



# Questions & Answers About Cogeneration

## **What is Cogeneration?**

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Also known as Combined Heat and Power Systems (CHP), cogeneration is a highly efficient process that transforms energy from one source (usually natural gas) into two energy products: electricity and heat. It essentially recycles the waste heat that occurs when natural gas is burned. It's a tremendous energy saver.

## **A tremendous energy saver?**

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Because it uses natural gas to produce both electricity and heat, Cogeneration conserves enough energy to provide electricity to some 3.6 million California homes. It's a reliable, local power supply with substantial environmental benefits.

## **Substantial environmental benefits?**

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Cogeneration begins with one of the cleaner energy sources: natural gas. Then it dramatically reduces the greenhouse gas emissions (CO<sub>2</sub>) and smog-forming emissions (NO<sub>x</sub>) that would have occurred if the heat and power were generated separately. Together, the emission reductions from cogeneration are the equivalent of removing more than 5 million cars from California's highways -- a reduction of 7,607 tons of NO<sub>x</sub> and 26,053,093 tons of CO<sub>2</sub> every year. By supplying 17% of the state's demand for electricity, cogeneration also reduces the need to build higher emission-producing power plants. Given California's aggressive goals to reduce greenhouse gas emissions and address global warming and climate change concerns, cogeneration takes on an even more important role in the state's energy portfolio.

## **Cogeneration supplies 17% of the state's demand for electricity?**

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More than 770 active cogeneration projects in the state supply fully 17% of the state's electricity demand. Cities, hospitals, universities, food processors and various other industries use cogeneration facilities to power their operations. Larger cogeneration facilities, such as the ones at refineries, are able to produce more electricity than they need. That excess electricity is then sold under contract to utility companies for use on the state electricity grid. Directly or indirectly, all Californians rely on cogeneration.

## **So what's the problem?**

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At a time when we should be expanding the use of cogeneration, *existing* cogeneration facilities are at risk of shutting down. That's because California lacks a focused state cogeneration policy. Despite our heavy reliance on cogeneration to meet the state's energy demand, no annual targets have been established for the use of cogeneration in the state's energy portfolio. Neither has a standardized process been established to ensure cogeneration contracts are renewed at reasonable rates, which is of immediate concern since the cogeneration contracts that supply electricity to the state grid will soon expire.

## **Cogeneration contracts are expiring?**

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In response to the energy crisis in the 1970's, major cogeneration contracts were signed in the 1980's to increase the efficiency of our energy supply and diversify the state's portfolio to make it more stable and reliable. Those contracts have governed the sale of excess electricity from large-scale cogenerators to privately-owned utilities. For years, cogenerators have attempted to renew those contracts but the process has been excruciatingly slow and in many cases unproductive so far because there's no standardized

contracting process and no guarantee the utilities will purchase their electricity. As the California Energy Commission noted in the 2005 Integrated Energy Policy Report: *“These projects could shut down in the near future as their contracts expire. It is estimated as much as 2,000 MW could shut down between now and 2010 because project owners have been unable to renew their utility contracts.”*

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## **What happens if cogeneration facilities shut down?**

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Californians could face higher energy bills, more power outages, more pollution, and more greenhouse gas emissions. Additionally, we'd lose the diversification that is so critical to the continued reliability and security of our state power grid and industrial infrastructures.

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## **Higher energy bills?**

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Losing cogeneration would reduce the reliability and efficiency of our power supply – something we can hardly afford in these times of soaring natural gas prices and looming power outages. Less supply drives prices up. Less efficient use of expensive natural gas invites higher natural gas prices. Less reliability increases the chances of exorbitant last minute power purchases like we experienced in the costly days of 2000-01. Cogeneration has other cost saving properties as well. It's generated using private investment dollars and relies on private transmission lines, thereby reducing the need for costly state grid expansions. It also reduces the need to build costly new power plants, and reduces the high cost of negative environmental impacts and power outages.

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## **Power outages?**

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Cogeneration doesn't just add more electricity to the grid, it diversifies and localizes our power supply, making us less vulnerable to power failures and less dependent on out-of-state supplies. During the 2000-01 energy crisis, and recent hurricanes and earthquakes, it was cogeneration that helped keep the power flowing and industrial infrastructures operating while other power supplies failed.

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## **So how do we keep cogeneration in the state's energy mix?**

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For years, the state's energy policy makers have expressed the importance of preserving cogeneration as part of the state's energy portfolio. Now it's time to put those words into action. After exhaustive study, the California Energy Commission recently released a comprehensive blueprint outlining the necessary policy changes that must occur to keep cogeneration facilities up and running. It's now in the hands of the California Public Utilities Commission (CPUC) to adopt a focused, open, and fair cogeneration policy – and implement it. Without CPUC action, private cogenerators lack the process and assurances they need to continue investing in their operations.

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## **How can Californians help move the process along?**

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They can contact public utility commissioners directly and voice their desire to preserve cogeneration in the state's energy portfolio. They can also contact the CogenWorks coalition to find out more about preserving cogeneration.

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## **Who is CogenWorks?**

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A coalition of cogenerators, including cities, hospitals, universities, refineries, food processors, and a variety of businesses and industries.