find appropriate” to carry out its responsibilities.

Under the national response framework developed by the Department of Homeland Security, DOE will facilitate the restoration of damaged energy systems and components when activated by the Secretary of Homeland Security for incidents requiring a co-ordinated federal response. Under DOE leadership, Emergency Support Function No. 12 (Energy) is an integral part of the larger DOE responsibility of maintaining continuous and reliable energy supplies for the United States through preventive measures and restoration and recovery actions.

Emergency response measures

The US government has no demand restraint policies in place at the federal level for use during a natural gas supply disruption. However, the federal government has provided grants to state energy offices to develop energy emergency response plans, including natural gas allocation and demand restraint policies and associated regulations. The DOE maintains a mechanism whereby it can work effectively with individual states during an emergency – as demonstrated in the case of Hurricane Sandy.
The United States government has no policies in place to promote fuel switching away from natural gas in an emergency. However, the electricity generation sector has significant fuel-switching capacity.

Likewise, the United States government has no policies in place to promote surge production or interruptible contracts as natural gas emergency management tools.