

Project profile

# Indiana Department of Correction

Indiana



## Indiana Corrections saves energy, helps local economy

The Indiana Department of Correction (IDOC) is taking a new approach to energy management that will give the state's agriculture sector a boost at the same time. A performance contract with Johnson Controls is guaranteed to save more than \$7 million over the next decade while providing \$25 million in facility capital infrastructure upgrades. To top it off, some buildings will be heated by new biomass boilers that are fueled by corn grown in Indiana.

## Innovative solutions

More than 24,000 adult and juveniles are housed in Indiana's 31 correctional facilities, ranging from minimum to maximum custody, prison camps, juvenile facilities and work release centers. Phase one of the energy project – thought to be the first of its kind in the country – brings together several priorities for Gov. Mitch Daniels' administration: saving tax dollars, finding new markets for Indiana farm products, and streamlining government operations.

"Our corrections facilities were wasting heat, electricity and water, and our employees were concerned," said J. David Donahue, IDOC commissioner.

"We recognized that modernizing our facilities with green energy technology would provide better working conditions for correctional employees and save money in the process."

Through a competitive request for proposal, IDOC chose Johnson Controls to develop a performance contract, which pays for facility improvements over time through guaranteed energy and operational savings.



J. David Donahue, Commissioner,  
IDOC

"These innovative practices will make a positive impact for Hoosiers, throughout our environment and state economy. And just as important, this program will improve the working conditions for our IDOC employees and staff."

**J. DAVID DONAHUE**  
**COMMISSIONER**  
**IDOC**

## Funding facility improvements

Johnson Controls assessed each facility's utility consumption and is focusing its efforts on improvements at Plainfield Correctional Facility/ Re-Entry Education Facility, Pendleton Correctional Facility, Westville Correctional/Maximum Control Unit and Indiana State Prison in Michigan City. These facilities were chosen because they are the state's least energy-efficient and consume the most electric and gas.

The \$30.4 million contract is projected to save the department \$37.7 million over 10 years, for a net savings of more than \$7 million. Some of the facility improvements include:

- Installing industrial-grade biomass boilers and fuel delivery systems
- Installing efficient water faucets that also automatically shut off after a certain amount of time
- Providing light bulbs and fixtures that burn brighter and cooler while using less electricity. Because they also last longer, maintenance crews won't have to change them as frequently
- Upgrading mechanical and HVAC systems

## Bushels of Hoosier corn

Donahue says the most interesting part of the project is the construction of four biomass boilers at the sites. The units will use an estimated 1.3 million bushels of Indiana corn per year, purchased at about \$2.8 million. In addition, Department of Correction offenders will grow some of the corn at prison sites and will be trained to help operate boilers.

The corn will be combined with gasoline or diesel fuel to produce cleaner-burning fuel in the biomass boilers, which also can burn soybeans or wood pellets. The resulting ash can be sold as fertilizer.

"By relying on home-grown corn, we're less susceptible to the fluctuation of natural gas prices, and we're reducing the need to spend money on pipelines and other generation facilities," Donahue says.

## Benefits of biomass

Biomass is stored solar energy that can be converted to electricity, fuel and heat. Through photosynthesis, the energy from the sun is stored in the chemical bonds of plant material. In this case, the biomass energy comes from the agricultural residue of corn which will be burned and converted to commercial energy.

- **Economic development** – About \$3 million worth of Indiana corn will be used annually, generating an estimated \$7,000,000 in trickle down annual economic impact for the Indiana economy. In addition, the majority of subcontracting is expected to be performed by Indiana contractors.
- **Improving facilities** – Gov. Daniels had challenged IDOC to improve infrastructure at several facilities in order to minimize operational costs.
- **Saving money** – The state legislature wanted to keep state budgets in line, which meant that every department looked for ways to cut costs.
- **Increasing renewable energy** – In 2005, the Indiana Department of Agriculture released a plan that called for expanded research and development into generating electricity from biomass to reduce the need for more natural gas generation and pipelines.
- **Reducing emissions** – Corn is a cleanerburning fuel than coal. The improvements are forecast to save about 6.8 million kilowatt hours of electricity each year – the environmental equivalent of more than 2,800 passenger cars not being driven for one year.

*For more information, please visit the Indiana Department of Correction at [www.in.gov/indcorrection](http://www.in.gov/indcorrection) or Johnson Controls at [www.johnsoncontrols.com](http://www.johnsoncontrols.com).*

“By relying on home-grown corn, we’re less susceptible to the fluctuation of natural gas prices, and we’re reducing the need to spend money on pipelines and other generation facilities.”

**J. DAVID DONAHUE**  
**COMMISSIONER**  
**IDOC**

Printed on recycled paper.

©2008 Johnson Controls, Inc. Printed in USA CSST-PS06-006  
[www.johnsoncontrols.com](http://www.johnsoncontrols.com)

