

Integrated Resource Plan



Integration Resource Planning

The Missouri Public Service Commission (MPSC) requires Missouri electric utilities that produce over 1 million megawatt-hours annually to develop a 20-year resource plan. The process used to develop this 20-year plan is known as Integrated Resource Planning (IRP). The fundamental objective of the resource planning process is to ensure the public is provided with safe, reliable, and efficient energy services at just and reasonable rates.

The IRP process includes developing alternative resource plans. These alternative resource plans may include:

- New generation resources (traditional and/or renewable)
- Demand-side management resources (DSM)
- Generating plant retirements
- Additional environmental controls on existing generating plants (scrubbers, bag house, etc.)

Integration Resource Planning (continued)

These alternative plans are analyzed with respect to performance measures including the 20-year net present value revenue of requirements, levelized annual average rates including maximum single-year increase in annual average rates, utility financial ratios, and other measures the utility considers appropriate. The primary criterion for selecting the “Preferred Plan” from the list of alternative plans analyzed is the minimization of net present value of revenue requirements.

Every three years, a compliance filing is submitted to the MPSC which outlines the IRP process, assumptions, analysis results and the Preferred Plan selected. For the years in which this triennial compliance filing is not required, an annual update analysis is performed to determine if the Preferred Plan from the prior IRP needs to be changed and to update interested parties if any actions that were expected to occur during the three-year window have changed.

Integration Resource Planning (continued)

The last Kansas City Power & Light Company (KCP&L) and KCP&L Greater Missouri Operations Company (GMO) triennial IRP filings occurred on April 1, 2015. The most recent annual updates were filed March 15, 2016 and the next triennial filings are scheduled to occur by April 1st, 2018.

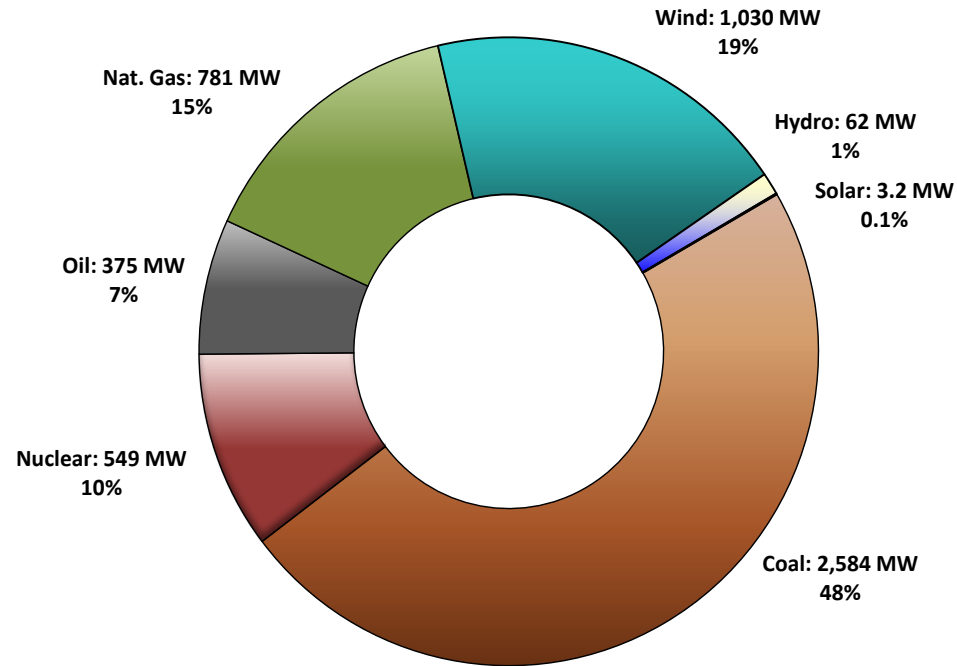
Highlights of the current IRP Preferred Plans for KCP&L and GMO are outlined below:

KCP&L –

- 2016-2025 Generation additions - 350 MW of wind (2016), 300 MW of wind (2017), 3 MW of solar (2016)
- Cease burning coal – 170 MW (2016), 340 MW (2021)
- Additional Demand-Side Management – 249 MW by 2025

Integration Resource Planning (continued)

By 2018, when all planned wind resources currently under contract are in service, the capacity makeup of KCP&L is expected to be as follows:



Note: Wind capacity is based upon nameplate

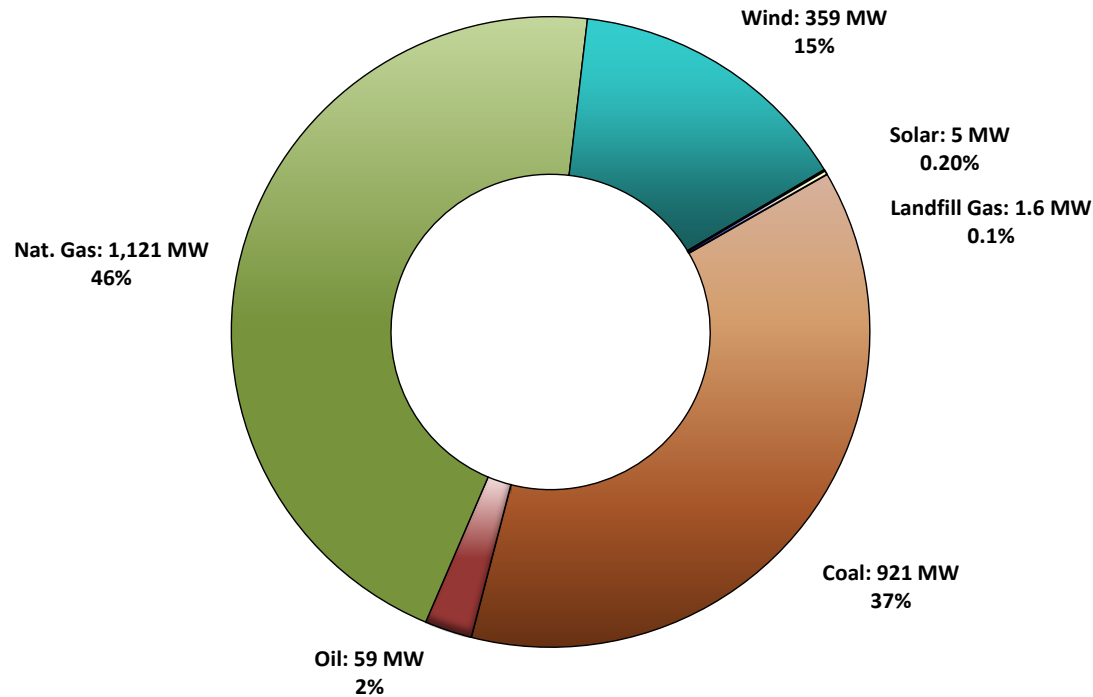
Integration Resource Planning (continued)

GMO –

- 2016-2025 Generation additions - 200 MW of wind (2017), 60 MW of wind renewal (2017), 5 MW of solar (2016)
- Cease burning coal – 96 MW (2016), 97 MW (2019)
- Additional Demand-Side Management – 445 MW by 2025

Integration Resource Planning (continued)

By 2018, when all planned wind resources currently under contract are in service, the capacity makeup of GMO is expected to be as follows:



Note: Wind capacity is based upon nameplate

Integration Resource Planning (continued)

The 2016 KCP&L IRP Annual Update can be viewed in its entirety at the Missouri Public Service Commission website:

<https://www.efis.psc.mo.gov/mpsc/>

Select Resources, Case Information, Case Filing/Submission.

Case Number: EO-2016-0232.

The 2016 GMO IRP Annual Update can be viewed in its entirety at the Missouri Public Service Commission website:

<https://www.efis.psc.mo.gov/mpsc/>

Select Resources, Case Information, Case Filing/Submission.

Case Number: EO-2016-0233.