

Economic
Development
and Jobs for
Kern County ...
Clean Energy
for California



hydrogen energy
california

A New
Solution for
Low-Carbon
Power



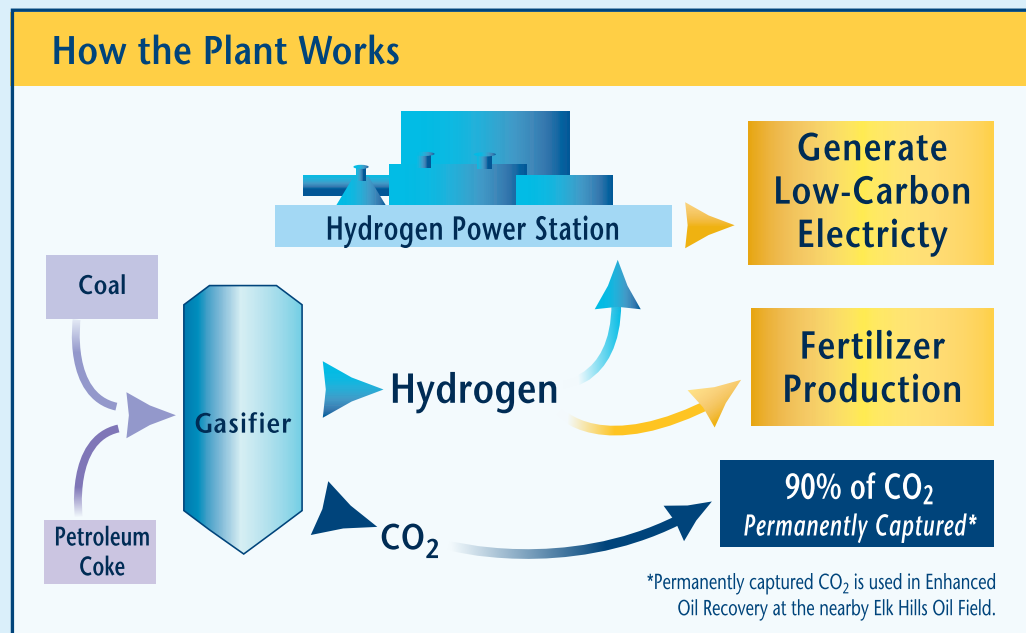
HOW HECA WORKS

The process starts by creating clean hydrogen, which is produced by recycling petroleum coke (a low value by-product that comes from oil refining) and combining it with coal.

Once the hydrogen is created, it is then used for two purposes: as a clean fuel to generate nearly 300 megawatts of electricity; and to produce approximately one million tons per year of locally manufactured, low-carbon fertilizer and other useful products to support the state's agricultural, industrial and transportation industries.

This process also produces carbon dioxide (CO₂), ninety percent of which will be captured and then permanently stored and used for enhanced oil recovery at nearby Elk Hills Oil Field.

The plant will be designed, constructed and operated to meet or exceed the highest local, state and federal environmental, safety and health standards to protect the public and workers at the plant.



ECONOMIC BENEFITS

A MAJOR INVESTMENT IN THE LOCAL ECONOMY

- ▶ During construction HECA will create thousands of high quality union jobs in Kern County and the region, as well as several hundred full-time jobs when fully operational.
- ▶ HECA's operation will create \$52 million in annual labor income and \$239 million in total annual economic impact to Kern County.
- ▶ HECA will manufacture low-carbon products within California valued at more than \$1 billion a year, which will stimulate the state's overall economy.
- ▶ The captured CO₂ gas will enable the production of five million additional barrels of in-state domestic oil per year, generating new revenues for California.



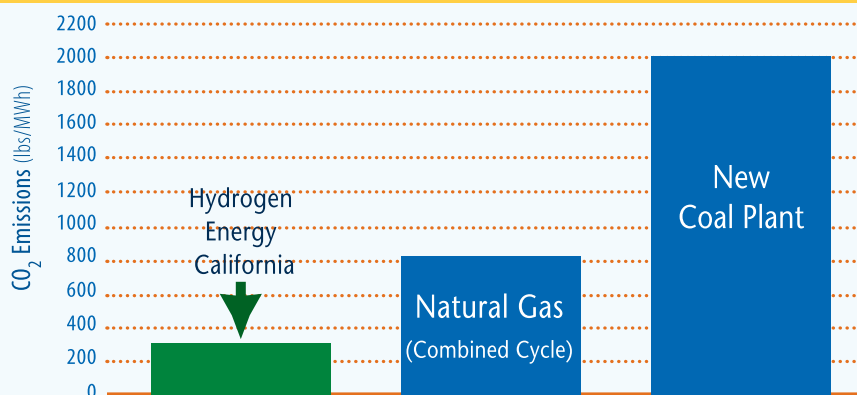
ENVIRONMENTAL BENEFITS

CLEAN ENERGY FOR 160,000 HOMES

- ▶ HECA will produce lower air emissions than any conventional power plant of its size, including natural gas.
- ▶ HECA will prevent more than three million tons per year of greenhouse gases from going into the atmosphere, which is the equivalent of eliminating 650,000 cars from the road each year.
- ▶ HECA's process will preserve California's valuable fresh water resources by using brackish, non-potable water and eliminating waste water discharge.
- ▶ HECA will recycle petroleum coke, which is currently shipped from California refineries to other nations where it is burned, releasing CO₂ emissions directly into the atmosphere.



HECA achieves very low CO₂ emissions *



*Emission performance data points are sourced from industry benchmarks, engineering vendors, Department of Energy and power plant permit applications for each type of facility in the nation

ABOUT HECA

Hydrogen Energy California (HECA) is a clean and reliable alternative energy solution that will provide significant economic and environmental benefits to Kern County and the State of California, and will advance California's long term climate strategy.

As one of the first projects of its kind, HECA brings together safe and commercially proven technologies into a single, multi-purpose operation that will:

- ▶ Generate a stable and predictable new source of clean, low-carbon electricity using hydrogen
- ▶ Minimize greenhouse gases released into the atmosphere
- ▶ Capture, store and utilize carbon dioxide for enhanced oil recovery
- ▶ Produce a much-needed local source of low-carbon fertilizer and other products to support the state's agriculture economy



HECA has the support of the U.S. Department of Energy as a safe and cost-effective way to produce clean energy.



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