



## Case Study: Exploring Consumer Needs

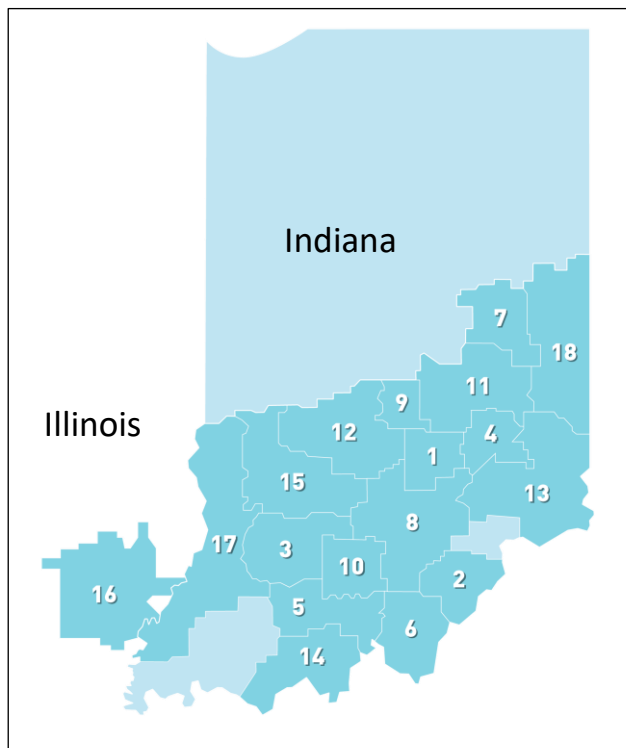
### Overview

The following case study reviews how Hoosier Energy explored consumer-member needs through pilot projects and research.



### Cooperative Profile

Hoosier Energy Rural Electric Cooperative, Inc. (Hoosier Energy) is a generation and transmission cooperative (G&T) that provides wholesale power and transmission services to 18 member electric distribution co-ops in central and southern Indiana and southeastern Illinois. Hoosier Energy's energy supply portfolio includes coal, natural gas and renewable energy resources that deliver power through a nearly 1,700-mile transmission network. Total system peak demand is roughly 1,700 megawatts (MW). Collectively, this cooperative network operates and maintains more than 36,000 miles of distribution lines and provides electric service to nearly 300,000 meters, or about 686,000 people, across 59 Indiana and Illinois counties, as shown in Figure 2.1.



**Figure 2.1: Hoosier Energy member cooperatives**

1. Bartholomew County REMC
2. Clark County REMC
3. Daviess-Martin County REMC
4. Decatur County REMC
5. Dubois REC, Inc.
6. Harrison REMC
7. Henry County REMC
8. Jackson County REMC
9. Johnson County REMC
10. Orange County REMC
11. RushShelby Energy
12. South Central Indiana REMC
13. Southeastern Indiana REMC
14. Southern Indiana Power
15. Utilities District of Western Indiana REMC
16. Wayne-White Counties Electric Cooperative

## Drivers of Hoosier Energy's Electrification Move

Electrification is not a new trend for Hoosier Energy. The G&T has been seeing increased interest in electric vehicles (EVs) and other emerging technologies for some time. Chief Technology Officer Bob Richhart predicts that emerging technologies will have far-ranging implications for the logistics, manufacturing and agribusiness industries and an even bigger impact on electric utilities themselves. In Richhart's words, "Electric vehicles—from cars to semis—are becoming big disrupters. Combine that with technologies that promise large-scale, energy efficiencies for commercial operations and you have more than just game changers. You have a new electric utility model." To begin addressing the challenge, the G&T co-op in October 2019 teamed up with Indiana's other G&T cooperative Wabash Valley Power Alliance and the Beneficial Electrification League to sponsor *Electrify Indiana!*, a conference focused on beneficial electrification modes and technologies. The conference was attended by as many as 200 state and local leaders, representatives from member distribution co-ops and investor-owned utilities, the Indiana Utility Regulatory Commission (IURC) and other stakeholders.

Developments related to Hoosier Energy's power supply portfolio have also provided impetus for investigating the long-term value of beneficial electrification. The G&T's January 2020 *Long-Range Resource Plan* announced a significant shift in the co-op's generation mix going forward. The plan contemplates the retirement of the 1,000 MW coal-fired Merom generating station in 2023. Modeling of long-term resources in the plan projects that replacement resources will include a combination of natural gas, wind and solar resources both owned and PPAs.<sup>1</sup> With this fundamental shift, carbon emissions will decline materially and conversion of business and consumer end-uses from oil, natural gas and propane to electricity will produce a net beneficial effect on the environment.

## Beneficial Electrification Trend

As noted above, the trend toward electrification is not new for consumer-members served by Hoosier Energy and its member co-ops. As Hoosier Energy's Integrated Resource Plan, which was submitted to the IURC in November 2020, indicates, electricity has been a favored energy source for some consumer end-use applications since 2009:

- An estimated 1,400 EVs or plug-in hybrid vehicles were owned in the combined service areas as of 2019.
- In the decades prior to 2008, 42 percent of new homes came with electric heat. Since then the share has risen to 55 percent.
- Use of electric heat pumps for air conditioning has increased from 12 percent in 2009 to 17 percent in 2019.

Planners at Hoosier Energy and its member co-ops are focused on managing this trend in ways that will realize the greatest possible benefits for consumer-members, their electric cooperatives and the environment. It is a carefully constructed approach, executed deliberately.

## Organizing to Promote Beneficial Electrification

Since 2019's *Electrify Indiana!* Conference, Indiana electric cooperatives have organized for beneficial electrification on several levels. Hoosier Energy and its members formed a committee of distribution representatives to evaluate the cooperatives' role in bringing the benefits of emerging

---

<sup>1</sup> Power purchase agreement (PPA) is an arrangement for electricity supply from resources not owned by the utility.

technologies to their respective communities.<sup>2</sup> One aspect of the committee's work is looking into how beneficial electrification can be brought under the existing umbrella of energy efficiency programs. Blake Kleaving is leading this effort with the member cooperatives. He took over as Hoosier Energy's Manager of Energy Management Solutions in February 2020. The job used to carry the title of Marketing Manager.<sup>3</sup> Kleaving views networking with other electric cooperatives nationwide as a good way to identify best practices in beneficial electrification that can be applied in Indiana and Illinois. He leads the Hoosier Energy DSM Subcommittee whose mission is to collaborate with the member cooperatives to identify the changing needs and habits of their consumer-members. There is also an Emerging Technology Committee, headed by Doug Childs, CEO of the Utilities District of Western Indiana REMC, and Hoosier Energy's Richhart. Hoosier Energy and its members are leaning into the future and their organizational structure reflects this.

## **Program Development**

Although Hoosier Energy and its member cooperatives are still in the early stages of launching full-scale, beneficial electrification programs, their carefully engineered approach relies on both research and direct experience. Ongoing research, networking exchanges with other electric cooperatives, use of NRECA resources and pilot test programs all contribute to raising the co-ops' level of understanding of issues and challenges so that larger scale programs that may lie ahead will be robust and low-risk. As Scott Bowers, Hoosier Energy's Vice President of Public Policy and Member Services says, "We are positioning ourselves to make smart investments and working shoulder-to-shoulder with our member cooperatives to ensure that there will be no surprises. The term I use to describe this process is 'constructive engagement.'"

## **Beneficial Electrification Programs Being Offered**

Hoosier Energy and its member cooperatives currently offer consumer-members an array of beneficial electrification programs:

- EV charging pilot program (Residential Level 2 and Commercial Level 2 chargers).<sup>4</sup>
- FleetCarma EV charging locational pilot program to capture where EVs are being charged.<sup>5</sup>
- Electric lawn equipment incentive pilot program.
- Residential HVAC incentive pilot tied into existing energy efficiency programs.
- Horticultural new construction LED lighting research and incentive pilot program.
- Commercial, industrial and agricultural research into beneficial electrification.

A glimpse into two of these programs is provided on the following pages.

---

<sup>2</sup> "Leading a Clean Energy Transition in Indiana," [Business Facilities Magazine](https://businessfacilities.com/2020/08/indiana-hoosier-energy-is-leading-a-clean-energy-transition/), August 24, 2020.

<sup>3</sup> <https://www.electric.coop/co-ops-staff-up-on-beneficial-electrification-to-meet-members-needs/>

<sup>4</sup> <https://chargehub.com/en/electric-car-charging-guide.html>

<sup>5</sup> <https://www.fleetcarma.com/smartcharge/>

## EV Charging Pilot

Hoosier Energy's team identified a strong need for EV charging stations in its member territories, both public and private, and this led to creation of the co-op's Cooperative Charge pilot program.

- Four EV charging solutions were evaluated using 10 criteria: differentiation; go-to-market; partners; investments; geographic reach; sales; portfolio; marketing; innovation; and staying power.<sup>6</sup> In the end, the team chose Enel X, which offers an established, smart EV charging system called JuiceBox, as shown in Figure 2.2.<sup>7</sup>
- Hoosier Energy has purchased 18 JuiceBox Pro commercial level 2 EV chargers, which allow for a quick charge and have two charging ports on each station, enabling simultaneous charging of multiple EVs.
- Hoosier Energy has also purchased 100 JuiceBox residential level 2 chargers. Each member co-op will receive five chargers and the remaining chargers will be available on a first-come, first-served basis. According to the co-op, these smart chargers will provide valuable information about patterns of use and the amount of energy consumed.



**Figure 2.2:**  
Enel X's JuiceBox smart EV charging system.  
Photo courtesy of Hoosier Energy

## Agricultural and Horticultural Initiatives

Hoosier Energy's research into electrification opportunities in outdoor farming and indoor agriculture includes testing of LED technology as grow lights in southern Indiana greenhouses. Hemp is one of the state's agricultural growth markets. According to the Office of the Indiana State Chemist, Indiana licensed 130 hemp farmers in 2019, with roughly 5,300 acres of outdoor production and approximately 400,000 square feet of indoor production.<sup>8</sup> Should pilot projects show promising results, scaled-up programs would not only save farmers money, but would also spur economic development in key sectors of agriculture. The possibilities are almost limitless. Ten billion dollars' worth of agricultural products were sold in Indiana (2016 data) and Illinois led the country in total value of outbound agriculture shipments, with over \$75 billion (2015 data).

## Lessons Learned

Hoosier Energy's Bowers has a word of advice for his fellow electric cooperatives. "As far as beneficial electrification goes, electric cooperatives are the tip of the spear. We have to be nimble. We need to learn where our consumer-members' interests lie. We need to be smart, thoughtful and

---

<sup>6</sup> <https://www.hoosierenergy.com/energylines/charging-ahead/>

<sup>7</sup> <https://evcharging.enelx.com/products/juicebox>

<sup>8</sup> <https://hempindustrydaily.com/midwest-region-harvest-preview-indiana-hemp-farmers-focus-on-hemp-fiber/>

pragmatic. We may not get it right every time. That's why pilot programs are important. They tell us whether a program is likely to gain traction and how to maximize the beneficial impacts. Our approach at Hoosier Energy is to experiment and explore." Wise advice indeed.

*This Case Study is part of NRECA's report: [Case Studies in Beneficial Electrification – Electric Cooperatives Develop Programs to Build Consumer Value and Meet Climate Change Goals](#), written by Eric Cody, Cody Energy Group, [codyenergygroup@gmail.com](mailto:codyenergygroup@gmail.com).*