



**DTE Energy**<sup>®</sup>

# CARBON REDUCTION INITIATIVE

EI Edison Award Finalist Submission





In May 2017, DTE Energy announced a \$15 billion broad sustainability initiative that has already reduced carbon emissions 25 percent since 2005, will cut carbon emissions 45 percent by 2030 and by more than 80 percent by 2050.

This voluntary initiative was unveiled by DTE at a time period defined by partisan debate over both climate change and whether the country and industry were stepping away from the path toward improved sustainability. Focused on balancing affordability for customers, improved outcomes for the environment and growth opportunities for both the company and Michigan's economy, DTE's carbon reduction announcement received an overwhelmingly non-partisan, positive response from legislators, NGOs, investors, customers and the media.

DTE's plan lays out deeper carbon emission reductions than mandated by the Clean Power Plan and aligns with the 2050 timeframe and reduction target scientists have broadly identified as necessary to help address climate change. The company is achieving these reductions by incorporating substantially more renewable energy, transitioning its 24/7 power sources from coal to natural gas, continuing to operate its zero-emission Fermi 2 power plant, improving options for customers to save energy and reduce bills, as well as the creation of an internal company program that encourages employees to reduce their carbon footprint. These plans outline a shift by DTE to produce over three-quarters of its power from renewable energy and highly-efficient natural gas-fired power plants, and transform its production capacity so that half of the energy it generates is sourced from zero-emission resources.

Due to the timing of DTE's carbon reduction announcement and the assertive targets detailed in the company's plan, Chairman and CEO Gerry Anderson was recognized by the Climate Registry and Center for Climate and Energy Solutions with the Individual Climate Leadership Award in 2017. DTE was also honored by the Michigan League of Conservation Voters as 2017 Business Leader of the Year.

# A BOLD INITIATIVE

DTE Energy's plan to reduce carbon emissions is among the most aggressive and was among the first to be announced in the energy industry - committing the company to a substantially tighter reduction curve than mandated by the Clean Power Plan and significantly higher levels of renewable energy generation. This voluntary initiative to retire coal-fired power plants was unveiled to provide leadership in addressing climate change during a tense time - in the early days of a new presidential administration when energy policies were being overhauled and the political climate was highly partisan.

The origin of DTE's carbon reduction initiative stems from Chairman and CEO Gerry Anderson's role in working with the industry on the Clean Power Plan in his role as a Chair of the Edison Electric Institute Environment Committee. Anderson worked with his peers, the Environmental Protection Agency (EPA) and the Federal Energy Regulatory Commission (FERC) to build consensus around the Clean Power Plan as a means to transition the energy industry to a cleaner energy mix while not unduly impacting affordability and reliability for customers.

As the chances of the survival of the Clean Power Plan waned, DTE felt the time was right to provide leadership by publicly announcing a bold carbon reduction plan that aligns with the 2050 timeframe scientists have broadly identified as necessary to help address climate change.

*"DTE believes we have a responsibility - and the country has a responsibility - to reduce carbon emissions. As the chances of survival for the Clean Power Plan decreased, we concluded we should take a step to move the debate in our country forward. We also recognized the growth opportunities tied to transitioning our economy to less carbon-emitting sources of generation. It fits the company's long-term business strategy and we expect that this emission reduction roadmap will be a path to growth for DTE."*

- Gerry Anderson, Chairman and CEO

Chad Livengood @ChadLivengood · May 16  
DTE Energy plans to be coal-free by 2040, 80% reduction in carbon emissions by 2050 [crainsdetroit.com/article/201705...](#) @crainsdetroit

**DTE Energy plans to be coal-free by 2040**  
In an effort to reduce harmful carbon emissions by 80 percent by 2050, the Detroit-based utility will invest \$15 billion over the next two decades in renewable energy an... [crainsdetroit.com](#)

Mark Tercek @MarkTercek · May 17  
Great leadership from @DTE\_Energy on 80% carbon reduction pledge!

**DTE to shut coal plants, cut carbon emissions by 80 percent by 2050**  
U.S. energy company DTE Energy Co said on Tuesday it will build more natural gas and renewable power plants and shut all of its coal units by 2040... [reuters.com](#)

UMich Energy @MichEnergy · May 16  
Congratulations to @DTE\_Energy! Coal phase-out by 2040 to address #climatechange. An important step forward. [crainsdetroit.com/article/2017...](#)



Two years of economic research and engineering analysis by DTE was finalized in early 2017. The result: The announcement of a long-term strategy to meet significant carbon reduction goals over the next three decades. The strategy outlines:

- Planning for the construction of an additional 4,000 megawatts of zero-emission renewable energy capacity.
- The addition of 3,500 megawatts of highly efficient natural gas-fired energy capacity to supply 24/7 power and ensure reliability.
- The steady retirement of the company’s aging coal-fired plants, with the announced shutdown of three coal plants by the early 2020s, and all coal plants by 2040.
- The investment of \$5 billion over the next five years to modernize the electric grid and gas infrastructure, ensuring reliability while creating and supporting more than 10,000 Michigan jobs
- Reducing energy use and water consumption at DTE facilities by a minimum of 25 percent and increasing recycling by at least 25 percent.

## LEADERSHIP RECOGNITION

Earned 221 stories with an estimated 884.3 million impressions.

**Detroit Free Press**  
PART OF THE USA TODAY NETWORK

“DTE plans for no coal plants, 80% cut in carbon by 2050”

 **REUTERS**

“DTE to shut coal plants, cut carbon emissions by 80 percent by 2050”



“Michigan’s largest power company is eliminating coal as Trump tries to boost it”



“DTE to shut coal plants, cut carbon emissions by 80 percent by 2050”



**CRAIN'S DETROIT BUSINESS**

# FINDING SOLUTIONS

DTE invested substantial time and resources to develop a strategy that would clearly define a pathway to fundamentally reducing its carbon emissions. Because DTE's initiative is not mandated, it was essential to pursue the commitment in a manner that supports two other critical priorities our customers expect: reliability and affordability.

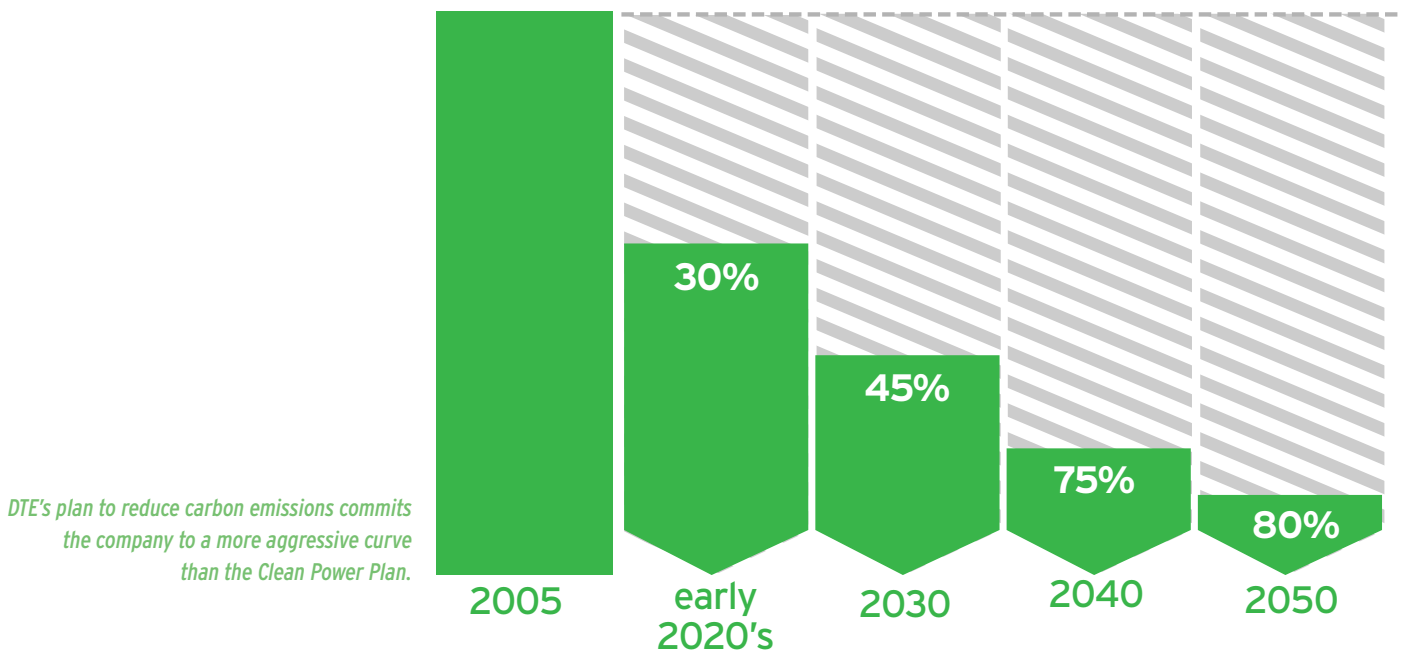
DTE analyzed multiple scenarios, including different sensitivities relating to gas prices and electricity market prices, as well as different cost and performance curves for renewable technologies. These scenarios include assumptions for:

- **High and low gas prices** (from \$2.70 in the near term and rising to \$8.40 by 2035)
- **Renewables** (ranging from only when economical, up to 50 percent of the portfolio)
- **CO2** (ranging from no CO2 price, up to \$40 per ton for allowances)
- **Majority of existing coal facilities retired by 2030** (with the exception of Monroe Power Plant)
- **Multiple energy efficiency programs deliver annual energy savings of 1.5 percent** (exceeding the Michigan minimum energy savings requirement)
- **Demand response programs expected to grow over the next five to 10 years**

In evaluating these scenarios, it became clear that not only is the 80 percent reduction in carbon emissions achievable by 2050 - it is achievable in a way that keeps Michigan's power affordable and reliable. There doesn't have to be a choice between the health of the environment or the health of the economy; both can be achieved if climate change is addressed in a smart way.

While a transformation of a large energy company's power production won't happen overnight, the fundamental transformation in the way DTE produces power in Michigan has already begun. Last year, DTE's carbon emissions were down 25 percent. These reductions will progress steadily in the years ahead with remarkably improving environmental outcomes - a 30-plus percent reduction by the early 2020s, 45 percent by 2030, 75 percent by 2040 and more than 80 percent by 2050.

## DTE's Future CO2 Emissions



# IMPLEMENTING INNOVATION

DTE's transition to cleaner energy is being pursued in ways that deliver investments and provide new economic opportunities for Michigan communities. Already Michigan's renewable energy leader, with 13 wind parks and 31 solar arrays in its renewable energy portfolio, DTE has proposed investing more than \$1.7 billion in Michigan to double its renewable energy capacity from 1,000 megawatts to 2,000 megawatts by 2022 through the addition of multiple new wind parks providing a combined 800-plus megawatts as well as 25 percent increase in solar capacity.

One of the wind parks that will contribute to DTE's expanding zero-emission energy capacity is the Pine River wind park. DTE began engineering and designing Pine River in 2017 with partner Invenergy LLC. With a 161-megawatt capacity, Pine River will be DTE's largest and most cost-efficient wind park to date - representing about 1 percent of the company's electrical generation when it begins operation later this year.

DTE also began operating two unique solar arrays in 2017. The Lapeer Solar Park, located on more than 250 acres in Lapeer, began producing enough clean energy to power 11,000 Michigan homes. DTE broke ground in 2016 on the 200,000-panel array, one of the largest energy company owned solar parks east of the Mississippi River. "The Lapeer project has been extremely positive for our residents," said Lapeer Mayor William Sprague. "It has called attention to Lapeer not only throughout the state but nationwide. I have received many calls from others in government regarding the project's benefits and what they can do to attract solar projects to their communities."

The O'Shea Solar Park in Detroit, one of the largest urban solar arrays in the Midwest, also began operation in 2017. The 20-acre decommissioned city land is being re-imagined through a unique public-private partnership between the City of Detroit and DTE. About half of the vacant land was converted into taxable revenue for the City with DTE's installation of solar panels, creating enough clean energy to power 450 homes. An additional four acres of park area bordering the local neighborhood are being renovated by the City to include new walking paths, resurfaced basketball courts, play fields and a community gathering space with seating, new trees and flower beds. The park builds upon the theme of sustainability with a rain garden that helps manage storm water to reduce neighborhood flooding, and provides an opportunity to showcase native plantings.



*Top photo DTE's Lapeer Solar Park became operational in May 2017. It is one of the largest solar parks in the eastern U.S.*

*Middle photo: DTE's O'Shea Solar Park became operational in August 2017. It is one of the largest urban arrays in the Midwest.*

*Bottom photo: An artist's rendering of the renovated O'Shea park.*





*Top photo: DTE has 13 wind parks in its generation portfolio and plans to bring additional parks online by 2022.*

*Bottom photo: DTE has initiated the process to build a new combined cycle gas plant.*

Additionally, DTE is partnering with non-profit organizations, including 100 Black Men, Reading Works, Detroit Employment Solutions and Goodwill, to deliver new workforce development, employment and literacy programs to residents who live near O'Shea park. "These solar projects help DTE Energy reduce emissions and provide clean energy to our customers, while also delivering on our commitment to spur economic growth and prosperity in the neighborhoods we serve," Anderson said.

As DTE's renewable power capacity grows, the company's analysis of Michigan's energy future also identified a need for new 24/7 energy sources to replace the three coal-fired power plants DTE has slated for retirement by 2023. Combined, these three coal-fired plants generated about 25 percent of the electricity produced by DTE in 2015.

To replace the 24/7 power provided by these coal plants while also significantly reducing carbon emissions, DTE filed a Certificate of Necessity with the Michigan Public Service Commission (MPSC) seeking to build a state-of-the-art 1,100 megawatt natural gas-fired power plant on existing company property in East China Township, that will provide affordable and reliable power beginning in 2022. DTE selected the East China Township site for its new natural gas plant because it already has electric, natural gas and other infrastructure in place, experienced employees and a supportive community - DTE has operated the St. Clair and Belle River coal-fired power plants there for many decades. "DTE has been an important partner to St. Clair County for more than 60 years, as a job creator, a responsible corporate citizen and a strong community partner," said Daniel Casey, CEO, St. Clair Economic Development Council. "We are excited about the move to cleaner energy and are thrilled that DTE has made the commitment to continue to be an integral part of our community for generations to come."

When approved, DTE expects plant construction to create about 500 jobs. "Representing the construction trades, I'm excited to see DTE investing in and bringing jobs into our state," said Shorty Gleason, Legislative Director, Michigan Building and Construction Trades Council. "This gas plant build represents real, sustainable economic growth and it will be exciting to be a part of the industry's transformation."

# LEADING BY EXAMPLE

DTE's strides to reduce carbon emissions weren't just limited to production capacity. In 2017, DTE rolled out an employee initiative called Raising Impact to Sustain our Environment (RISE) to activate and engage employees. The aggressive plan includes reducing energy, water use and waste within DTE's own facilities by a minimum of 25 percent by 2022. "We need to lead by example by reducing water and energy use at DTE as we work with customers to do the same," Anderson said.

DTE is involved in hundreds of sustainability-focused projects. For example, a paper use reduction contest activates office-based employees, while a RISE vehicle idling reduction initiative incentivizes employees who work at plants or in the field. Quarterly RISE communication campaigns throughout the year support the overall messaging that DTE is building a responsible, cleaner energy future and individual employee activities can make a difference.

In 2017, DTE reduced energy use at its headquarters complex by more than 13 percent and water use by 25 percent. Lighting use in the office areas at the two largest power plants decreased by 27 percent and water use was down 4 percent. In 2018, the company is striving to reduce energy use an additional 6 percent, water use by nearly 8 percent and waste by 10 percent.

Other sustainability projects focus on additional lighting upgrades, HVAC efficiency, installation of Energy Star appliances and launch of a total waste management program to standardize and improve recycling opportunities.



The foundation and strategy behind these projects was laid last year with the completion of comprehensive energy assessments at 44 DTE facilities across Michigan. A team visited each facility to determine its environmental impact and develop a list of projects to reduce energy and water use. A similar study, focusing on waste management, was also completed. The data from both assessments was used to prioritize environmental projects.

As DTE's involvement in sustainability grows, the company is increasingly involved in friendly competitions and partnerships focused on reducing the environmental footprint of commercial buildings.

These include:

- **Michigan Battle of the Buildings** - an awards and recognition program for energy use reduction. DTE has been recognized as a finalist in the Office Building category.
- **2030 District** - a public/private initiative focused on assisting building owners and managers in reducing energy, water and greenhouse gas emissions.
- **NextChallenge** - DTE is partnering with the winner of a software development contest to pilot energy efficiency technologies for its headquarters buildings.

As a leading member of the Electric Utility Industry Sustainable Supply Chain Alliance, DTE continues to work with its largest suppliers to advance sustainable business practices. DTE is piloting a new survey designed to provide a framework for suppliers to become more sustainable.

*"We need to lead by example by reducing water and energy use at DTE as we work with customers to do the same."*

- Gerry Anderson, Chairman and CEO



# ENGAGING CUSTOMERS AND THE COMMUNITY

DTE is not only working to minimize its own carbon footprint, but it also provides opportunities for its customers to do the same through the company's energy efficiency programs, which are among the most cost effective in the industry.

Customers taking advantage of DTE's energy efficiency offerings are seeing a significant return on their investment. For every \$1 the company spends on energy programs, DTE's customers save more than an estimated \$5 in avoided energy costs over the lifetime of the investment.

In 2017, DTE stepped up its customer-focused energy efficiency efforts with the rollout of its own marketplace online store, where residential customers can shop for energy-saving products such as thermostats and showerheads, compare products and get instant discounts.

DTE's award-winning Insight mobile app also began offering a budget feature that helps customers control their energy use and reduce bills. The new technology lets customers set an energy budget target and see how they are trending towards their goal. Additionally, the app offers the ability for customers to view the daily energy cost, and receive notifications when they are approaching usage or budget targets.

With these programs and offerings, DTE anticipates helping customers reduce their utilization of energy over the next five years, in both gas (1 percent annual reduction) and electricity (1.5 percent annual reduction).

In addition to empowering customers to control their own use, DTE also began offering customers the MIGreenPower voluntary renewable energy program in 2017, which enables enrollees to increase the amount of energy DTE sources from local wind and solar projects. The program is open to all DTE electric business and residential customers.



*"MIGreenPower is designed to address customer demand for a more flexible and affordable alternative."*

– Irene Dimitry, vice president of Business Planning and Development

"Until now, customers who wanted to use more renewable energy were limited to installing their own solar panels or other renewable equipment at their homes or businesses - which requires a significant initial investment," Dimitry said. "MIGreenPower is designed to address customer demand for a more flexible and affordable alternative."

As a civic-minded leader, DTE also partnered with the community group Detroiters Working for Environmental Justice, and a coalition of businesses, universities, environmental groups, city leaders and state agencies to release the Detroit Climate Action Plan in 2017. The plan outlines goals and defines actions plans for dealing with the challenges of climate and reducing carbon emissions, including expansion of energy efficiency programs, in the City of Detroit.



*DTE's award-winning Insight mobile app helps customers control their own energy use.*

## CONCLUSION

*“Leadership is not about a title or designation. It’s about impact, influence and inspiration. Impact involves getting results, influence is about spreading the passion you have for your work and you have to inspire teammates and customers.”*

- Robin S. Sharma,  
writer and motivational speaker

DTE’s sustainability initiative was announced during a time characterized by partisan debate over both climate change and whether the country and industry were stepping away from the path toward improved sustainability. DTE took a leadership role in moving the country forward and identified the opportunities to transition the economy to less carbon emitting sources of generation while continuing to provide reliable, affordable, safe and secure power to customers.

Through its action, DTE is positively impacting environmental outcomes both now and in the decades ahead. In the year since DTE’s announcement of its carbon reduction initiative, numerous other energy companies have followed suit and made similar announcements. In addition, DTE is inspiring employees and customers to live more sustainably by offering industry-leading programs to help reduce daily energy use and promote support for renewable energy.

*“We applaud DTE for shifting away from fossil fuels and leading the way toward a 21st century energy system in Michigan.”*

- Chris Kolb  
President, Michigan Environmental Council



*Due to DTE’s actions in 2017, Chairman and CEO Gerry Anderson was recognized by the Climate Registry and Center for Climate and Energy Solutions with the Individual Climate Leadership Award during their March 2018 Climate Leadership Conference.*

*“DTE’s bold plan to reduce the company’s emissions is exciting news for Michiganders across the state. Coming just a few months after state leaders passed strong clean energy reforms, DTE’s plan puts Michigan firmly on track toward clean, affordable, and reliable energy, regardless of what happens in Washington DC.”*

- Lisa Wozniak  
executive director,  
Michigan League of Conservation Voters