

# Renewable Energy



Story Wind Farm, Story and Hardin counties, Iowa

COOPERATIVES HAVE A LONG HISTORY OF COMMITMENT TO THE COMMUNITIES THEY SERVE AND THE ENVIRONMENT WE SHARE.

Renewable energy represents an important part of Hoosier Energy's "all-of-the-above" power supply strategy, which also includes coal, natural gas and energy efficiency.

To help meet member electricity needs now and in the future, Hoosier Energy's Board of Directors established a voluntary renewable energy policy in 2006 to encourage the development of efficient, economical renewable energy resources.

Hoosier Energy pursues smaller scale renewable energy projects that make economic sense and offer a reliable source of power for member systems' consumers. Three percent of Hoosier Energy's current generation resources come from renewables, with a target to provide 10 percent of total generation from renewables by 2025.

Renewable energy resources include 19 megawatts of landfill methane gas, a 13-megawatt coalbed methane facility and 54 megawatts of wind and hydro available through power purchase agreements. Plans to install a 10-megawatt solar program are underway with ten, 1-megawatt facilities scheduled to be in operation by the end of 2016.

Two additional landfill gas plants totaling 20 megawatts of renewable energy are planned to be in operation by 2017.

Hoosier Energy is a member of the National Renewables Cooperative Organization—a national group of co-ops working together to cost-effectively pursue renewable energy opportunities.

# Hoosier Energy Renewable Energy Resources

HOOSIER ENERGY CONTINUES TO LOOK FOR WAYS TO MAKE COMPETITIVELY PRICED RENEWABLE SOURCES OF POWER AVAILABLE FOR MEMBERS. CURRENT PROJECTS INCLUDE THE FOLLOWING RENEWABLE RESOURCES:

## LANDFILL METHANE GAS

Landfill methane gas (LMG) generation is recognized as a renewable energy resource because these power plants contribute to reduction of greenhouse gases by destroying methane and using the remaining gas to produce electricity.

Landfill gas, which occurs naturally from decomposing waste, consists of about 50 percent methane, whose emissions are many times stronger than carbon dioxide. Instead of being flared into the atmosphere, LMG facilities capture the methane and use it to produce electricity.

Gas produced in a landfill provides a source of fuel to power generators around the clock.

Hoosier Energy owns and operates two landfill methane gas facilities: the 4-megawatt Clark-Floyd landfill gas plant in southern Indiana and the 15-megawatt Livingston plant located on Republic Industries' 460-acre Livingston Landfill near Pontiac, IL.

Clark-Floyd began operation in 2007, and Livingston followed in 2013.

Two additional landfill gas plants are scheduled to be in service by 2017: the 16-megawatt Orchard Hills LMG plant near Rockford, Ill., and the 4-megawatt Cabin Creek landfill gas plant in Randolph County, Indiana.

## COALBED METHANE

Hoosier Energy produces power from coalbed methane gas (CBM) at the Osprey Point Renewable Energy Station that opened in mid-2013 on the grounds of the Merom Generating Station.

Coalbed methane is a natural gas stored in deep underground coal reserves. Coalbed methane technology has been widely used to collect gas for pipelines, but Hoosier Energy's plant is the only one in the United States that taps underground coalbed methane reserves to directly produce electric power.

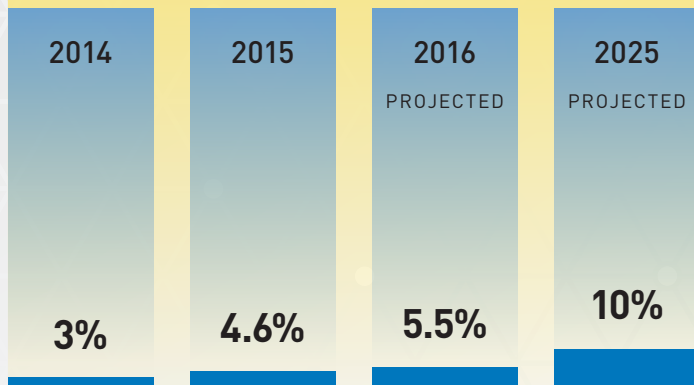
The 13-megawatt plant extracts CBM from 58 production wells. Four General Electric reciprocating engines then turn the gas into electricity.

## SOLAR

In 2015, Hoosier Energy announced a 10-megawatt solar program that consists of ten 1-megawatt solar arrays to be installed across member service territories. Installations began in 2015, with all 10 expected to be on line in 2016. Collectively, the solar "farms" will provide approximately 20,000,000 kilowatt-hours (kWh) of energy annually for the 300,000 consumers served by Hoosier Energy's 18 member distribution cooperatives.

A key goal of the project is to learn how this variable energy resource integrates onto the grid and how solar might offset the need for other more costly energy resources during periods of high demand. Once collected, this information will help member distribution systems give advice to member consumers on the operational issues, costs and benefits of solar as a renewable energy resource.

## PERCENT OF RENEWABLE ENERGY BY YEAR



## WIND

Wind power comes from two power purchase agreements. In 2008, Hoosier Energy purchased 25 megawatts of wind generation from a project in Story County, Iowa. In 2014, Hoosier Energy doubled its wind capacity, adding 25 megawatts of wind energy through a 15-year power purchase agreement with the Rail Splitter Wind Farm in Illinois.

## HYDRO

A 20-year power purchase agreement was finalized in 2012 for electricity produced by a 4-megawatt hydroelectric facility near Dayton, Ill. The plant produces about 18,000 megawatt-hours annually, enough to power about 1,500 homes. A 600-foot-long dam on the Fox River regulates water flow that is directed to a side canal. Electricity is produced by water pressure with virtually no emissions.

## DISTRIBUTED GENERATION

Hoosier Energy also provides support to member cooperatives when they work with consumers on small-scale renewable energy projects. The power supplier helps member systems evaluate data from seven distributed generation solar facilities, three wind facilities, as well as a solar thermal system now in use at West Washington School in Jackson County, the first of its kind to be installed at an Indiana public school. The solar hot water system was the first of its kind to be installed at an Indiana public school.

These renewable energy facilities are in operation to evaluate the long-term feasibility of residential- and commercial-scale wind and solar generation in southern Indiana.