

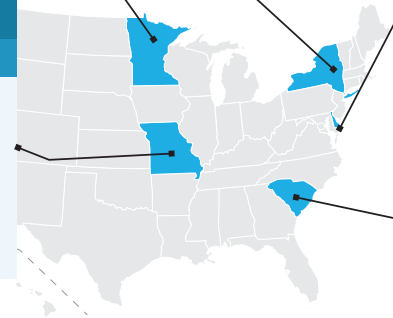
Utilities Adapt Resource Plans to Reap Economics of Renewables, Storage


Long-term plans seek to incorporate intermittent and customer-controlled resources because of falling costs, state mandates, and changing energy mix

Industry Insight

Clean energy and energy storage are making their way into utility integrated resource plans (IRPs). Until a decade ago, IRPs were based on historic trends with proposals to add central generation as needed, and plans were limited to supply-side options. As the electric system has grown in complexity, the **full range of supply and demand-side resources** now includes intermittent large-scale renewables, customer-sited distributed resources, energy efficiency, demand response, upgrades to aging infrastructure, and legislative clean energy mandates. However, **integrating intermittent renewables into the grid is challenging** despite their growing competitiveness. Utilities also face the challenge of forecasting distributed energy resources controlled by customers or third parties. Advanced prediction tools are critical to prevent unneeded capital investments and stranded assets or generation shortfalls.


Select Bills Related to Integrated Resource Plans



MN  SF 2710


Introduced | 26 February 2018

Would **require energy storage in IRPs** and public interest determinations to assess whether storage can replace part or all of the energy provided by a proposed facility

NY  S 2358


Introduced | 3 January 2018

Would direct the Energy Research and Development Authority to do a study as to a **comprehensive energy plan for the downstate** region of New York

DE  SB 191


Passed one chamber | 6 June 2018

Would allow utilities to **file an IRP upon making a significant change in generation mix** or as the commission may direct because 100 percent of supply comes from market based auctions; current legislation requires to file IRPs every two years

MO  SB 727

Passed one chamber | 18 May 2018

Would require that the **comprehensive state energy plan** be reviewed by the Division of Energy by January 1, 2019, and biennially thereafter, and updated if necessary

SC  H 4425

Introduced | 8 March 2018

Would require IRPs to represent a **range of strategies considering all available** utility-owned, customer-owned, market-based, and demand-side management resources, including a portfolio that models the maximum achievable level of cost-effective demand-side management, and **consider retirement dates for any uneconomical infrastructure**

Systematically misforecasting distributed solar adoption over 15 years can increase the present value of utility system costs by up to \$7 million per terawatt-hour of electricity sales, compared to a perfect prediction, according to a report by the U.S. Energy Department's Berkeley Lab. The report also notes that forecasts are under "continuous refinement," with advanced utility resource plans using customer adoption models to forecast solar growth.



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Recent Actions by Utilities and State Regulators


WA Utilities Must Examine the Viability of Coal UE-160353 7 May 2018

The Washington Utilities and Transportation Commission accepted the 20-year energy resource plans of the state's investor-owned utilities Avista Corporation, Pacific Power, and Puget Sound Energy Inc., but **expressed concern over the costs of continued operation of their coal-fired power plants and the economic risk posed by future investment in those generation sources.**

OR Commission Denies Approval to PacifiCorp's Wind Farm 22 May 2018

The Oregon Public Utility Commission voted two-to-one **not to acknowledge PacifiCorp's procurement of 1,311 -megawatts wind generation**, finding that the company's selection process was rushed and failed to demonstrate that the lowest-cost and lowest-risk projects were tapped.

MI Consumers Energy to End Coal, Achieve 43% Renewables 13 June 2018

Consumers Energy Company proposed a long-term plan for Michigan that calls for retiring the Karn Coal fired plant in 2023 and **eliminating coal use by 2040**. The utility seeks to increase renewable energy to 43 percent by 2040, up from 11 percent today. The company cited modeling analysis showing that increasing **energy efficiency, demand management, and renewable energy are the most affordable means** to meet future needs.

DTE, Consumers Energy Announce 50% Renewables Goal 18 May 2018

Michigan utilities DTE Energy and Consumers Energy said they are moving forward with plans to **get 50 percent of their energy from clean energy resources by 2030** using a combination of renewables and efficiency.

ID Rocky Mountain Power to Replace Coal PAC-E-17-03 12 April 2018

The Idaho Public Utilities Commission accepted Rocky Mountain Power Inc.'s **integrated resource plan** to meet electricity demand over the next 20 years. The plan calls for the **retirement of over 3,500 megawatts of coal-fired generation that would be replaced largely by wind and solar.**

Idaho Power Unveils Energy Plan PAC-E-17-11 20 February 2018

Idaho Power Company, a subsidiary of IDACORP Inc., **will lean on energy efficiency and supplies of low-cost power accessible through its linkage in the spring with the western Energy Imbalance Market** to make up for capacity lost with the retirement of coal plants

Avista Adds Storage for First Time in IRP AVU-E-17-08 8 February 2018

Avista Utilities, a division of Avista Corp., filed its integrated resource plan with the Idaho Public Utilities Commission. The utility expects **conservation to offset over half of the projected demand growth** through 2037, and will build **2.5 megawatt-hours of storage and 15 megawatts of solar.**

NV NV Energy Bets on Renewables, Storage 18-06003 1 June 2018

NV Energy asked the Nevada Public Utilities Commission to approve plans to **add 1,001 megawatts of renewable power** purchase agreements and 100 megawatts of energy storage as part of its 2019-2038 IRP

CA California Prioritizes Solar and Storage R1602007 13 February 2018

The California Public Utility Commission adopted a two-year planning cycle to set emission targets and consider integrated resource plans from load-serving entities. The commission adopted **a reference system that calls for an additional 9 GW of solar, 2 GW of battery storage, 1.1 GW of wind and 200 MW of geothermal as the optimal resource portfolio** against which entities should compare their individual resource plans.

NC Duke Slashes Modernization Plan by \$5.3 Billion 1 June 2018

Duke Energy Carolinas LLC reached an agreement with environmental groups to **cut the price tag of its Power/Forward Carolinas grid modernization plan to \$2.5 billion, from \$7.8 billion**, and scale back the initiative to three years, from a decade. Duke's updated plan includes voltage optimization, electric-vehicle charging infrastructure and at least 300 megawatts of energy storage, which is still subject to the approval of the North Carolina Utilities Commission.

IL Illinois to Achieve 25% Renewables by 2020 17-0838 3 April 2018

The Illinois Commerce Commission has approved the **Long-Term Renewable Resources Procurement Plan, which outlines the path for Illinois to acquire a quarter of its energy from renewable sources by 2025**. The plan includes the procurement of about 700 megawatts of community and distributed solar, and lays out the purchase requirements for the state's utilities, Ameren Corp., ComEd Co., and MidAmerican Energy Co.

CO Xcel to Close Coal Plants 16A-0396E 6 June 2018

Public Service Company of Colorado, a unit of Xcel Energy Inc., filed its Colorado Energy Plan, a blueprint for the utility to source over half of its electricity from renewables and **cut carbon emissions by 60 percent by 2026**. The plan, filed with the Colorado Public Utilities Commission, directs the company to add **1,100 megawatts of wind power, 700 megawatts of solar power, and 225 megawatts of energy storage** paired with solar. It would **close 660 megawatts of coal-fired generation at the Comanche plant ahead of schedule.**

AZ Arizona Bans New Natural Gas Plants E-00000V-15-0094 20 March 2018

The Arizona Corporation Commission rejected (E-00000V-15-0094) 15-year IRPs filed by the state's investor-owned utilities and **ordered them to develop plans that reduce their planned reliance on new natural gas-fired power** in favor of more renewable energy and storage.

Select Open Dockets Related to Integrated Resource Plans



CA PUC	R1602007	Order Instituting Rulemaking to Develop an Electricity Integrated Resource Planning Framework	OH PUCO	18-0484-EL-FOR	In the Matter of The Long-Term Forecast and Resource Plan of Duke Energy Ohio, Inc.
CO PUC	16A-0396E	Public Service Company - 2016 Electric Resource Plan	OR PUC	LC 70	In the Matter of PACIFICORP 2019 IRP
CT PURA	13-06-02	PURA Investigation of Connecticut's Local Distribution Companies' Proposed Expansion Plans	PR EC	CEPR-MI-2018-0005	Regulation on the Integrated Resources Plant
IN IURC	45058-NONE	In The Matter Of The Submission By Hoosier Energy Rural Electric Cooperative, Inc. of Its 2017 IRP	RI PUC	4816	National Grid - Gas Long-Range Resource and Requirements Plan for Period from 2017/18 to 2026/27
KY PSC	2017-00384	2017 IRP of Big Rivers Electric Corporation	SC PSC	2018-9-E	South Carolina Electric & Gas Company's IRP
KY PSC	2016-00413	2016 Integrated Resource Planning Report Of Kentucky Power Company	UT PSC	17-035-16	PacifiCorp's 2017 IRP
LA PSC	I-34693	Cleco Power LLC's request to Initiate 2017 Integrated Resource Planning process	VA SCC	PUR-2018-00065	Virginia Electric and Power Company's IRP filing
LA PSC	I-34694	2017 Integrated Resource Planning Process for Entergy Louisiana, LLC	VA SCC	PUR-2018-00051	Appalachian Power Company's IRP filing
MN PUC	15-690	In the Matter of Minnesota Power's Application for Approval of its 2015-2029 Resource Plan	VA SCC	PUR-2018-00069	Kentucky Utilities Company d/b/a Old Dominion Power Company - IRP filing
MN PUC	15-21	In the Matter of Xcel Energy's 2016-2030 Upper Midwest Resource Plan	WA UTC	UE-160353	Pacific Power & Light Company's 2017 IRP
MO PSC	EO-2018-0269	KCP&L Greater Missouri Operations Company (GMO) 2018 IRP	WA UTC	U-161024	Consideration of changes to existing rules to reflect technological change and current best practices for Integrated Resource Planning
MO PSC	EO-2018-0268	Kansas City Power & Light Company (KCP&L) 2018 IRP	WA UTC	UG-170911	Northwest Natural Gas' 2018 IRP Work Plan
MO PSC	EO-2018-0038	In the Matter of Ameren Missouri's 2017 Utility Resource Filing	WI PSC	5-EI-141	Investigation on the Commission's Own Motion to Review the 18 Percent Planning Reserve Margin Requirement
NM PRC	17-00174-UT	Public Service Company of New Mexico's IRP for the Period 2017-2036	WY PSC	14994	In the matter of the filing of Montana Dakota Utilities Company of its IRP for plan for 2017
NV PUC	18-06003	Joint Application of NV Energy for approval of their 2019-2038 Triennial IRP and 2019-2021 Energy Supply Plan			

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RD PUC

January 17, 2017: Agenda of Commission Meeting

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