Energy Crisis

An **energy crisis** is any great [bottleneck](http://en.wikipedia.org/wiki/Bottleneck_(logistics)) (or price rise) in the supply of [energy](http://en.wikipedia.org/wiki/Energy) resources to an [economy](http://en.wikipedia.org/wiki/Economics).

Causes

[Market failure](http://en.wikipedia.org/wiki/Market_failure) is possible when [monopoly](http://en.wikipedia.org/wiki/Monopoly) manipulation of markets occurs. A crisis can develop due to industrial actions like union organized [strikes](http://en.wikipedia.org/wiki/Strike_action) and government embargoes. The cause may be [over-consumption](http://en.wikipedia.org/wiki/Over-consumption), aging [infrastructure](http://en.wikipedia.org/wiki/Infrastructure), [choke point](http://en.wikipedia.org/wiki/Choke_point) disruption or bottlenecks at [oil refineries](http://en.wikipedia.org/wiki/Oil_refinery) and port facilities that restrict fuel supply. An emergency may emerge during unusually cold winters due to increased consumption of energy.

Pipeline failures and other accidents may cause minor interruptions to energy supplies. A crisis could possibly emerge after infrastructure damage from [severe weather](http://en.wikipedia.org/wiki/Severe_weather). Attacks by terrorists or [militia](http://en.wikipedia.org/wiki/Militia) on important infrastructure are a possible problem for energy consumers, with a successful strike on a [Middle East](http://en.wikipedia.org/wiki/Middle_East) facility potentially causing global shortages. Political events, for example, when governments change due to regime change, monarchy collapse, [military occupation](http://en.wikipedia.org/wiki/Military_occupation), and [coup](http://en.wikipedia.org/wiki/Coup_d%27%C3%A9tat) may disrupt oil and gas production and create shortages.

Social and economic effects

The [macroeconomic](http://en.wikipedia.org/wiki/Energy_and_the_Macroeconomy) implications of a [supply shock](http://en.wikipedia.org/wiki/Supply_shock)-induced energy crisis are large, because energy is the resource used to exploit all other resources. When [energy markets](http://en.wikipedia.org/wiki/Energy_market) fail, an energy shortage develops. Electricity consumers may experience intentionally-engineered [rolling blackouts](http://en.wikipedia.org/wiki/Rolling_blackout) which are released during periods of insufficient supply or unexpected [power outages](http://en.wikipedia.org/wiki/Power_outage), regardless of the cause.

Industrialized nations are dependent on oil, and efforts to restrict the supply of oil would have an adverse effect on the economies of oil producers. For the consumer, the price of [natural gas](http://en.wikipedia.org/wiki/Natural_gas_prices), [gasoline](http://en.wikipedia.org/wiki/Price_of_petroleum) (petrol) and [diesel](http://en.wikipedia.org/wiki/Diesel_fuel) for cars and other vehicles rises. An early response from stakeholders is the call for reports, investigations and commissions into the price of fuels. There are also movements towards the development of more [sustainable urban infrastructure](http://en.wikipedia.org/wiki/Sustainable_urban_infrastructure).

In the market, new technology and [energy efficiency](http://en.wikipedia.org/wiki/Energy_efficiency) measures become desirable for consumers seeking to decrease transport costs.[[9]](http://en.wikipedia.org/wiki/Energy_crisis#cite_note-8)Examples include:

* In 1980 [Briggs & Stratton](http://en.wikipedia.org/wiki/Briggs_%26_Stratton) developed the first gasoline [hybrid electric automobile](http://en.wikipedia.org/wiki/Hybrid_electric_automobile); also are appearing [plug-in hybrids](http://en.wikipedia.org/wiki/Plug-in_hybrid).
* the growth of [advanced biofuels](http://en.wikipedia.org/wiki/Advanced_biofuel).
* [innovations](http://en.wikipedia.org/wiki/Innovation) like the [Dahon](http://en.wikipedia.org/wiki/Dahon" \o "Dahon), a folding bicycle
* modernized and electrifying passenger transport
* [Railway electrification systems](http://en.wikipedia.org/wiki/Railway_electrification_system) and new engines such as the [Ganz-Mavag](http://en.wikipedia.org/wiki/Ganz-Mavag" \o "Ganz-Mavag) locomotive
* [variable compression ratio](http://en.wikipedia.org/wiki/Variable_compression_ratio) for vehicles

Other responses include the development of [unconventional oil](http://en.wikipedia.org/wiki/Unconventional_oil) sources such as [synthetic fuel](http://en.wikipedia.org/wiki/Synthetic_fuel) from places like the [Athabasca Oil Sands](http://en.wikipedia.org/wiki/Athabasca_Oil_Sands), more[renewable energy commercialization](http://en.wikipedia.org/wiki/Renewable_energy_commercialization) and use of [alternative propulsion](http://en.wikipedia.org/wiki/Alternative_propulsion). There may be a [Relocation](http://en.wikipedia.org/wiki/Localism_(politics)) trend towards [local foods](http://en.wikipedia.org/wiki/Local_food) and possibly[microgeneration](http://en.wikipedia.org/wiki/Microgeneration), [solar thermal collectors](http://en.wikipedia.org/wiki/Solar_thermal_collector) and other [green energy](http://en.wikipedia.org/wiki/Green_energy) sources.

[Tourism](http://en.wikipedia.org/wiki/Tourism) trends change and ownership of [gas-guzzlers](http://en.wikipedia.org/wiki/Gas-guzzler) vary, both because of increases to fuel costs which are passed on to customers. Items which were not so popular gain favour, such as [nuclear power plants](http://en.wikipedia.org/wiki/Nuclear_power_plants) and the [blanket sleeper](http://en.wikipedia.org/wiki/Blanket_sleeper), a garment to keep children warm. Building [construction](http://en.wikipedia.org/wiki/Construction) techniques change to reduce heating costs, potentially through increased [insulation](http://en.wikipedia.org/wiki/Building_insulation).

### Future and alternative energy sources

In response to the petroleum crisis, the principles of [green energy](http://en.wikipedia.org/wiki/Green_energy) and [sustainable living](http://en.wikipedia.org/wiki/Sustainable_living) movements gain popularity. This has led to increasing interest in alternate power/fuel research such as [**fuel cell technology**](http://en.wikipedia.org/wiki/Fuel_cell)**,**[**liquid nitrogen economy**](http://en.wikipedia.org/wiki/Liquid_nitrogen_economy)**,**[**hydrogen fuel**](http://en.wikipedia.org/wiki/Hydrogen_economy)**,**[**methanol**](http://en.wikipedia.org/wiki/Methanol_economy)**,**[**biodiesel**](http://en.wikipedia.org/wiki/Biodiesel)**, [Karrick process](http://en.wikipedia.org/wiki/Karrick_process" \o "Karrick process),**[**solar energy**](http://en.wikipedia.org/wiki/Solar_energy)**,**[**geothermal energy**](http://en.wikipedia.org/wiki/Geothermal_energy)**,**[**tidal energy**](http://en.wikipedia.org/wiki/Tidal_energy)**,**[**wave power**](http://en.wikipedia.org/wiki/Wave_power)**, and**[**wind energy**](http://en.wikipedia.org/wiki/Wind_energy)**, and**[**fusion power**](http://en.wikipedia.org/wiki/Fusion_power). To date, only [hydroelectricity](http://en.wikipedia.org/wiki/Hydroelectricity) and [nuclear power](http://en.wikipedia.org/wiki/Nuclear_power) have been significant alternatives to fossil fuel.

Hydrogen gas is currently produced at a net energy loss from natural gas, which is also experiencing declining production in North America and elsewhere. When not produced from natural gas, hydrogen still needs another source of energy to create it, also at a loss during the process. This has led to hydrogen being regarded as a 'carrier' of energy, like electricity, rather than a 'source'. The unproven [dehydrogenating](http://en.wikipedia.org/wiki/Dehydrogenate) process has also been suggested for the use water as an energy source.

Efficiency mechanisms such as [Negawatt power](http://en.wikipedia.org/wiki/Negawatt_power" \o "Negawatt power) can encourage significantly more effective use of current generating capacity. It is a term used to describe the trading of increased efficiency, using consumption efficiency to increase available market supply rather than by increasing plant generation capacity. As such, it is a [demand-side](http://en.wikipedia.org/wiki/Demand-side) as opposed to a [supply-side](http://en.wikipedia.org/wiki/Supply_and_demand) measure.