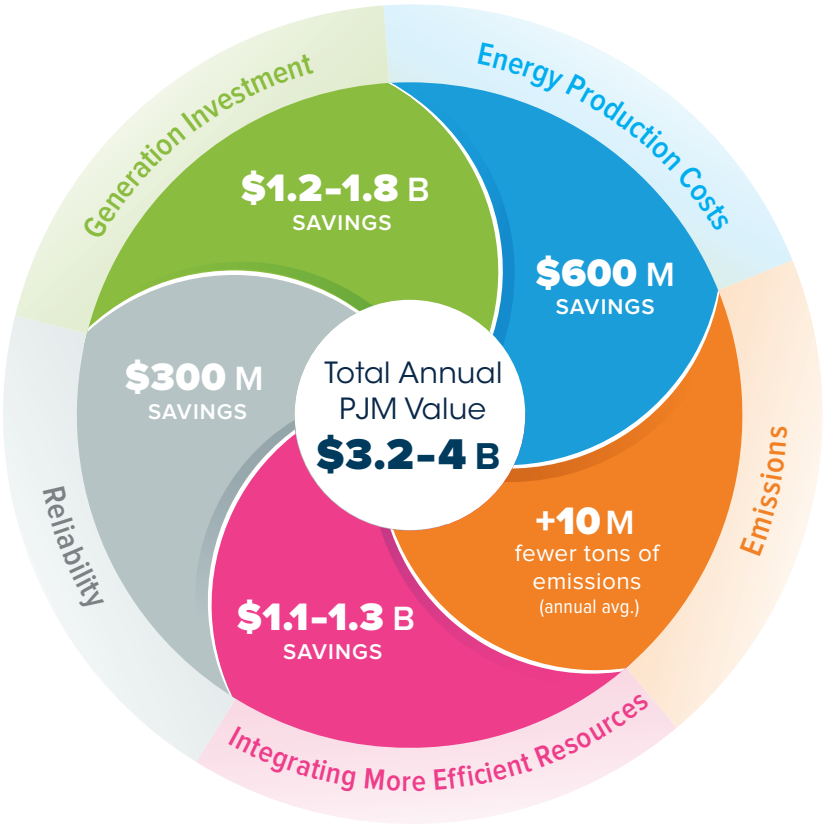
PJM Value Proposition

PJM Interconnection's operation of the high-voltage power grid, wholesale electricity markets and its long-term planning process provide significant value to the 65 million people in the region it serves.

PJM operations, markets and planning result in annual savings of $3.2–4 billion. These savings represent the vital functions that PJM provides and that lead to less cost to consumers:

- Ensuring reliable power 24 hours a day, 7 days a week
- Providing capacity for the future and reserves for emergencies
- Managing generation and other resources in real time to meet consumer demand
- Procuring specialized services that protect the stability of the grid
- Lowering emissions by encouraging generator efficiency
- Offering additional benefits including training, compliance audits and knowledge sharing



All numbers are estimates.

Reliability

Transmission enhancements in PJM are expected to reduce costs by nearly $300 million a year by alleviating congestion.

Regional Planning Efficiencies

PJM's regional planning process assesses the need for transmission upgrades to ensure reliability, increase efficiency and support public-policy goals.

PJM's large footprint makes the transmission planning process more effective by considering the region as a whole, rather than by individual states or separate transmission-owner territories, in determining transmission needs.

Investing in the transmission system can increase its ability to move more power, which can decrease congestion costs. ***Transmission enhancements in PJM are expected to reduce costs by nearly $300 million a year by alleviating congestion.***

$300 M
SAVINGS

Generation Investment

This results in savings of $1.2–1.8 billion.

Lower Reserve Margin and Competition from Alternative Resources

The fact that PJM plans for resource adequacy over a large region results in a lower reserve margin than otherwise would be necessary.

Resource adequacy means having enough generating resources available to meet the demand for electricity, plus a reserve margin to cover emergencies.

There is considerable diversity in electrical use patterns in the large PJM footprint; not all areas peak at the same time of the year.

As a result, resources in one area of the system are available to help serve other areas at peak times, and a smaller reserve is required.

In addition, the large and varied resource fleet across the entire PJM region spreads the generator outage risk across a larger collection of generators, improving reliability.

PJM's Reliability Pricing Model capacity market promotes competition between traditional generation and alternative supply resources such as demand response. With more cost-effective alternatives to maintain adequate power supplies, less investment is needed in new generation. ***This results in savings of $1.2–1.8 billion.***

$1.2–1.8 B
SAVINGS

Integrating More Efficient Resources

More efficient units demonstrate a savings of $1.1–1.3 billion a year

Replacement of Less Efficient Resources

PJM's efficient generation interconnection process, combined with the competitive RPM capacity market, has enabled less efficient generation resources to retire and to be replaced with more efficient, less costly, plants.

From the annual RPM auction from 2011 through 2018, nearly 30,000 megawatts of new, increasingly efficient natural gas combined-cycle generation either has already commenced operation or is committed to be built through the RPM auctions.

These resources operate more efficiently, with lower heat rates and in most cases lower fuel costs, than the older, less efficient resources they have replaced through retirement.

Simulations of the increased cost that would be associated with continuing to operate the retired resources instead of the new, more efficient units demonstrate a ***savings of $1.1–1.3 billion a year.***

$1.1–1.3 B
SAVINGS

Energy Production Costs

Operating the larger market creates production cost savings of $600 million a year

Expanded Dispatch Area

PJM's dispatch process enables energy to be exchanged economically and automatically when less expensive resources in one area can be used to meet consumer electricity demand in another area.

Prior to the expansion of the PJM footprint more than a decade ago, energy usually was exchanged between areas only when energy sales transactions were scheduled between two suppliers.

Without the operation of the centralized market structure that exists today, economic energy exchanges occurred much less frequently and efficiently.

Simulations of the economic dispatch and energy exchange before and after the PJM market expansion show that operating the larger market creates production cost ***savings of $600 million a year.***

$600 M
SAVINGS

Emissions Savings

Annual average reduction of more than 10 million fewer tons of CO_2 emissions

PJM contributes to climate policy goals while maintaining reliability through the efficient operation of the wholesale power markets.

Competition in organized markets results in greater energy efficiency. Efficient plants burn less fuel and produce fewer emissions. Since 2005, PJM has seen an overall reduction in emissions of approximately 30 percent as a result of an increase in wind generation, other renewables and the inexpensive shale gas boom in the PJM region. This translates to an *annual average reduction of more than 10 million fewer tons of CO_2 emissions.*

+10 M
Fewer Tons of Emissions
(annual avg.)

Additional Benefits

PJM is a source of neutral, independent data, analysis, knowledge and expertise for the industry, lawmakers and regulators. In this role, PJM facilitates information sharing and informs decisions that help strengthen the grid and drive the power industry forward.

Training

PJM is dedicated to continuing education and providing training for industry professionals.

- PJM offers more than 160 training days a year, attended by 7,000 trainees, including 1,000 member company operators
- PJM awards 45,000 NERC continuing education hours annually
- 17,000 of the continuing education hours are simulation training, which prepares trainees for real-world experiences in system and market operations

Compliance Audits

As a regional transmission organization, PJM is audited periodically (every three years) by ReliabilityFirst, NERC and SERC Reliability Corporation. These audits review PJM's compliance with Critical Infrastructure Protection standards, operations and planning standards. The approximate cost for PJM to complete an audit is $2 million. Because PJM is registered as the transmission operator and is audited by ReliabilityFirst, NERC and SERC, individual transmission owners do not have to participate in the audits on their own. The cost for an audit for a transmission owner would vary but could total more than $2 million for one individual transmission owner alone.

Innovation

PJM provides opportunities and a marketplace for innovators – such as PJM member organizations, research and academic institutions, and industry experts – to strengthen and enhance the power grid. PJM also conducts in-depth research and produces detailed white papers on various topics to promote information and knowledge sharing.

PJM supports and facilitates emerging technology programs to integrate batteries, electric vehicles and other power storage into PJM's markets, as well as ongoing initiatives to explore how the burgeoning development of distributed energy resources can be integrated more effectively with grid operations.

Working to Perfect the Flow of Energy

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