

"Estimated cost of compliance with the updated draft IRP rules for each electric utility, which will be used to inform the development of the fiscal notes for the formal rulemaking process. Estimated costs of compliance are costs not already contemplated by Section 393.1900 RSMo, or compliance costs under the existing IRP rules."

It is assumed that this request should be a change in cost to comply with the new IRP rules as compared to the requirements in the statute and above the costs to comply with the existing IRP rules. The process envisioned by the proposed updated draft IRP rules are different enough from the existing process that it is difficult to provide an accurate estimate at this time. The Company is still trying to understand the rules and cannot estimate the cost of a process that has never been undertaken. With that said, the Company believes that the new process is highly prescriptive and, in many cases, more onerous than the existing IRP process and will result in a significantly higher cost to comply.

Although it has not been decided at this time, the new IRP process may require portions of one or more full-time employees and certainly more consulting costs. As just a few examples from the new updated draft rule, the following items could increase costs significantly: the substation level load forecasting, the additional scenario requirements (e.g. large load impacts), benchmarking against other forecasts, re-running for stale data, providing stakeholders with modelling software tools, and the new requirements within the transmission and distribution section would all require significant time and costs.

Stakeholder	Rule Citation	Requested Change	Summary of Comment
Liberty-Empire	Definitions 20 CSR 4240-21.015 (3, 44)	Instead of explicitly using a 365-day period, it would be more beneficial to use terms like "annual" or a "calendar year".	In multiple definitions (this being the first) it references "annual" data as explicitly meaning a three hundred sixty-five (365)-day time period. However, most planning software contains underlying calendars that are calendar correct with weekdays, weekends, and include leap years. With a planning horizon of at least 16 years, there will be multiple leap years with more than 365

			days. Is there a reason for defining annual as an exact 365-day period?
Liberty-Empire	Definitions 20 CSR 4240-21.015 (7, 8, 18, 35)	Clarity on units of measurement.	In multiple definitions, when measuring capacity or demand, the definition explicitly states, “measured in kilowatts (kW)” and for energy it explicitly states, “measured in kilowatt-hours (kWh).” Is the rule attempting to compel the utility to use these units when depicting and labeling data? For example, it is more common to label large units of demand with megawatts and energy with megawatt-hours.
Liberty-Empire	Definitions 20 CSR 4240-21.015 (12)	A candidate resource should not be defined as a resource that advances to be included in one (1) or more alternative resource plans. A viable candidate that may be considered in the modelling process should not be predicated on it advancing to an alternate plan. By definition, a candidate is something that is considered for inclusion, but it is not guaranteed inclusion. A candidate	The proposed rule defines candidate resource options to mean the potential demand-side and supply-side resource options that advance to be included in one (1) or more alternative resource plans. There appears to be a problem with this definition. Why does a viable candidate need to be included in a resource plan? It would seem logical that some candidates that pass screening tests could be a resource option used in the modelling but not be selected to be a part of any resource plans. Candidate resource options are selected prior to the optimization modelling taking place, so how can we know if the candidate resource will be included in an alternate resource plan? A good example would be a small modular nuclear unit. It makes sense that they should be studied and be considered a resource option, but it may not be selected for any resource plan for a variety of reasons.

		resource is one that passes initial screening, is a viable resource which the utility can reasonably expect to use, develop, implement, or acquire and is passed on to the optimization modelling where it may or may not be selected for a resource plan.	
Liberty-Empire	Definitions 20 CSR 4240-21.015 (17)	Clarification on degree-day base temperature.	The definition uses 65 degrees as a base temperature for a degree-day. Is this just an example or is this definition attempting to state that 65 degrees should be used as the base temperature in all cases?
Liberty-Empire	Definitions 20 CSR 4240-21.015 (43)	Clarification about which forecast this definition applies to	This definition states that a historical period means the ten (10) most recent years, or the period of time used as the basis of the electric utility's forecast, whichever is longer. Does this mean the electric utility's load forecast (aka, demand, and energy forecast), as opposed to a fuel forecast for example? It is not completely clear what forecast is being referenced in the definition.
Liberty-Empire	Definitions 20 CSR 4240-21.015 (57)	The Southwest Power Pool (SPP) does not use a local clearing requirement (LCR) capacity construct	According to the definition, the local clearing requirement means the minimum amount of capacity needed to ensure reliability within a specific local resource zone or reserve zone. It shall be calculated consistent with the

			appropriate RTO/ISO requirements. It is our understanding that the Midcontinent Independent System Operator (MISO) uses Local Clearing Requirements (LCR) as a core component of its resource adequacy framework. However, some Missouri utilities (including Liberty) are in SPP and not MISO. SPP does not use a LCR capacity construct.
Liberty-Empire	Definitions 20 CSR 4240-21.015 (64)	Clarification of net system loads	This definition may be fine, since it states, “the hourly electric supply necessary to meet the energy demands of the electric utility’s customers and the electric utility’s own internal needs.” However, since it mentions netting out the station use, should it also mention the net of other system losses such as line losses, meter losses, etc.? Since you are including one item that is netted out, should it be more inclusive?
Liberty-Empire	Definitions 20 CSR 4240-21.015 (70)	Planning reserve margin may need more clarification	The Planning Reserve Margin (PRM) is the required capacity buffer above forecasted peak demand that Load Responsible Entities (LREs) must maintain to ensure reliability. It is applied to an entity’s Net Peak Demand to determine total resource adequacy obligations. The current definition in the proposed rule may be overly simplified based on the current resource adequacy constructs in the various RTO/ISOs. This may be further complicated if different RTO/ISOs have different such constructs. For example, in SPP there is a base PRM and an accredited capacity PRM. The accredited capacity

			PRM is calculated from the base PRM based on a published formula.
Liberty-Empire	Load Forecasting Requirements, 20 CSR 4240-21.030 (1) (G)	Clarification of the type of data required. It should not mean the quantification of each policy or mandate on the forecast.	It is helpful that the last sentence in the previous version was eliminated which stated, “the electric utility shall quantify and document the expected load impacts of each applicable policy or mandate.” The quantification of each policy or mandate is likely too cumbersome to implement, and the old version implied that each law or regulation is modeled for impact. But it may still be a bit troublesome since the new wording states, “to include data for applicable federal, state, and local laws, regulations, and policies that affect energy consumption, including energy efficiency standards, electrification initiatives, and decarbonization requirements.” What is meant by “data” in this passage? Is it still meant to quantify the load impacts?
Liberty-Empire	Load Forecasting Requirements, 20 CSR 4240-21.030 (1) (I)	Energy efficiency assessment and the optimized capacity expansion modeling take place after the load forecast is developed. Therefore, the load forecast should not be concerned with energy efficiency potential assessment.	This seems to imply that whatever is in the potential study should be included in the forecast. We have generally excluded the potential study impacts from the load forecast because potential studies tell you what is possible, but they do not describe what will be done. By including these in the forecast, you assume that energy efficiency measures are more cost effective than other supply side options. It is better to compare the potential study results with supply options to find the most cost-effective solutions.

Liberty-Empire	Load Forecasting Requirements, 20 CSR 4240-21.030 (1) (K)	Clarity is needed on how the effects of electricity prices can impact the load forecast when the forecast is completed before the optimization and financial modelling is completed.	<p>The requirement is that the utility shall ensure the forecast accounts for the effects of electricity prices, real price of competitive energy sources, and rate design on customer usage. The electric utility shall include the price elasticity of demand, and the impacts of approved rate structures such as time-of-use rates, demand charges, and dynamic pricing mechanism.</p> <p>Timing can be an issue with this requirement as the IRP load forecast is typically one of the first analysis completed. For example, the future real price of electricity from the IRP study would not be known at the time the load forecast is developed. Also, the IRP has many different alternate plans, and each plan can have a different price of electricity, different demand response programs, etc.</p>
Liberty-Empire	Load Forecasting Requirements, 20 CSR 4240-21.030 (3) (K) (1)	The utility should not be required to search for other forecasts developed by other entities in order to benchmark or validate.	This requirement seems onerous. This implies that we need to do a literature search for any other entities that have conducted load forecasts for the region. Additionally, contrasting service territory forecasts versus RTO, government agencies, or other high-level forecasts may produce a highly speculative analysis without the granular insight into how those forecasts were created. This step is overly burdensome and does not provide sufficient value given the work involved.
Liberty-Empire	Load Forecasting Requirements, 20 CSR	The number of years for historical years to be	These sections dictate the number of historical years to be used. While longer historical data series are useful, they are not always applicable

	4240-21.030 (5) (D) (1-3)	used should not be prescriptive.	to the forecast problem. There needs to be language to allow for shorter periods of time if needed.
Liberty-Empire	Load Forecasting Requirements, 20 CSR 4240-21.030 (6-7)	Large load prospects change with time and vary by utility. Large load forecasts should not be prescriptive.	The different levels of large interconnections mean additional scenarios. We should be careful about how many mandated scenarios we will be required to run. How do these large load scenarios work with Section (9) Sensitivity Analysis and Scenario Development?
Liberty-Empire	Load Forecasting Requirements, 20 CSR 4240-21.030 (9) (B)	The IRP rule should not require substation level load forecasts.	This requires substation level forecasts. This is something we do not currently perform. To incorporate substation level forecasts would be significantly more expensive. The cost and complexity significantly outweigh any perceived benefits.
Liberty-Empire	Resource Plan Requirements, 20 CSR 4240-21.060 (1)	Optimization models may not be able to converge with a solution with multiple performance measures.	The Alternative Resource Plan and Preferred Resource Plan Requirements section of the proposed rule discusses the Specification of Performance Measures used to determine the preferred resource plan. The existing rule specifies the use of the minimization of the present worth of long-run utility costs as the primary selection criterion in choosing the preferred resource plan, subject to other constraints. This is often referred to as the minimization of the net present value of revenue requirements (NPVRR). A primary selection criterion appears to be missing from the proposed rule. While flexibility in the selection process is important and we do agree with the introduction of the decision scorecard approach in the proposed rule which allows for the

			consideration of multiple factors, it seems that minimizing NPVRR is still a good planning practice. Further, models may need a single planning selection criterion in order to optimize plans. Models may not be able to evaluate multiple selection standards.
Liberty-Empire	General Provisions, 20 CSR 4240-21.010 (2) (C) 4	Clarification to allay concern about a potential requirement that IRP data must come from an RFP or RFI process.	In the proposed General Provisions section, it mentions the consideration of the availability for purchase from third parties of affordable and reliable generation, together with any required transmission. There is no concern with this requirement so long as it does not intend to limit or change the fact that most supply-side candidates are generic in nature and are considered candidates for the purpose of evaluating a diverse set of resource options through a modelling process. We do not agree, for example, that resource cost estimates for IRP evaluation should be required to come from other parties via an RFP or RFI process. Other parties may not offer reliable data inputs simply for planning purposes and there may not be any guarantees that a third party provided cost would still be applicable at the end of the planning process.
Liberty-Empire	Supply-Side Resource Analysis, 20 CSR 4240-21.035 (3) (D)	Clarification of interconnection costs and any other transmission requirements.	In the Supply-Side Resource Analysis section, it states that the electric utility shall include the cost of interconnection and any other transmission requirements, in addition to the electric utility cost and probable environmental compliance cost, in the cost of supply-side

			<p>candidate resource options advanced for purposes of developing the alternative resource plans.</p> <p>The Company agrees that a proxy for transmission and other costs are important to consider, but it is important to emphasize that most candidate resources evaluated within the IRP process are generic resources. The cost of interconnection, for example, would most likely not be known at the time of the IRP evaluation. It seems like the proposed rule should make some consideration for this and mention an “estimate” of costs that are to be considered.</p>
<p>Liberty-Empire</p>	<p>Standards and Dataset Management, 20 CSR 4240-21.025 (8)</p>	<p>Clarification regarding providing stakeholders modelling software tools and concerns about any requirements to mandate the IRP modelling software tools.</p>	<p>In the proposed Standards and Dataset Management Requirements it states: The electric utility shall provide staff and public counsel reasonable access to modeling software, tools, standards, formatting and data files the electric utility used for the purpose of verifying results or performing independent modeling runs, as the commission designated in conformance with section 393.1900.1(5) RSMo. The electric utility shall bear all costs of compliance for this section.</p> <p>This section of the proposed rule seems very problematic. What does access to modeling software and tools mean exactly? For a study that is conducted once every four years, the Company may not license or have seats to any or all of the software utilized in such a rigorous study.</p>

			<p>Generally, consultants who specialize in the various aspects of the IRP study are hired and they make use of the software for which they have expertise and have proper authorized access. The software choice could change over time if different consultants are utilized, or if the same consultants, at their own discretion, change software. In order to minimize costs, the Company may not have access to, or the training needed to make use of this proprietary software used by their consulting team. Is the Company now required to bear the cost of providing software to others who likely are not trained users of the software?</p> <p>The Company would also have issues if this part of the proposed rule is mandating common IRP modeling tools within the state of Missouri. One size does not fit all, and the Company should be able to select their own consulting team, if desired, without having the limitations on which planning tools must be used. Having the freedom to select appropriate IRP software tools and consultants could also be a key factor in helping to manage IRP costs.</p>
Liberty-Empire	Resource Plan Requirements, 20 CSR 4240-21.060 (2) (A)	The Southwest Power Pool (SPP) does not use a local clearing requirement (LCR) capacity construct	A key component of the proposed IRP rule appears to be to meet the Local Clearing Requirements. As defined by the proposed IRP rule, the LCR is the minimum amount of capacity needed to ensure reliability within a specific local resource zone or reserve zone. It shall be

	<p>Resource Plan Requirements, 20 CSR 4240-21.060 (3) (H) 3</p> <p>Filing Requirements, and the Integrated Resource Plan, 20 CSR 4240-21.020</p> <p>General Provisions, 20 CSR 4240-21.010 (2) (C) 1</p>		<p>calculated consistent with the appropriate RTO/ISO requirements.</p> <p>However, it is our understanding that MISO has this type of construct, and the Southwest Power Pool (SPP) does not. In other words, this would be an RTO/ISO requirement that does not exist for all utilities operating in the state, including Liberty. What are the LCR implications for SPP utilities?</p>
Liberty-Empire	<p>Filing Requirements, and the Integrated Resource Plan, 20 CSR 4240-21.020 (3) (C)</p>	<p>According to the proposed rule, the Executive summary is supposed to be suitable for distribution to the public. However, the prescriptive list of requirements may be contradicting this goal.</p>	<p>This part of the proposed rule provides a prescriptive list of components for the IRP Executive Summary. A potential problem with a prescriptive list is that it may make the IRP Executive Summary confidential (such as the request for financial ratios among others). It seems like an Executive Summary should be a public report with limited redactions, if possible.</p>
Liberty-Empire	<p>Standards and Dataset Management, 20 CSR 4240-21.025 (3) 2</p>	<p>Clarification concerning formulas and cell references for data that is not stored in an electronic spreadsheet.</p>	<p>Regarding workpaper, the proposed rule states [data] provided in searchable electronic formats with all formulas, cell references, and data links intact, to allow full traceability of calculations.</p> <p>One obvious problem with this requirement is that not all calculations will necessarily be performed in a spreadsheet such as Excel. Much of the analysis and data could be housed in proprietary software that produces calculations and stores</p>

			results. This is especially true of analyses such as Monte Carlo simulations.
Liberty-Empire	Implementation Plan Development and Reporting Requirements 20 CSR 4240-21.065	Clarification of intent on level of detail required.	What is the intent and reasoning behind the significant increase in information (such as schedule for engineering and construction phases)? This information is often site and unit specific when resource planning relies on generic resources.
Liberty-Empire	Alternative Resource Plan and Preferred Resource Plan Requirements 20 CSR 4240-21.060 1C1	Clarification on reliability metrics.	Are new reliability metrics such as LOLE and EUE suggested or required?
Liberty-Empire	Alternative Resource Plan and Preferred Resource Plan Requirements 20 CSR 4240-21.060 3G2	Clarification on implication of requirement to optimize/build portfolios under each Critical Uncertain Factor.	Implies requirement to optimize/build portfolios under each Critical Uncertain Factor (CUF). If this is required, this is a substantial departure from current modeling approach. We currently optimize new portfolios only under base assumptions, and test CUFs for those portfolios through dispatch and financial model, but no new portfolios optimized/built specifically under CUFs.
Liberty-Empire	Alternative Resource Plan and Preferred Resource Plan Requirements 20 CSR 4240-21.060 6B1	Clarification of expectation for contingency analysis.	<p>What is expected in the contingency analysis? Is this asking for analysis based on risks to pricing, tax credits, load, etc.?</p> <p>Is this a new/enhanced requirement, or the same as previous rules where a qualitative discussion can serve as contingency if the preferred plan cannot be executed? If this is a new requirement, more detail is needed.</p>

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